EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

MAIN REPORT
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

MAIN REPORT
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<td>ACSH (WP)</td>
<td>Advisory Committee on safety and health at work (Working party)</td>
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<tr>
<td>AIL</td>
<td>Analytical intervention logic</td>
</tr>
<tr>
<td>APCMA</td>
<td>L'Assemblée permanente des chambres de métiers et de l'artisanat</td>
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<tr>
<td>AT</td>
<td>Austria</td>
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<td>ATEX Directive</td>
<td>Directive on the harmonisation of the laws of the Member States relating to</td>
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<td></td>
<td>equipment and protective systems intended for use in potentially explosive</td>
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<td></td>
<td>atmospheres</td>
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<td>BE</td>
<td>Belgium</td>
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<td>BenOSH</td>
<td>Benefits of Occupational Safety</td>
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<td>BG</td>
<td>Bulgaria</td>
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<td>BusinessEurope</td>
<td>Advocate for growth and competitiveness at European level</td>
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<tr>
<td>CAD</td>
<td>Chemical Agents at Work Directive</td>
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<tr>
<td>CEEMET</td>
<td>European employers’ organisation representing companies of the metal,</td>
</tr>
<tr>
<td></td>
<td>engineering and technology-based industries</td>
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<tr>
<td>CEFIC</td>
<td>European Chemical Industry Council</td>
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<tr>
<td>CIETT</td>
<td>International Confederation of Private Employment Agencies</td>
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<tr>
<td>CMD</td>
<td>Carcinogens or Mutagens Directive</td>
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<tr>
<td>CPM</td>
<td>Common process and mechanism</td>
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<tr>
<td>CSR</td>
<td>Country Summary Report</td>
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<tr>
<td>CY</td>
<td>Cyprus</td>
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<td>CZ</td>
<td>Czech Republic</td>
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<td>DE</td>
<td>Germany</td>
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<tr>
<td>DG EMPL</td>
<td>Directorate-General Employment</td>
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<td>DG ENV</td>
<td>Directorate-General Environment</td>
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<tr>
<td>DG GROW</td>
<td>Directorate-General Enterprise and Industry</td>
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<tr>
<td>DG JUST</td>
<td>Directorate-General Justice</td>
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<tr>
<td>DK</td>
<td>Denmark</td>
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<tr>
<td>DNEL</td>
<td>Derived No Effects Level</td>
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<tr>
<td>DSE</td>
<td>Display Screen Equipment</td>
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<tr>
<td>DWEA</td>
<td>Danish Working Environment Authority</td>
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<td>EASE</td>
<td>European Association for Storage of Energy</td>
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<td>ECHA</td>
<td>European Chemicals Agency</td>
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<td>ECSA</td>
<td>The European Community Shipowners’ Associations</td>
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<td>EE</td>
<td>Estonia</td>
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<td>EFBWW</td>
<td>European Federation of Building and Woodworkers</td>
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<tr>
<td>EFCI</td>
<td>European Federation of Cleaning Industries</td>
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<tr>
<td>EFFAT</td>
<td>European Federation of Food, Agriculture and Tourism Trade Unions</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>EHIS</td>
<td>European Health Interview Survey</td>
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<td>EL</td>
<td>Greece</td>
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<td>EMF</td>
<td>Electromagnetic Field</td>
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<td>EODS</td>
<td>European Occupational Diseases Statistics</td>
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<td>EPSU</td>
<td>European Federation of Public Service Unions</td>
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<td>EQC</td>
<td>Evaluation question Coherence</td>
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<td>EQE</td>
<td>Evaluation question on Effectiveness</td>
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<td>EQR</td>
<td>Evaluation question on Relevance</td>
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<td>ER</td>
<td>Employee Representative for occupational safety and health matters</td>
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<td>ES</td>
<td>Spain</td>
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<td>ESAW</td>
<td>European Statistics on Accident at Work</td>
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<td>ESENER</td>
<td>European Survey on New and Emerging Risks</td>
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<tr>
<td>ETF</td>
<td>European Transport Workers’ Federation</td>
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<tr>
<td>ETUC</td>
<td>European Trade Union Confederation</td>
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<td>ETUI</td>
<td>European Trade Union Institute</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<td>EU-OSHA</td>
<td>European Agency for Safety and Health at Work</td>
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<tr>
<td>Eurocoa</td>
<td>European Association for Coal and Lignite</td>
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<tr>
<td>Eurofer</td>
<td>European Steel Association</td>
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<tr>
<td>Eurofound</td>
<td>European Foundation for the Improvement of Living and Working Conditions</td>
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<tr>
<td>Eurometaux</td>
<td>European Association of Metals</td>
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<tr>
<td>Euromines</td>
<td>Recognized representative of the European metals and minerals mining industry</td>
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<tr>
<td>Europêche</td>
<td>Association of National Organisations of Fishing Enterprises in the European Union</td>
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<tr>
<td>Eurostat</td>
<td>Statistical Office of the European Union</td>
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<tr>
<td>EWCS</td>
<td>European Working Conditions Survey</td>
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<tr>
<td>FEVE</td>
<td>The European Container Glass Federation</td>
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<td>FI</td>
<td>Finland</td>
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<tr>
<td>FIEC</td>
<td>European Construction Industry Federation</td>
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<tr>
<td>FR</td>
<td>France</td>
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<tr>
<td>FWD</td>
<td>Framework Directive</td>
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<tr>
<td>Glass for Europe</td>
<td>Trade association for Europe's manufacturers of building, automotive and transport glass</td>
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<tr>
<td>HOSPEEM</td>
<td>European Hospital &amp; Healthcare Employers’ Association</td>
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<tr>
<td>HOTREC</td>
<td>Hotels, Restaurants &amp; Cafés in Europe</td>
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<td>HU</td>
<td>Hungary</td>
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<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
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<td>IMA-Europe</td>
<td>Industrial Minerals Association – Europe</td>
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<td>IR</td>
<td>Ireland</td>
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<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>ISSA</td>
<td>International Social Security Association</td>
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<td>ISSG</td>
<td>Inter-Service Steering Group</td>
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<td>IT</td>
<td>Italy</td>
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<tr>
<td>IWG</td>
<td>Intergovernmental Working Group</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<tr>
<td>JISHA</td>
<td>Japan International Safety and Health Association</td>
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<tr>
<td>KR</td>
<td>Key requirement</td>
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<td>LFS</td>
<td>Labour Force Survey</td>
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<td>MODERNET</td>
<td>Programme which aims at establishing a network for monitoring trends in occupational diseases, such as allergic and infectious diseases and reproductive hazards, and new and emerging occupational risks caused by biological agents</td>
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<tr>
<td>MQ</td>
<td>Mapping question</td>
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<tr>
<td>MSD</td>
<td>Musculoskeletal Disorder</td>
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<td>MT</td>
<td>Malta</td>
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<tr>
<td>NACE</td>
<td>(Nomenclature of Economic Activities) is the European statistical classification of</td>
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### Acronym Definitions

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<td>economic activities</td>
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<td>NIR</td>
<td>National Implementation Report</td>
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<td>NL</td>
<td>Netherlands</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<tr>
<td>OEL</td>
<td>Occupational Exposure Limit</td>
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<tr>
<td>OSH</td>
<td>Occupational Safety and Health</td>
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<td>PL</td>
<td>Poland</td>
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<td>PlasticsEurope</td>
<td>Association of Plastic Manufacturers</td>
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<td>PT</td>
<td>Portugal</td>
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<td>RAC</td>
<td>Committee for Risk Assessment</td>
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<td>RO</td>
<td>Romania</td>
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<tr>
<td>SBS</td>
<td>Structural Business Statistics</td>
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<tr>
<td>SCOEL</td>
<td>Scientific Committee on Occupational Exposure Limits</td>
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<td>SDS</td>
<td>Safety Data Sheet</td>
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<td>SE</td>
<td>Sweden</td>
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<td>Seveso Directive</td>
<td>Directive 82/501/EC was a law aimed at improving the safety of sites containing large quantities of dangerous substances. It is also known as the Seveso Directive, after the Seveso disaster.</td>
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<td>Slovenia</td>
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<td>SK</td>
<td>Slovakia</td>
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<td>SLIC</td>
<td>Senior Labour Inspectors Committee</td>
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<td>SME</td>
<td>Small and Medium Enterprise</td>
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<tr>
<td>TS</td>
<td>Tender Specifications</td>
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<tr>
<td>UEAPME</td>
<td>European Association of Craft, Small and Medium-Sized Enterprises</td>
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<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>UNIZO (SME)</td>
<td>UNIZO’s platform for growing entrepreneurs</td>
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<tr>
<td>UPEG</td>
<td>‘Union Européenne des Producteurs de Granulats’ (European Aggregates Associati)</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VOV</td>
<td>Virksomhedsovervågning (Monitoring Preventive Work Safety and Health Measures at Workplace Level)</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
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<tr>
<td>WorkSafeBC</td>
<td>Workers’ Compensation Board of British Columbia</td>
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Glossary of terms

Health
In referring to occupational health, the ILO states that:

‘The term health, in relation to work, indicates not merely the absence of disease or infirmity; it also includes the physical and mental elements affecting health which are directly related to safety and hygiene at work.’ (1)

Similarly, the WHO defines health (not specifically in an occupational context) as:

‘A state of complete physical, mental and social well-being, and not merely the absence of disease.’

Occupational diseases
In defining disease in a work context, both ILO and WHO suggest two terms, occupational diseases and work-related diseases:

According to ILO/WHO: occupational diseases are specified as:

‘Any disease contracted as a result of an exposure to risk factors arising from work activities.’ It is emphasized that the definition contains two important elements: the exposure-effect relationship between a specific working environment and/or activity and a specific disease effect on the one hand, and the fact that these diseases occur among the group of persons concerned with a frequency above the average morbidity of the rest of the population. (2)

Furthermore, in the EU-statistical acquis the following definition is provided:

---

A case of occupational disease is defined as a case recognised by the national authorities responsible for recognition of occupational diseases. The data shall be collected for incident occupational diseases and deaths due to occupational disease\(^{(3)}\).

Work-related diseases

Both ILO and WHO acknowledge, however, that it might not be appropriate to refer to some diseases as ‘occupational diseases’ because of their multifactorial nature where, although work factors might make a significant contribution to their aetiology, other important (non-work) factors also have a clear role. Thus, ILO/WHO suggest that:

‘The term work-related diseases may be appropriate to describe not only recognized occupational diseases, but other disorders to which the work environment and performance of work contribute significantly as one of the several causative factors’.

Work-related health problems

As noted above, health is not merely the absence of disease and, perhaps reflecting this, one term which is widely used within the EU is that of work-related health problems (in some cases, a more specific focus is adopted e.g. work-related skin problems). No formal definition of this term has been found. Despite this, a number of key data sources have used the term (or equivalents). Thus both the 2007 and 2013 Labour Force Surveys included ad hoc modules on work-related health problems whilst the ESENER 2 questionnaire, which mainly addresses risks to health, refers more specifically to work-related musculoskeletal health problems\(^{(4)}\).

In the EU-statistical acquis the following definition is provided:

‘Work-related health problems and illnesses are those health problems and illnesses which can be caused, worsened or jointly caused by working conditions. This includes physical and psychosocial health problems. A case of work-related health problem and illness does not necessarily refer to recognition by an authority and the related data shall be collected from existing population surveys such as the European Health Interview Survey (EHIS) or other social surveys.’\(^{(5)}\)

All of these three concepts: occupational diseases (recognised in the EU Member State where the occupational diseases are reported), work-related diseases (clinically diagnosed disorders) and work-related health problems (often revealed through population surveys), all add value and clarification to the general OSH debate. However, as the present study assesses, implementation of the OSH acquis and its effect on trends in diseases, health problems and accidents at the EU level through limited and occasionally fragmented data, the definitions pose certain challenges for the present study. For instance, an occupational disease may be recognised as an occupational disease in some Member States and not in others (e.g. stress). Likewise, survey data may supplement statistical data to gain insight into developments in both occupational and work-related diseases, when offering the best possible foundation for analysis. As no clear EU-level distinction


\(^{(4)}\) See for example Eurostat presentation of the ad-hoc modules on work-related health problems (http://ec.europa.eu/eurostat/cache/metadata/en/hsw_apex_esms.htm#stat_pres142415836046)

between these three concepts is currently available, we shall therefore apply rather broad meanings to the terminology in the recognition that national distinctions may be lost when data is aggregated to the EU-level.

Occupational accidents

**Occupational accidents** and **accident at work** is defined by the EU as:

‘A discrete occurrence in the course of work which leads to physical or mental harm.’\(^{(6)}\)

By way of additional clarification, it is noted that such accidents include cases of acute poisoning and wilful acts of other persons, as well as accidents occurring during work but off the company’s premises, even those caused by third parties. However, it excludes deliberate self-inflicted injuries, accidents on the way to and from work (commuting accidents), accidents having only a medical origin and occupational diseases.

The phrase ‘in the course of work’ means whilst engaged in an occupational activity or during the time spent at work. This includes cases of road traffic accidents in the course of work.\(^{(7)}\)

Adopting a slightly different approach, the ILO states that:

‘The term **occupational accident** covers an occurrence arising out of, or in the course of, work which results in fatal or non-fatal injury.’\(^{(8)}\)

Thus the EU definition focusses on the nature of the harm (physical or mental) whilst the ILO description acknowledges the varying severity of the outcome. As the severity of the accident is usually addressed separately, the EU definition is generally the more useful and will be adopted here.

Overlaps

A neutral term that designates cases where different Directives set similar requirements or use similar Common Processes and Mechanisms. For example, there are worker information requirements in almost all OSH Directives, except in the ATEX and Medical treatment on board vessels Directives.

Inconsistencies

When a requirement under one Directive is contradictory to another requirement under another Directive (e.g. definitions of same terms that are conflicting) or when the aims of the Directives are contradictory. We also find potential inconsistencies when the CPMs identified under the Directives are not drafted in a consistent manner and do not contain the same levels of detail. It also covers cases where provisions from non-OSH legislation have contradictory objectives or requirements.


compared to the OSH legislation. We also find potential inconsistencies when other EU legislation/policy or international instruments set additional or more stringent requirements.

Synergies
We define synergies as positive effects from overlaps between OSH Directives in the form of enhancement of OSH protection and/or cost effectiveness for employers, for example, requirements under one act helping employers to implement requirements under another act.

Interfaces
Denote areas where the requirements from one piece of legislation form the basis for implementation of a requirement in another piece of legislation (e.g. REACH safety data sheets forming the basis for risk assessments under OSH legislation). Interfaces can lead to:

› Synergy: Used when interfaces between OSH legislation and other EU legislation appear to lead to enhanced OSH protection (e.g., where the information generated under one non-OSH legislation will help employers to implement the obligations under EU OSH legislation.)

› Gap: An incomplete interface between pieces of legislation, preventing or limiting potential synergy effects from being exploited.

› Inconsistency: See above.

Reporting obligations
We define reporting obligations as the following types of requirements:

1. The obligation to supply information (on request or automatically) to the competent authorities
2. The obligation to keep certain documents at the workplace (e.g. health record, explosion protection document, risk assessment) in view, for example, of an inspection.

Compliance costs
In line with the Standard Cost Model (SCM), compliance costs include all the costs of complying with regulation, with the exception of direct financial costs and long-term structural consequences. Further, compliance costs can be divided into:

› Substantive compliance costs (such as investments in safety equipment or physical changes in the workplace)

› Administrative costs (such as documentation and information obligations).

Administrative burdens
Administrative burdens are a specific type of administrative cost (see explanation above). According to the SCM, an important distinction must be made between information that would be collected by businesses in absence of legislation (business-as-usual) and information that would not normally be collected without legal provision. Costs that fall outside the business-as-usual category are identified as administrative burdens.
Introduction

This is the Main Report of the project ‘Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States’. The objective is to evaluate the practical implementation of EU OSH Directives in EU Member States, with a view to assessing effects and impacts and based on the identified strengths and weaknesses, putting forward possible improvements to the regulatory framework. The evaluation covers a total of 24 OSH Directives (see Table 1-1) and their implementation in 27 Member States.\(^{(9)}\)

The purpose of the Main Report is to provide the comprehensive overview of findings, conclusions and recommendations arising from the evaluation. The report includes 24 Directive-specific reports (enclosed in Appendix E) and 27 Country Summary Reports (CSRs) on the implementation of the Directives in the Member States (enclosed in Appendix G). Furthermore, it is complemented by a synthesis report, providing a summarised version of key findings, conclusions and recommendations.

The evaluation is guided by a set of questions and evaluation criteria, which are addressed for all Directives and Member States. There are two main sets of questions. The first set is related to the implementation of the Directives in the Member States, and the second set is related to the evaluation. The latter set of evaluation questions addresses the three main evaluation criteria of relevance, effectiveness and coherence.

- **Relevance**: examine the extent to which the aims of the Directives are up to date in addressing needs and issues related to the health and safety of workers – including both current relevance and future relevance, based on known trends.

- **Effectiveness**: analyse if the Directives are achieving what they set out to; how significant these achievements are; and analyse what benefits (including broader effects) and costs arise as a result of fulfilling the requirements.

- **Coherence**: assess, if any, inconsistencies, overlaps, or synergies can be identified across and between the Directives and how interrelated the Directives are with other measures.

\(^{(9)}\) Croatia was not a part of the EU when the evaluation was initiated and is thus excluded from the Task Specification.
and/or policies at the European level also covering aspects related to health and safety at work, such as EU legislation in other policy areas.

The Main Report is structured as follows:

- Chapter 2 presents the study approach and methodology followed for this complex evaluation covering 24 Directives and 27 Member States
- Chapter 3 presents a brief labour market overview and comparison with OSH in four selected countries
- Chapter 4 draws out the findings from the 27 Country Summary Reports in respect to the questions on mapping of the implementation of the Directives
- Chapter 5 presents the findings with respect to the questions on relevance
- Chapter 6 presents the respective findings to the questions on effectiveness
- Chapter 7 presents findings with respect to both a cost and benefit analysis and an analysis of broader effects (evaluations questions 5 and 6 under Effectiveness, which due to methodological deviations have been presented in a separate chapter).
- Chapter 8 presents the findings regarding the questions on coherence
- Finally, chapter 9 presents the conclusions and recommendations arising from the study.

Table 1-1  24 OSH Directives

<table>
<thead>
<tr>
<th>Type of Directive</th>
<th>Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Directives</td>
<td>Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work (Framework Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 89/654/EEC concerning minimum safety and health requirements for the workplace (Workplace Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2009/104/EC on the minimum safety and health requirements for the use of work equipment by workers at work (Work Equipment Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 89/656/EEC on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (Use of PPE Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 92/58/EEC on the minimum requirements for the provision of safety and/or health signs at work (OSH signs Directive)</td>
</tr>
<tr>
<td>Type-of-worker Directives</td>
<td>Directive 91/383/EEC supplementing the measures to encourage improvements in the safety and health at work of workers with a fixed-duration employment relationship or a temporary employment relationship (Temporary workers Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding</td>
</tr>
<tr>
<td>Type of Directive</td>
<td>Directive</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Sector-specific Directives</td>
<td>Directive 92/57/EEC on the implementation of minimum safety and health requirements at temporary or mobile construction sites (Construction Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 92/104/EEC on the minimum health and safety requirements for improving the safety and health protection of workers in surface and underground mineral extracting industries (Mines and Quarries Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 92/91/EEC concerning minimum requirements for improving the safety and health protection of workers in the mineral extracting industries through drilling (Drilling Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 92/29/EEC on the minimum safety and health requirements for improved medical treatment on board vessels (Medical treatment on board vessels Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 93/103/EC concerning the minimum safety and health requirements for work on board fishing vessels (Fishing vessels Directive)</td>
</tr>
<tr>
<td>Hazard-specific Directives</td>
<td>Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (Vibration Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2003/10/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (Noise Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2004/40/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (EMF Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2006/25/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (artificial optical radiation) (AOR Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 1999/92/EC on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres (ATEX Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work (Carcinogens or mutagens Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work (Chemical Agents Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2009/148/EC on the protection of workers from the risks related to exposure to asbestos at work (Asbestos Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work (Biological Agents Directive)</td>
</tr>
<tr>
<td></td>
<td>Directive 90/269/EEC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers (Manual Handling Directive)</td>
</tr>
<tr>
<td>Type of Directive</td>
<td>Directive</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Directive 90/270/EEC on the minimum safety and health requirements for work with display screen equipment (DSE Directive)</td>
</tr>
</tbody>
</table>

Please notice that, in consideration of the readers and in order to avoid unnecessary repetition of the Directives’ official titles and codes, henceforth we refer to the 24 OSH Directives by mean of their respective abbreviations, added in parenthesis in the Table above.
2 Study process and methodology

This chapter presents the evaluation methodology. Data collection through mapping of OSH at the Member State level is presented, as well as interviews carried out at both the EU and Member State levels.

2.1 Introduction

The evaluation aim is to cover the practical implementation of the OSH Directives in EU Member States, with a view to assessing their relevance, effectiveness and coherence and identifying possible improvements to the regulatory framework. The focus of the evaluation is the 24 EU OSH Directives in 27 Member States (Croatia not included) in the period 2007-2012.

The evaluation is structured in three main tasks with a number of evaluation questions and outputs defined under each task. The tasks are: 1. Mapping of the practical implementation at the national level in the Member States; 2. Evaluation according to the criteria of relevance, effectiveness and coherence; 3. Recommendations.

2.1.1 Evaluation process and tasks

Figure 2-1 below presents the main tasks and deliverables of the evaluation.
The Commission has overseen the evaluation through an interdepartmental group.

2.2 Four steps in the evaluation process

The Framework Directive and the 23 related Directives set the general frame for OSH in the Member States. In spite of being of different natures and coverages, the Directives can be structured into four categories:

- General Directives
- Hazard-specific Directives
- Sector-specific Directives
- Type-of-worker Directives

Because of the unique character of each of the 24 Directives, they cannot be analysed fully within a single/unique methodological approach. Hence, while the overall methodology remains comparable across Directives, the exact analytical approach is Directive-specific and dependent on aspects such as Directive characteristics and data availability.
The evaluation deliverables include 24 Directives reports, including a report on the Framework Directive, and the 27 Country Summary Reports, which summarise the national implementation of each Directive in the Member States. The overall findings and conclusions arising from the 24 Directive reports are presented in this Main Report, along with cross-Directive analyses on the OSH acquis. Findings are synthesised in the overall synthesis report.

The methodology follows four analytical steps shown in Figure 2-2. The figure also shows two input steps, A and B. Input step A is related to the mapping of the implementation of the Directives, while Input step B concerns data collection.

Figure 2-2  Steps in the evaluation methodology

In the sections below, we describe each of the four steps.

2.2.1  Step 1: Hazards

The first step in the methodology is to identify the hazards addressed by the respective Directives. Understanding these hazards constitute the basis for assessing the three evaluation criteria:

›  **Relevance:** Having a clear picture of the hazards that each Directive is intended to address is necessary for developing an understanding of the scope of the labour market covered by the Directive, as well as its development, and thus for investigating whether the Directive is fit for purpose. For example: Does the hazard still exist? How many people in today’s labour market are exposed to the hazard? And have technological changes eliminated the hazard or are they likely to do so in the future?

›  **Effectiveness:** Understanding the hazards is also important for assessing whether the Directive has been effective in reducing them. This makes it possible to identify and establish a set of operational indicators for measuring workplace and safety and health impacts.

›  **Coherence:** Lastly, understanding the hazards makes it possible to identify where Directives overlap each other, and to identify additional relevant policies/developments.
2.2.2 Step 2: Common Processes and Mechanisms and other Key Requirements

Step 2 in the methodology is to identify the most important provisions in each Directive, the so-called key requirements (KR). For each Directive, including the Framework Directive (89/391/EEC), we develop a table that presents KRs and Common Processes and Mechanisms in a structured manner. These tables are presented in each Directive Report.

The Common Processes and Mechanisms (CPMs) are key obligations/requirements placed upon the employer. They provide a basis for the comparative analysis across the 24 Directives. As an example of how CPMs are used in the analytical approach, Table 2-1 lists the CPMs as defined in relation to the Framework Directive.

The CPMs can be seen against the background of the common risk management strategy underpinning all occupational health and safety of risk identification/assessment (and prevention or control/management).

Other key requirements consist of further provisions, some of which can be seen as fundamental to the intended outcome of a specific Directive. Because of their fundamental nature, these further provisions are regarded as additional key requirements and are therefore included in the KR tables as a basis of the analysis where appropriate.\(^{10}\)

\(^{10}\) In addition to these there is a third category of Directive-specific provisions, which – for the purpose of this study – are considered neither CPMs nor KRs as they do not prescribe key activities which need to be performed by undertakings in order to implement the Directives. In many instances, these provisions relate to technical aspects of the Directive (e.g. the arrangements for updating Annexes). Such provisions are not selected for quantitative analysis. However, where stakeholders consider them to be important, they are explored during interviews, thus providing an opportunity for including all provisions of the Directives in the analyses.
In order to perform a full assessment of a Directive’s relevance, effectiveness and coherence, it is essential to understand how OSH hazards, interventions and desired results are interlinked. We therefore use the intervention logic approach in order to analyse the KRs. Our initial analysis of the Directives showed that the change processes involved in the implementation of the Directives are highly complex and involve many different actors and different levels of action, which are not easily depicted in Directive-specific intervention logics. Three main levels of actors are involved – the EU, Member States and establishments – each with specific roles and actions which are interlinked and mutually influence each other. Thus, a two-pronged approach to using intervention logics was developed:

› Directive-specific intervention logics. Each of them focus on the specific change processes that the individual Directive aims to introduce, i.e. the workplace impacts, the safety and health impacts, and the broader impacts on society (each is included in the Directive reports).

› An overall ‘generic’ intervention logic representing the entire acquis of 24 Directives and reflecting the main activities, outputs, results and impacts – and their causal links (cf. Figure 2-3).

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(11) Protective measures and preventive actions are included as a separate CPM rather than as part of the risk assessment. This allows for a more detailed and focused exploration of the matter.
### Figure 2.3 OSH acquis intervention logic

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>RESULTS SHORT TERM</th>
<th>RESULTS MEDIUM TERM</th>
<th>IMPACTS</th>
<th>WIDER IMPACTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU DIRECTIVES (minimum standard)</td>
<td>Establishments implement measures</td>
<td>• Better knowledge of risks</td>
<td>Risks avoided and/or minimised Exposure reduced</td>
<td>Reduced incidence of occupational accidents, occupational diseases, work-related diseases and/or work-related health problems</td>
</tr>
<tr>
<td>National legislation</td>
<td>• Information, training and consultation of workers</td>
<td>• Better planning of measures</td>
<td>• Adequate measures</td>
<td>• More informed decision making</td>
</tr>
<tr>
<td>National legislation &amp; guidance</td>
<td>• Preventive &amp; protective services</td>
<td>• Health surveillance</td>
<td>• etc.</td>
<td></td>
</tr>
</tbody>
</table>

**SOCIAL BENEFITS**
- Individual health (well-being) of workers

**ECONOMIC BENEFITS**
- Society (saved health care costs)
- Establishments (productivity, etc.)
2.2.3 Step 3: Impacts

Many of the activities resulting from the Directives are designed to lead to workplace impacts that will serve to improve the occupational safety and health of workers. Step 3 of the methodology consists of identifying and establishing an overview of quantifiable indicators of workplace impacts and an overview of existing data, i.e. official statistics, on these impacts.

Generally there are two types of such impacts. The first relates to *discrete* events affecting the health of workers, such as occupational accidents. The second relates to *latent* health problems, such as those occurring as a result of an exposure to risks arising from work conditions. While the first type of impact is immediate, the other type of impact occurs over time, e.g. ranging from a very short to a very long time.

In terms of immediate impacts, for example, even if a Directive has successfully managed to reduce the number of occupational accidents by addressing the relevant safety hazards, it is hard to measure this impact based on a 2007-2012 analysis period if the Directive was implemented in e.g. 1992. To do this requires data on occupational accidents as far back as 1992 and such data is not necessarily available. Instead a few examples of national statistics may be given to illustrate, for instance, how fatal accidents have evolved since the beginning of 1990s. An analysis of occupational accidents across 2007-2012 showing, for example, consistently low numbers could, however provide an indication of the Directive’s continued relevance.

The same argument holds true concerning latent work-related health problems in as far as the latency period of the effect falls before the 2007-2012 analysis period.

For the above reasons, it is important to develop a good understanding of the hazards that the Directive addresses, on the one hand, and of the safety and health impacts that the Directive intends to effect on the other.

In many instances, impact and other changes are not registered or recorded. In these cases, we rely on interviews with stakeholders and their assessments of the degree to which establishments have implemented the OSH activities (12).

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(12) Hence, when little hard evidence exist concerning the implementation level of activities, the foundation for the evaluation is weaker compared to the case where much evidence exists. Nevertheless, the recording of availability of registered data provides an overview, which can be used for designing more accurate evaluations in the future.
The workplace impacts and safety and health impact are central elements of the Directive-specific intervention logics. Intervention logics for all 24 Directives have been developed. They provide answers to the three fundamental evaluation questions:

1. Impact of what? (note: a first answer to this question was provided in Step 2)
2. Impact for whom?
3. Impact on what?

In other words, the intervention logics provide the basis for answering the specific evaluation questions regarding relevance, effectiveness and coherence. As an example, a number of the KRs within the Vibration Directive require the implementation of measures to reduce risk by reducing exposure to hand-arm vibration, perhaps by reducing time working with vibrating tools or by replacing tools with high vibration emissions with ones with lower emissions. It would be possible to quantify these workplace impacts, for example by documenting tool-replacement programmes. The safety and health impact of reducing exposure is to reduce the risk of workers developing Hand-Arm Vibration Syndrome (or other vibration-related conditions).

2.2.4 Step 4: Answering the evaluation questions

The aim of Step 4 is to answer the evaluation questions of relevance, effectiveness and coherence. In line with the Directive-specific approach, for relevance and effectiveness these questions are answered (i) Directive by Directive with results presented in the Directive reports, and (ii) across the Directives. For coherence, the analysis is first made across the acquis and based on these findings, a Directive by Directive assessment is made (13).

2.2.5 Relevance

Relevance deals with assessing the extent to which a particular intervention is consistent with the needs and problems experienced by the target groups. In the case of the OSH Directives, the essential issue is therefore whether or not the Directives address the OSH risks prevalent within the EU Member States. In the context of this report, relevance is assessed against two time frames: EQR1: current relevance (2014) and EQR2: future relevance (2020).

Facts and figures

Data related to relevance is established through a combination of examining relevant statistics; drawing on the expert knowledge of subject experts; and seeking the knowledge and opinions of appropriate stakeholders. In other words, a mixture of quantitative and qualitative sources are used, relying on the knowledge of subject experts and that of national experts (including information gleaned from their desk studies and interviews), to formulate an overview of both the current and likely future relevance of the provisions of each Directive. Four topics have initially been identified which contribute to the relevance of each Directive:

- Number of Member States where the Directive is potentially relevant

(13) Note that the methodology for answering the Task 1 evaluation questions is presented in Chapter 2.3.
Proportion of EU workforce to whom the Directive is potentially relevant
Severity/Extent of risks intended to be addressed by the Directive
Degree to which the Directive reflects current working methods and available technologies and the risks associated with these.

Each of these topics are sequentially examined as part of the relevance assessment for each Directive.

Number of Member States where the Directive is potentially relevant
The first step establishes whether or not a subject addressed by a given Directive exists in each Member State (e.g. do all MSs have a fishing fleet, which is the subject of one OSH Directive, or do all MSs have workers exposed to biological agents, which is the subject of another). Clearly, if the subject of a Directive is only relevant to a minority of Member States, then it is questionable whether action at the EU level is the most appropriate source of remedial action. For the four overall types of Directives, the following approach is used:

- **General**: These Directives apply across most or all sectors and are not hazard/risk-specific so, by definition, they are relevant to all Member States without need for further analysis.

- **Hazard/risk-specific**: Usually referred to as risk-specific, the provisions of these Directives apply in part to any workplace where the hazard (e.g. physical agent) is present. Some data on this is available from surveys (e.g. EWCS, ESENER). This is used to establish the relevance of the Directive in each Member State where exposure is reported. Where such information is not available, the knowledge of subject experts is used to identify the sectors within which such exposures are most likely to occur, and business data (SBS) is used to establish the presence of those sectors within each Member State.

- **Sector-specific**: Business data (SBS) is used to establish the presence within each Member State of the sectors for which there are specific Directives.

- **Vulnerable groups**: As with the general Directives, the generality of these Directives render them relevant in all Member States with no need for further analysis.

Proportion of EU workforce to whom the Directives are potentially relevant
The second step is to seek to establish the proportion of the EU workforce, which is covered by the provisions of each Directive (14). For the four overall types of Directives, the following approach is used:

- **General**: These are applicable across all or most sectors of employment. Thus, the proportion of the EU workforce to whom the Directives are relevant is 100%. For those where specific sectors are excluded, a calculation deducting the numbers employed in those sectors from the total workforce yields the relevant proportion.

- **Hazard/risk specific**: For hazard/risk specific Directives, we build on the analysis of the Member States in step one which identified those MSs in which workers are exposed to the

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(14) A retrospective analysis (i.e. the extent to which the Directives were relevant when first introduced) was considered to be beyond the terms of reference and is not explored here.
relevant hazards covered by a given Directive (and therefore potentially at risk). From this data, estimates are calculated of the proportion of the EU workforce potentially exposed to the hazard in question and for whom the Directive is therefore relevant.

- **Sector specific:** The LFS survey data is used to provide an estimate of the number of workers employed in a specified sector and from that we can deduce the percentage of the EU workforce to whom a given Directive is relevant (15).

- **Vulnerable groups:** The three Directives relating to specific vulnerable groups (pregnant and breastfeeding workers, young people, and temporary workers) present particular challenges in determining the proportion of the EU workforce potentially at risk. For the Pregnant/breastfeeding workers Directive, to establish the proportion of the EU workforce covered by this Directive, we first determine (with input from subject specialists) which sectors could involve exposure to hazards that might pose a risk to pregnant or breastfeeding women. LFS data is then used to establish the proportion of females of child-bearing age employed within these sectors. For the Young People Directive, an estimate of the proportion of young persons (<18 years) employed within the EU, is judged to offer the best guide to the relevance of this Directive (although it has a wider relevance to those children prohibited from employment). Finally, for the Temporary workers Directive, an estimate of the proportion of temporary workers employed within the EU is considered to offer the best guide to the relevance of this Directive. Data from the EWCS detailing those in temporary or fixed-term employment is therefore used to adjust LFS employment data to provide a relevance estimate.

**Establishing exposure to hazards or the extent of safety or health consequences**

In theory, any analysis of an individual directive would explore the extent to which the workforce were exposed to the hazards addressed by the provisions of that directive and examine statistics of injuries or ill-health resulting from exposure to those hazards. An analysis broken down in this manner would support a detailed review of the relevance of each of the Directives. In reality however, any analysis is severely constrained by the limitations of the available data. For example, collated databases of accidents allow just two classes, those leading to more than three days of time lost from work and those leading to fatalities. Even within this restricted classification, restrictions on the classes of types of accident of injury often lead to limited insights into the extent to which they can be attributed to specific directives, let alone specific provisions within any directive. Similarly, workplace exposure data is often restricted to self-reports where details of the specific nature of the exposure (and any consequent risks to health or safety) are non-existent. For example, self-reported exposure to ‘chemicals’ gives no indication of the hazards which might be associated with these chemicals (if indeed they do present any hazard) or indeed whether or not these reported exposures are adequately controlled and the extent therefore of any consequent risk to health (or safety).

As a consequence, data analyses were, in effect, limited to whatever data were available. In some instances, data from periods outside the formal review period (2007 – 2012) was used where it provided the best (or often the only) relevant insight.

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(15) Where sectorial data is not directly available (e.g. extraction of minerals through drilling), the data for the larger mineral extraction sector is adjusted by using the relative proportions in the SBS database.
Although these limitations in the nature of the data available are generally acknowledged as a specific limitation where they are used in the analyses, they must be here recognised as general limitations throughout this report and the individual directive reports.

Degree to which the Directive reflects current working methods and available technologies and the risks associated with these

In respect of each individual Directive, consideration of the current working methods was primarily focussed on whether changes in work and working practices meant that the provisions of any specific directive were no longer relevant. In most cases, such factors were primarily driven by the views expressed within the NIRs and by stakeholders interviewed at the EU and MS levels. In some cases, expert knowledge was provided to interpret or expand on the comments made (or occasionally to supplement these views). These views have been summarised and reflected in discussions as to whether any directive was currently relevant and whether it was considered likely to remain relevant. In many instances however, this latter issue was refocused to ask what changes (to a directive) were considered necessary to improve its future relevance. Implicit in this would therefore be the suggestion that failing to accommodate these changes would diminish its relevance in the future.

As an example, the technology associated with display screen equipment has changed radically since the adoption of the DSE Directive in 1989. At a relatively simplistic level, this means that some workplace requirements presented in the Annex to the directive are no longer relevant, whilst other common features of such workplace, such as any input devices other than a conventional keyboard, are not addressed at all. However, such changes have also resulted in significant radical changes in the manner in which workers use such equipment, calling into question the whole concept of a static ‘workstation’ embodied in the original directive. Such changes are discussed in the specific directive.

2.2.6 Effectiveness

The seven questions on effectiveness have been categorised in three groups: 1. Impacts of Directives, 2. Costs and benefits of the Directives and 3. Fulfilment of the objectives of the Directives. This grouping is underlined by the consideration that several of the evaluation questions share the same characteristics (e.g. in terms of inputs, data collection tools or outputs) and that important links exist between the questions in terms of the output of one question feeding directly into another. These links are illustrated in Figure 2-4 below.
The following section presents the data collection activities to answer each of the evaluation questions.

**Impact of Directives: EQE1-EQE4**

The first group of questions focuses on the extent to which the Directive has had any safety and health impacts (EQE1), whether derogations and transitional periods (EQE2) have influenced the effectiveness of the Directives, and to what extent the Common Processes and Mechanisms (EQE3) and sanctions and other related enforcement activities (EQE4) have contributed to the effectiveness of the Directives. To the extent possible, the output of the evaluation questions in this group is expressed in terms of percentages of change in e.g. the levels of exposure, the occurrence of occupational accidents and occupational diseases and other related health problems that can be attributed to a given Directive \(^{(16)}\).
The overarching effectiveness question
The evaluation of the effectiveness of the Directive takes as its starting point the development of the impact indicators. The overarching effectiveness question to be assessed is: ‘To what degree has the observed development in occupational safety and health impacts been caused by the Directive?’ This question corresponds to EQE1.

Transposition, derogation and compliance
The observed safety and health impacts must be related to if and how the Directive has been transposed in the different Member States, if derogation has been granted; and whether a transitional period has been allowed. Combining these aspects – transposition, derogations and compliance – helps to establish the degree to which Member States comply with the Directives, without which the observed impact cannot reasonably be argued to be a cause of the Directive. This aspect relates to EQE2.

Workplace developments
If workplace impacts of the Directives can be quantified and measured, this information will help to support the view that the Directive has had an impact on the observed safety and health of workers. If workplace impacts cannot be quantified, interviews with experts provide insights about whether workplace impacts have indeed caused safety and health impacts. Interviews furthermore cast light on how, and to what extent, the different CPMs and KRs of the Directive have contributed to causing such impacts. The latter aspect relates to EQE3.

Development in external factors
The observed safety and health impacts must also be seen from the perspective of developments in external factors. General economic activity may, for instance, also affect the observed safety and health impacts, as may technological progress and industry transitions. Likewise, impacts may be caused by other Directives. Information on these aspects will e.g. be developed through the assessment of relevance and coherence.

The first step in analysing the effectiveness of the individual Directive is therefore to establish a link between the Directives and occupational risks, accidents, diseases and other work-related health problems, as accounted for in the available register-based and survey data.

This analysis is nuanced through interviews with EU-level OSH stakeholders and national stakeholders, who contribute in different ways:

EU stakeholders: establish to what degree implementation of the OSH Directives has contributed to the improvement of the safety and health of workers, and in that context evaluate the individual contribution of the CPMs and other KRs.

National stakeholders: address specific national particularities in more detail (e.g. the effect of derogations and transnational periods and sanctions and other related enforcement activities) and existing differences between different sizes of establishments.

During both national and EU stakeholder interviews, we ask stakeholders to make a quantitative assessment of specific evaluation questions. A simple five-point scale scoring system is applied. The table below shows an example of how the scoring system is defined for Effectiveness.
Table 2-2  Scoring system for Effectiveness parameter

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Hardly any impact at all in any of the Member States and hence level of fulfilment of the objectives is poor</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Of some little impact, effective in few Member States</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Reasonably effective - but some large gaps</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Very effective but some small gaps in some Member States</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>Highly effective in Member States</td>
</tr>
</tbody>
</table>

For each Directive, these scores are presented as the total averages of the four stakeholder groups: 1) authorities, 2) employers, 3) workers, and 4) others, respectively, as well as the total average for the specific Directive, calculated by means of the illustrated averages of these four groups. This method is chosen to ensure that each stakeholder group is equally represented in the total average, irrespective of the number of stakeholders interviewed within each stakeholder group.

Figure 2-5  Example of graphical representation of quantitative interview data

In order to get a graphical illustration representative of the OSH acquis, for this Main Report, we aggregate all averages for each stakeholder group provided by Directive into one cross-directive average by stakeholder group.

Costs and benefits: EQE5-EQE6

We analyse EQE5 and EQE6 separately in chapter 7. This chapter focus on what benefits and costs arise for society and employers as a result of fulfilling the requirements of the Directives (EQE5), and to what extent the Directives generate broader effects (EQE6). The main data sources include interviews with national and EU stakeholders and a literature review. Moreover, the
Evaluation also draws on findings from the assessment of the implementation in Member States, coherence and effectiveness.

The analysis of compliance costs followed three steps: In accordance with the SCM, we conducted a review of the CPMs and KRs to identify and classify information obligations (generating administrative costs) and other obligations (generating substantive compliance costs). Next, we sought to assess the magnitude of these obligations based on interviews with EU and national stakeholders and findings from the literature review. Finally, we triangulated findings from the different data sources supplemented with the results from the assessment of the implementation in Member States and the assessment of coherence.

The assessment of benefits builds on the effectiveness evaluation of the health effects. To estimate the monetary benefits stemming from these health impacts, we interviewed national and EU stakeholders and reviewed the literature. Broader effects and side effects was not explicitly covered in the assessment of effectiveness, and the analyses therefore draws on findings from the interviews with EU and national stakeholders and the literature review. The evaluation methodology is explained more in depth in chapter 7.

Fulfilment of objectives: EQE7

The extent to which the Directives fulfil their objectives will be analysed from two perspectives. On the one hand, the level of fulfilment of the objectives of the individual Directives and, on the other hand, the overall contribution of the acquis to achieving a level playing field.

The analysis is based on three judgement criteria:

- The effectiveness of the Directives
- Levels of compliance with the Directives
- Assessment by stakeholders

Interview data will be included in the assessment of EQE7 in accordance with the methodology of stakeholder interviews described for EQE1-4 above.

2.2.7 Coherence

Coherence is essentially about considering the extent to which the intervention logic is non-contradictory and that the intervention does not contradict other interventions with similar objectives \(^{(17)}\). The assessment of coherence considers the internal logic between the Directives as well as the external coherence between the Directives and other measures and policies at the EU-level. Two main questions are addressed under this task.

EQC1: What, if any, inconsistencies, overlaps, or synergies can be identified across and between the Directives? \(^{(18)}\)

Our methodological approach involves three activities: Identification of overlaps, Identification of inconsistencies and Final assessment.

\(^{(17)}\) E.g. EU evaluation guidelines, 2004, p. 39

\(^{(18)}\) Ref. to Glossary of terms for definitions.
First, we identify potential overlaps between Directives. This is done through the identification and comparative analysis of Common Processes and Mechanisms and Key Requirements on a pan-Directive level. Our preliminary findings are supplemented by additional analysis of the Directives also looking into definitions and clauses in the Directives which contain a ‘without prejudice to…’ reservation.

Secondly, we identify inconsistencies in three different ways:

› **Contradictory requirements.** We identify potential contradictory requirements between OSH Directives. To that end, we analyse the key requirements identified in the initial review phase for each group of Directives in order to facilitate the identification of contradictory requirements.

› **Inconsistencies in the drafting of CPMs.** We analyse the CPM provisions in each Directive for their consistency (e.g. similar structure, similar procedure and similar steps).

› **Inconsistencies in the drafting of KR.** We analyse the KR provisions in each group of Directives for their consistency (e.g. similar structure, similar procedure and similar steps).

This analysis cover all CPMs and KR for all Directives.

**EQC2: Coherence and complementarity of OSH Directives with other measures and/or policies at the European level**

In EQC2 we assess how the OSH Directives interrelate with other measures and/or policies that also cover aspects related to health and safety at work. For this purpose, we address two main questions:

› For EU policies: We assess the extent to which the objectives of the OSH Directives are coherent with objectives of other EU policies and international instruments.

› For EU legislation: A similar question as EQC1 above, only this time focusing on non-OSH EU legislation.

Our methodology for assessing coherence with EU policies is based on a desk study approach, during which we analyse and compare the objectives of OSH Directives with those of relevant policy documents and international instruments. We analyse whether other EU policies support or complement the OSH Directive objectives (consistency), whether they contradict these objectives or hinder their achievement (inconsistencies) and to what extent they might do so (inconsistent, partially inconsistent, consistent).

For each EU policy area and instrument analysed, we assign a score indicating the level of consistency according to the following scale: 1 = Inconsistent; 2 = Partly (in)consistent; 3 = Consistent.

In addition to mapping overlaps and inconsistencies in EQC1, we also map interfaces and gaps. We focus on analysis of EU OSH legislation and a limited number of targeted non-OSH legislation (32 EU legal texts) identified through desk research and with the support of the Commission. We complement our findings with information from the interviews of EU and national stakeholders.
Please refer to sections 2.4.3 and 2.4.4 for further detail on national and EU stakeholder interviews, respectively.

Results of the interviews at national and EU-level on the one hand complement the identification of non-OSH EU legal acts and, on the other, provide additional information on the evaluation of coherence between OSH and non-OSH EU legislation. Relevant information to the evaluation of coherence has been extracted from the NIRs.

2.3 Input step A: Mapping of national implementation

One major source of information for the evaluation is Input step A: Mapping of national implementation, which entails mapping the practical implementation of all 24 OSH Directives in 27 Member States. The mapping exercise provides a general overview of the transposition of the Directives in the national legal frameworks and gives an overview of how the requirements are put into practice in the Member States. The mapping results are compiled in Country Summary Reports (CSRs) for each Member State (cf. Appendix G) and reported in an aggregated form in Chapter 4 below.

In each of the 27 Member States, the mapping exercise is performed by independent national experts selected on the basis of their OSH experience. The national experts gather data in two phases. The first consists of a desk study of available data (see section 2.2). The second phase consists of interviews with relevant, national stakeholders.

2.4 Input step B: Information gathering

In addition to the legislation and Directives to be evaluated, the study relies on three key data sources: 1) Existing studies, 2) official statistics and 3) interviews. The use of each data source is described below.

2.4.1 Studies

The Commission has made numerous relevant documents available for the evaluation, the most important of which are the following:

› National implementation reports (NIRs)
› Practical implementation reports, Commission communications and other policy documents
› Other existing studies.

National implementation reports

According to provisions of the Framework Directive and 23 other Directives in the field of health and safety of workers at work, the Member States shall submit a single report to the Commission on the practical implementation of the Directives concerned every five years. The first report shall cover the period from 2007 to 2012, and the Member States are required to transmit their reports by the end of 2013 at the latest. The structure and questionnaire for these national practical implementation reports is defined in a Commission Decision (C(2011) 9200), and contains a
section with the principles and points common to all Directives concerned, and another that deals with particular aspects of each Directive, as well as a list of the Directives concerned \(^{(19)}\).

These NIRs are a very important source of information for the evaluation. The NIRs are used extensively in relation to the mapping exercise under Task 1 and are particularly useful in relation to informing on the prevailing legal framework in the Member States, the measures taken to ensure compliance (enforcement and soft measures), and the level of compliance with requirements of the Directives. The NIRs are also used extensively in the evaluation of relevance, effectiveness and coherence.

By providing data for the mapping exercise, the data of the NIRs feeds into the directive reports in the same way as other data from the mapping of national implementation of the Directives.

The interpretation of the assessment questions given by the Commission vary from country to country. This variation prevents the development of a solid comparative analysis.

Practical implementation reports, Commission communications and other policy documents

Both the Commission and the European Parliament have produced important studies and communications on OSH that will inform the study either on Directive level or on specific aspects such as costs. The Commission's practical implementation reports are also a key source of information, particularly for the assessment of the Directives. The Practical implementation reports are based on studies by independent consultants, and these contain relevant, often recent information on the practical implementation and effects of the Directives.

Other existing studies

Existing studies also include other analyses at the Directive or Member State level, or on a specific topic, e.g. costs and benefits of OSH. Particular focus is on identification of studies concerning SMEs and Microenterprises.

2.4.2 Official statistics

The review of official statistics focuses on comparing expected impacts of the Directives identified in the intervention logics with available data from EU, national or other data sources. Moreover, official statistics are important for the relevance assessment, particularly for determining the composition of the workforce and the proportion of the workforce, which are likely to be exposed to a given risk or working in a specific sector. However, the limitations of the EU data available pose a challenge for the study as we shall discuss in more detail in section 2.6 below.

Four main sources of EU data have been identified, reviewed and used in the evaluation. These four main sources are the following:

- **European Working Conditions Survey (EWCS).** Relevant data is available for 2010, 2005 and (partly) 2001/2000. EWCS has developed and widened its scope through the different
editions, and the recent edition covers the themes of employment status, working time, work organisation, learning and training, physical and psychosocial risk factors, health and safety, work-life balance, worker participation, earnings and financial security, as well as work and health. Survey respondents are both employees and the self-employed across Europe. We examine the background material for EWCS, including questionnaires to identify and assess the content of the data sources in terms of, for example, exposure at work to risk factors affecting physical and mental health, health problems caused or made worse by work, and accidents at work which are relevant, not least in relation to the individual OSH Directives.

Enterprise Survey on New and Emerging Risks (ESENER). ESENER examines how health and safety is managed in practice in European workplaces and includes a focus on management of psychosocial risks, on the drivers and barriers to action, and on how workers are involved in the management of health and safety at work. The survey respondents are primarily chosen amongst responsible managers and employee representatives from private and public-sector establishments with ten or more employees. Full data are available for 2009 only. A new, upcoming ESENER-2 survey is being published simultaneously with submission of the present report, and preliminary results are included in the evaluation where possible. The population of the ESENER-2 survey has been expanded compared to ESENER 2009 by including establishments with 4-9 employees (while ESENER 2009 only covers establishments with 10 employees or more). As the actual data source is not available, this change in survey population obstructs possibilities for trend analyses for the assessment of OSH acquis effectiveness.

European Labour Force Survey (EU-LFS) ad hoc modules on Accidents at work and other work-related health problems. EU-LFS is reportedly the largest European household survey, in general providing (quarterly and annual) data on labour participation of people aged 15 and over (including persons outside of the labour force). It covers a relatively large sample of residents in private households according to labour status, i.e. employment, unemployment or inactivity. In this context, the ad hoc modules on work-related accidents and health problems (including hazardous exposure) are primarily relevant. These aim to gather information on, for example, the volume and severity of accidents at work, the volume of health problems caused or worsened by work, the volume of exposure to risk factors affecting physical and mental health, and the types/characteristics of accidents, health problems and risk factors that occur, etc. Ad hoc modules on work-related accidents and health problems were undertaken in 1999, 2007 and 2013. The 2013 dataset was released only after the data collection and data analysis phase had been completed and after submission of Directive-specific evaluation reports. The 2013 data therefore has not been addressed as part of the present study.

European Statistics on Accidents at Work (ESAW). ESAW covers all accidents – occurring while performing working activities – that were either fatal or resulted in an absence from work of at least four calendar days. Data is available on a yearly basis, from 1993 and up to 2013, but with varying country coverage over the years. For instance, on the Eurostat website, data through 2007 is available for EU-15 Member States only. From 2008, most EU-28 data is

\(^{20}\) Exceptionally, in the 11th hour, two variables from LFS AHM 2013 ([hsw_exp4] and [hsw_pb9]) were analysed as input to the assessment of effectiveness. These are presented in section 6.2.2 Data on trends in health and safety at work in the period 2007-2012, although in the case of [hsw_pb9] differences in wording from LFS AHM 2007 to 2013 obstructs trend analyses.
available (21), although data is considerably more fragmented when the data set is broken down into individual sectors. For the present study, to the extent possible, ESAW data has been assessed from 1993 to the end of the evaluation's reference period, i.e. 2012. ESAW gathers information on what types of persons were injured, when and where (including gender, age, occupation, occupational status and economic activity of employer), as well as how and under what circumstances the accident happened, and not least information on the nature and severity of the injuries and the consequences of the accident (such as body part injured, type of injury, number of days lost). The basis for the ESAW data collection is Commission Regulation (EU) No 349/2011 of 11 April 2011 on statistics on accidents at work (22), which requires Member States to transmit such data within 18 months after the end of the reference period (year) to Eurostat. At the national level, data is collected from employers, i.e. enterprises or self-employed persons, and not directly from the employees themselves who had the accidents. ESAW data is thus register-based and not based on self-reporting/self-assessment of employees, which may be subjective.

2.4.3 Interviews – national stakeholders

Interviews with national stakeholders have been completed for all 27 Member States on the basis of the interview guide in Appendix H. In total, 540 interviews have been carried out with national stakeholders across the Member States.

National experts were asked to undertake up to 20 interviews with national stakeholders according to the following prioritisation:

› National authorities: 1-4 interviews
› Labour inspectorates: 2-4 interviews
› Workers’ representatives: 5-7 interviews
› Employers’ representatives: 5-7 interviews
› Other national stakeholders: 1-3 interviews

Compared to the above planned balance between stakeholder groups, it proved that national authorities, labour inspectorates and other national stakeholders were more readily available to be interviewed, compared to worker and employer organisations. In one case, for example, it transpired that a large trade union asked all of its members not to participate in the interviews because they are of the opinion that their own answers should suffice. This can be seen in Table 2-3.


Table 2.3 Interviews by stakeholder groups

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Methodology</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>National authorities</td>
<td>27</td>
<td>108</td>
</tr>
<tr>
<td>Labour inspectorates</td>
<td>54</td>
<td>108</td>
</tr>
<tr>
<td>Workers’ representatives</td>
<td>135</td>
<td>189</td>
</tr>
<tr>
<td>Employers’ representatives</td>
<td>135</td>
<td>189</td>
</tr>
<tr>
<td>Other national stakeholders (e.g. research institutes, academia, OSH professional bodies)</td>
<td>27</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>378</td>
<td>675</td>
</tr>
</tbody>
</table>

Source: National stakeholder interviews, national experts

Appendix D shows the number of interviews carried out at the Member State level by stakeholder group. While overall it was possible to achieve the goal of interviewing 20 stakeholders per MS, and in most cases achieve the goal of a balanced representation of stakeholder groups, it must be reiterated that 20 relevant interviews were not achievable in all cases, given the differences between MSs. For example, larger countries, such as Germany, Romania and the UK, inherently have more OSH professional experts than small Member State countries, such as Malta, Slovenia and Luxembourg.

2.4.4 Interviews - EU stakeholders

Interviews with EU-level stakeholders have been completed on the basis of the interview guide in Appendix I. Initially, we indicated that up to 70 interviews at the EU level would be carried out. Concluding the interview round, 59 interview persons were contacted for interviews, and 44 of these participated in an interview.

EU interview process

Interviews with EU stakeholders were carried out in three phases, as the interview guide for the EU stakeholder interviews underwent three revisions. In total 16 (36 %) interviews were undertaken based on version 1 or 2. Out of these 14 interview persons returned written responses to the additional questions of the final version of the interview guide. A majority of the interviewees (64 %) was thus based on the last version of the interview guide.

A number of precautions were taken during the interview rounds in order to ensure a consistently high level of qualitative data. These precautions were:

› Having 2 interviewers carry out the interview, both taking notes
› Asking the stakeholders to review the interview notes for validation purposes
› Ensuring consistency by asking stakeholders who responded to the old interview guide to provide answers to the new guide.

Stakeholder coverage

The selection of stakeholder organisations interviewed for the evaluation is based on a list of proposed organisations collated by the evaluation team combined with feedback/comments by the
Commission (DG EMPL and the ISSG) and the Advisory Committee on Safety and Health. As a result, a final list of selected stakeholder organisations was agreed upon with DG EMPL. It was \textit{inter alia} decided that interviews with other parts of the Commission, DG GROW (REACH Unit and Chemicals Unit) and DG JUST, were also essential for the evaluation, since these DGs are particularly responsible for EU legislation with an impact on OSH.

As indicated in Table 2.4 below, 44 interviews have been carried out. In some cases, multiple persons from a single organisation have been interviewed. Thus, 31 EU organisations were interviewed which include 17 employer organisations, five worker organisations, three DGs, three EU agencies and bodies, and three other OSH knowledge institutions.

\textbf{Table 2.4} EU stakeholders interviewed

<table>
<thead>
<tr>
<th>Employer organisations</th>
<th>Worker organisations</th>
<th>Representatives of the European Commission</th>
<th>EU agencies and bodies</th>
<th>Other OSH knowledge organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BusinessEurope</td>
<td>ETUI</td>
<td>DG GROW</td>
<td>SLIC</td>
<td>ISO</td>
</tr>
<tr>
<td>Eurometaux</td>
<td>EFBWW</td>
<td>DG EMPL</td>
<td>EU OSHA</td>
<td>Hamburg Advice Centre on Work &amp;</td>
</tr>
<tr>
<td>IMA-Europe</td>
<td>ETF</td>
<td>DG JUST</td>
<td>Eurofound</td>
<td>Health</td>
</tr>
<tr>
<td>FEVE</td>
<td>EFFAT</td>
<td></td>
<td></td>
<td>Modernet</td>
</tr>
<tr>
<td>UEPG</td>
<td>EPSU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euromines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEFIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIZO (SME)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFCI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOSPEEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEEMET</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOTREC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EASE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europêche</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: EU stakeholder interviews

\subsection*{2.4.5 Validation seminar}

The objective of the seminar was to consult stakeholders on preliminary findings, results and conclusions. The seminar was an important event for the evaluation, as it provided critical input to the evaluation process and served to highlight key issues of concern to a selection of OSH stakeholders and to point to possible conclusions and recommendations.

The seminar was held in Brussels on 9 December 2014 and, despite a strike affecting public transportation, 57 stakeholders managed to participate. In advance of the seminar, stakeholders had been provided with a discussion paper structured around five themes to steer the discussion.
The stakeholders attending the seminar did not represent any official views and opinions of the social partners, but provided very helpful reactions and viewpoints.

The inputs from the seminar have been used by the evaluation team as additional background knowledge from stakeholders with long OSH experience to complete conclusions and recommendations in the individual directive reports and as input for the Main Report.

## 2.5 Development of recommendations

The evaluation has been assigned the task of providing recommendations for future policy responses to the strengths and weaknesses of the practical implementation of the OSH Directives in the EU Member States. The Tender specifications present the task as a matter of suggesting changes in relation to the following issues:

- the legal provisions of the Directives;
- the practical implementation at the national level;
- enforcement strategies of national authorities;
- other accompanying measures for improving health and safety at work;
- sector specific approaches;
- and, finally, ways of improving coherence or synergies of different measures and/or policies at European level.

The recommendations provided by the evaluation are based on evidence and, to the extent possible, we seek to emphasise transparency of this evidence. However, it is necessary to clarify that for some recommendations evidence is solid, easily presented and made available to the reader. For other recommendations, the evidence is more scattered and recommendations are based on MS experience and aggregated conclusions extracted from pieces of relevant data sets. Such evidence is more challenging to present in an equally transparent manner, and while recommendations may hold equal merit as those with fully transparent evidence, as a consequence such recommendations will be provided with due precaution.

This issue is linked to the fact that, from the outset, we acknowledge that many of the study findings will be based on both incomplete information and on a combination of input from several different sources. Hence, it is important task to emphasize that some decisions are bound to be made without the same degree of solid evidence and thus with some uncertainty. Stakeholders are encouraged not to spend too much energy discussing whether the ‘number is 1 or 2’, but to accept the evidence that is presented.

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(23) Theme 1: Do the Directives work as intended? Theme 2: How do we manage the major ongoing risks of MSDs and Psychosocial risks? Theme 3: Maintaining the relevance of the Directives. Theme 4: How do we best manage chemical risks (including nanoparticles)? Theme 5: Challenges in implementation of OSH legislation - enforcement and SMEs.
2.6 Limitations of the methodology and data availability

This section presents several limitations of the methodology that have been managed during the evaluation process including, foremost, issues related to the quality and availability of quantitative data and limitations concerning the interview-based qualitative data.

2.6.1 Quantitative data

Quantitative data relating to exposure to the hazards covered by each Directive as well as data on health impacts (occupational diseases) is only available to a limited extent, and the data sets which are available have shortcomings. In particular, there is a lack of EU-wide data on occupational diseases and national data is fragmented and difficult to compare due to differing systems for recognition of occupational diseases in the Member States. However, for each Directive, sources of data relating the safety or health risks covered are explored both at the EU level and at the national level, to provide as comprehensive a picture as possible.

As described above, the evaluation primarily uses the following four different types of official quantitative EU data: European Working Conditions Survey (EWCS), European Survey on New and Emerging Risks (ESENER), Labour Force Survey (LFS) ad hoc modules on accidents at work and work-related health problems, and European Statistics on Accidents at Work (ESAW). These datasets are all limited by factors (for example, level of sector detail, lack of comparability across years, only focus on selected groups of respondents, etc.), which we take into consideration when using the data in the evaluation. An overview of key limitations to each EU data source is provided below.

European Working Conditions Survey (EWCS)

The relevance and limitations of EWCS with respect to evaluating the effectiveness of the Directives are summarised as follows:

Table 2-5  Overview and relevance of EWCS

<table>
<thead>
<tr>
<th>Years</th>
<th>Size</th>
<th>Sectors</th>
<th>Member States</th>
<th>Relevance</th>
<th>Remarks and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990/91</td>
<td>12,500</td>
<td>All except agriculture</td>
<td>EC-12</td>
<td>Accident severity: sick leave (days) attributable to work accidents</td>
<td>High level of occupational detail (4-digit ISCO codes)</td>
</tr>
<tr>
<td>1996</td>
<td>15,800</td>
<td>and fisheries</td>
<td>EU-15</td>
<td>Exposure and severity of exposure: physical health</td>
<td>Medium level of sector detail (2-digit NACE codes)</td>
</tr>
<tr>
<td>2000/01</td>
<td>33,000</td>
<td></td>
<td>EU-15 +</td>
<td></td>
<td>Differences in coverage of questions between surveys in different</td>
</tr>
<tr>
<td>2005</td>
<td>30,000</td>
<td></td>
<td>EU-27 +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>44,000</td>
<td></td>
<td>EU-27 +</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: + includes a number of other countries, effectively making it EU-27 (in 2001) and EU-28 (in both 2005 and 2011). Relevance, remarks and limitations based on 2010 edition.

Survey respondents are both employees and the self-employed across Europe. Direct comparability of data over time is often limited due to questionnaires changing and developing. A
data guide is available to identify critical areas where trends cannot be established. It should also be noted that data are self-reported and therefore caution is required in making cross-country comparisons as, for example, people’s assessment of their health is subjective and can be affected by their social and cultural backgrounds within and across Member States.

European Survey on New and Emerging Risks (ESENER)

ESENER data is only available on a 1-digit NACE code level, which makes the sector perspective highly aggregated. For example, manufacturing is treated as a whole, although health and safety hazards are very likely to differ between the different manufacturing sectors; not only in magnitude, but also in terms of specific risks. This makes it difficult to use ESENER data for several of the OSH Directives. Without further disaggregation, these differences cannot be captured by the data. Also, ESENER does not cover agriculture and fisheries.

It is also important to stress that ESENER 2009 only covers establishments with 10 or more employees. It is therefore not possible to obtain insights into accidents and other health and safety related issues in smaller establishments below 10 employees, which in several countries represent the large majority of establishments.

Furthermore, ESENER is addressed at management and employee representatives for safety and health, respectively, who might give different responses than would have been provided by workers. While these perspectives also provide added value, they require two overall reservations to be made when assessing ESENER findings. In the case of responses provided by management, this might raise questions of objectivity and some degree of bias. In the case of responses from employee representatives, this data (e.g. on the level of information for workers) inherently excludes establishments without safety and health employee representation, which might result in more OSH favourable findings than would have been reached with a survey population including establishments without employee representation.

The full 2013 ESENER II data set has not yet been published. We have gained access to a report on some selected advance data, which is analysed and incorporated into this Main Report – not the actual data set for 2013. It is important to note that the 2013 survey covers establishments down to five or more employees, which makes it incomparable with ESENER 2009, until release of the full ESENER II dataset.

Figure 2-6 Overview and relevance of ESENER

<table>
<thead>
<tr>
<th>Years</th>
<th>Size</th>
<th>Sectors</th>
<th>Member States</th>
<th>Relevance</th>
<th>Remarks and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009,</td>
<td>36,000</td>
<td>All except agriculture, forestry and fishing</td>
<td>EU-28, Norway, Turkey, Switzerland</td>
<td>Accidents: degree of concerns</td>
<td>Low level of sector detail (only available at 1-digit NACE code)</td>
</tr>
<tr>
<td>2013</td>
<td>interview</td>
<td></td>
<td></td>
<td>Exposure: degree of concerns with relevance to both mental and physical health</td>
<td>Low level of accident/exposure detail</td>
</tr>
<tr>
<td></td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td>2013 data not yet available</td>
</tr>
</tbody>
</table>
Labour Force Survey Ad Hoc Module (LFS AHM)

For the LFS ad hoc modules on work-related accidents and health problems, strict comparability of data over time is sometimes limited due to questionnaires changing and developing. The recently published 2013 data and 2007 data can be compared to a large extent, though some issues remain. It should also be noted that data is self-reported.

Figure 2-7 Overview and relevance of LFS

<table>
<thead>
<tr>
<th>Years</th>
<th>Size</th>
<th>Sectors</th>
<th>Member States</th>
<th>Relevance</th>
<th>Remarks and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Number of households unknown</td>
<td>All</td>
<td>EU-12</td>
<td>Accidents and severity</td>
<td>Low level of sector detail (only available at 1-digit NACE code)</td>
</tr>
<tr>
<td>2007</td>
<td>EU-27</td>
<td></td>
<td></td>
<td>Illnesses and severity</td>
<td>Low level of accident/exposure detail</td>
</tr>
<tr>
<td>2013</td>
<td>EU-28</td>
<td></td>
<td></td>
<td>Exposure (both mental and physical health)</td>
<td>2013 data has become available (at 1-digit NACE level or NACE groupings) after the closing of the primary data collection process.</td>
</tr>
</tbody>
</table>

The European Statistics on Accidents at Work (ESAW)

The basis for ESAW data is an obligation for Member State authorities to collect and report information on work-related accidents suffered by their workers. Within Member States, data is collected from employers, i.e. not reported directly by the employees themselves who had the accidents. This register-based data may in some cases be influenced by underreporting. Furthermore, data on occupational diseases are not included in ESAW.

Data on occupational diseases was collected before within the context of the European Occupational Diseases Statistics (EODS), yet data collection was stopped in 2009 due to problems of reliability and comparability of data between Member States. Currently, the Commission is working towards a simplified EODS data collection. Whether such a simplified data collection will be of sufficient quality and continued will be assessed in a few years.

(24) As specified by Commission Regulation (EU) No 349/2011 of 11 April 2011 on statistics on accidents at work which requires Member States to transmit such data within 18 months after the end of the reference period (year) to Eurostat.

(25) There are also other limitations to this data as previously described in e.g. the revised inception report, section 6.1.3.

ESAW data has been assessed from the earliest data sets in 1993 up until the end of the evaluation reference period, which runs from 2007-2012. Yet, as data comparability from 2007 using NACE1 classifications to 2008 using NACE2 classification sometimes constitutes a challenge, graphs and figures often illustrate data from 2008 to 2012. New variables have been added to the most recent ESAW data (phase 3 variables). However, as these variables are only available for data outside the scope of the evaluation, such newly added variables have not been assessed.

**Figure 2-8 Overview and relevance of ESAW**

<table>
<thead>
<tr>
<th>Years</th>
<th>Size</th>
<th>Sectors</th>
<th>Member States</th>
<th>Relevance</th>
<th>Remarks and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-</td>
<td>N.a.</td>
<td>All</td>
<td>EU-15</td>
<td>Accidents and severity (including fatal)</td>
<td>Medium level of sector detail (2-digit NACE code)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EU-27</td>
<td></td>
<td>High level of occupational detail (4-digit ISCO code)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EU-28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.6.2 Interview data

In the following section, we present the challenges and limitations faced during this evaluation in relation to the collection of interview data. Each challenge is followed by the mitigation performed by the evaluation team in response.

- Obtaining an equal number of interviews of EU-level worker and employer organisations proved to be difficult: fewer worker than employer organisations exist at the EU level, and some of the interviewed worker organisations declined during first contact, and referred to ETUI.

  *Mitigation: The evaluation team has been sensitive not to let the views put forward by the different social partners be dependent on the number of interviews undertaken, i.e. worker organisation and employer organisation views/comments have been analysed following the content of the arguments and not the number of interviews undertaken. Furthermore, when calculating average scores of interview data (provided in the form of scores from 1-5), the four stakeholder groups (authorities, employers, workers and others) have been weighed equally, irrespective of the number of respondents within each group.*

- Depth of knowledge: When interviewing EU stakeholders, it turned out to be important to keep in mind that some of the interviewees, particularly the worker organisations, represent large organisations covering heterogeneous industries and a variety of different occupational risks and directives. As a result and unsurprisingly, the interviewees mainly provided information on those Directives they had knowledge of. Several interviewees also pointed out that they are not so close to the workplace, a circumstance which made it difficult for them to go into detail on actual impacts at the workplace. Finally, the level of Directive-specific knowledge among interviewees varied. While some interviewees had specialised knowledge about the content, key requirements and derogations, others had more general knowledge about OSH legislation (e.g. about the CPMs such as risk assessment etc.).
Mitigation: Observations about the knowledge of stakeholders are not particular to this evaluation, but common to most evaluation processes. Most stakeholders do not have a full overview of the evaluation objective or all of the evaluation questions. Their point of reference is usually their own sector or speciality, and they use this to provide as elaborate answers as is possible, also on issues outside their immediate speciality. Fortunately, different stakeholders possess different levels of knowledge. Triangulating these different levels of knowledge is the mechanism that the evaluation team has used when trying to establish an acceptable level of evidence for findings and conclusions. The evaluation team has collected data from several different sources, including interview-based data per Directive. For those Directives where interview data has been less detailed, other data sources have been identified to ensure as much detail as is practically possible, taking into consideration the time and the resources available for data collection for each of the 24 directives.

Narrow/specific Directives: in the case of some sector-specific Directives, only a few stakeholders proved relevant to interview. For example, in the case of the fishing sector directives, it was not possible to obtain broader coverage, as only one of the relevant organisations agreed to participate. In other cases, the interviews focused narrowly on the sector-specific Directive, providing strong sector-based knowledge and evidence on the evaluation question.

Mitigation: The evaluation team has been aware of the need to collect data from a number of different data sources, including interviews. On those sector-based Directives where only a few stakeholders have been identified and interviewed, we have made extra efforts in searching for additional data and found, for example, research-based data from Member States.

Coverage of SMEs: While a number of sector-based organisations commented on SME issues, and the main stakeholder on the area, UEAPME, participated in interviews, it was not possible to find a relevant and equivalent worker organisation for SMEs.

Mitigation: The evaluation team has discussed, to the extent possible, the SME issue when interviewing worker organisations and received views/comments on SMEs as well. This issue was specifically covered at the Validation seminar.

In those MSs where few stakeholders were identified or interviewed during the primary interview phase, an additional effort was made to increase the number of interviews and obtain a better balanced stakeholder representation. This was the case for: CZ, HU, IE, PL and UK. In some MSs, it was not possible to reach 20 interviews due to the following: a lack of relevant interviewees, lack of cooperation by stakeholders, very centralised OSH systems (and thus few stakeholders), relatively small size of the Member State, and conflicts between interview periods and holiday seasons. Some of these challenges led to cases where the difference between contacted stakeholders and stakeholder who agreed to participate is high. This is the case for AT, EE, FR, IR, MT, PL, SE and SI.

2.6.3 Coverage of Directives

While we have done our utmost to ensure good coverage of all Directives, the level of detail and information provided in the interviews does vary from Directive to Directive. It is mainly in those
cases where problems or shortcomings have been identified, and research has been carried out by the stakeholder organisations, that highly detailed information has been obtained for the evaluation.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES
3 Labour market overview

The purpose of the labour market overview is to present recent trends within the EU labour markets. This provides background information for assessing whether the relevance of the Directives has changed over time, as well as for understanding the labour market conditions in which the 24 OSH Directives have been implemented.

Although the EU Member States have experienced somewhat different developments in the period 1997 to 2013 (hereunder during the period of economic crisis), Figure 3-1 shows that for the EU on average, the OSH Directives have been implemented in a period of employment growth – that is until the onset of the economic crisis in 2008.

Figure 3-1 Employment and population aged 15-64 in EU-27, 1997-2013, million people

Source: Eurostat, LFS and population data.
Note: Left axis: employment; right axis: population.

The Figure furthermore shows that this employment growth has largely been caused by similar population growth rates for the EU-27 population aged 15 to 64. This also implies that the participation and employment rates have been almost constant in the period up to 2008, although slightly rising for the female part of the workforce.
Since 2008, EU-27 employment has been on a decline. The Figure shows that, since 2009, the population as a whole has followed a highly similar trend, although at a lower rate than that of employment. Hence, the employment rate has fallen alongside increases in the unemployment rate (see Table 3-1).

Furthermore, Table 3-1 shows that employment growth has mainly occurred among the female workforce and older workers, e.g. the employment rate for the female workforce aged 55-64 has continued its increase between 2000 and 2008 into the economic crisis years. A similar but less pronounced development has occurred for the corresponding older male workforce.

ESENER-2 (EU-OSHA, 2015) reveals that these EU figures vary from MS to MS. While 21 % of surveyed EU-28 establishments indicate that employees aged over 55 account for more than a quarter of their workforce, the highest shares are found in Sweden (36 %), Latvia (32 %) and Estonia (30 %) as opposed to Malta (9 %), Luxembourg (9 %) and Greece (10 %).

Table 3-1 also reiterates the often-mentioned claim that the economic crisis has been particularly harsh on younger men. As shown, the unemployment rate for young men has increased sharply since 2008 with a correspondingly drastic fall in the employment rate.

Table 3-1  Employment and unemployment rates by sex and age, EU-27 average (%)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment rates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24</td>
<td>40.8</td>
<td>40.3</td>
<td>34.3</td>
</tr>
<tr>
<td>25-54</td>
<td>85.6</td>
<td>86.8</td>
<td>82.6</td>
</tr>
<tr>
<td>55-64</td>
<td>47.1</td>
<td>54.9</td>
<td>57.7</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24</td>
<td>34.1</td>
<td>34.4</td>
<td>30.6</td>
</tr>
<tr>
<td>25-54</td>
<td>66.3</td>
<td>72.1</td>
<td>71.2</td>
</tr>
<tr>
<td>55-64</td>
<td>27.4</td>
<td>36.8</td>
<td>43.4</td>
</tr>
<tr>
<td><strong>Unemployment rates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24</td>
<td>16.7</td>
<td>15.8</td>
<td>24.0</td>
</tr>
<tr>
<td>25-74</td>
<td>6.7</td>
<td>5.5</td>
<td>9.3</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24</td>
<td>18.6</td>
<td>15.7</td>
<td>22.6</td>
</tr>
<tr>
<td>25-74</td>
<td>8.9</td>
<td>6.5</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Source: EUROSTAT, LFS.

The EU labour market has, however, not just been affected by the recent crisis, but also from many years of structural change, with a shift away from primary sectors such as agriculture, forestry, fishing and mining, and away from secondary sectors, such as the manufacturing sectors, towards the tertiary – i.e. service – sectors.

Table 3-2 below shows that this trend has continued into this century, where 10 % of manufacturing jobs have disappeared between 2000 and 2013 – amounting to almost four million jobs, and 19 %, or more than two million jobs, have been lost in agriculture, forestry and fishing. At the same time, there has been a positive contribution to overall employment growth from many new jobs within
human health and social work, and within the professional and scientific sectors – each with a net-increase in the number of jobs of above six million during the 13 years. Other service sectors with job growth of above three million are wholesale and retail sales, administrative and support services, and education.

Table 3-2  Number of employed in EU-27 by NACE groups (1000 persons)

<table>
<thead>
<tr>
<th>NACE group</th>
<th>2000</th>
<th>2013</th>
<th>2000-13 absolute change</th>
<th>2000-13 percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agriculture, forestry and fishing</td>
<td>11589</td>
<td>9415</td>
<td>-2173</td>
<td>-18.8%</td>
</tr>
<tr>
<td>B Mining and quarrying</td>
<td>871</td>
<td>833</td>
<td>-38</td>
<td>-4.4%</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>36568</td>
<td>32847</td>
<td>-3720</td>
<td>-10.2%</td>
</tr>
<tr>
<td>D Electricity, gas etc.</td>
<td>1388</td>
<td>1608</td>
<td>221</td>
<td>15.9%</td>
</tr>
<tr>
<td>E Water supply, sewerage etc.</td>
<td>1194</td>
<td>1619</td>
<td>425</td>
<td>35.6%</td>
</tr>
<tr>
<td>F Construction</td>
<td>14088</td>
<td>14707</td>
<td>619</td>
<td>4.4%</td>
</tr>
<tr>
<td>G Wholesale and retail trade</td>
<td>26477</td>
<td>29915</td>
<td>3439</td>
<td>13.0%</td>
</tr>
<tr>
<td>H Transportation and storage</td>
<td>10123</td>
<td>10881</td>
<td>758</td>
<td>7.5%</td>
</tr>
<tr>
<td>I Accommodation and food service</td>
<td>7126</td>
<td>9473</td>
<td>2347</td>
<td>32.9%</td>
</tr>
<tr>
<td>J Information and communication</td>
<td>4415</td>
<td>6166</td>
<td>1751</td>
<td>39.7%</td>
</tr>
<tr>
<td>K Financial and insurance activities</td>
<td>5784</td>
<td>6382</td>
<td>597</td>
<td>10.3%</td>
</tr>
<tr>
<td>L Real estate activities</td>
<td>1386</td>
<td>1681</td>
<td>295</td>
<td>21.3%</td>
</tr>
<tr>
<td>M Professional, scientific etc.</td>
<td>4897</td>
<td>11030</td>
<td>6132</td>
<td>125.2%</td>
</tr>
<tr>
<td>N Administrative and support service</td>
<td>4626</td>
<td>8578</td>
<td>3951</td>
<td>85.4%</td>
</tr>
<tr>
<td>O Public administration, defence etc.</td>
<td>13562</td>
<td>14774</td>
<td>1212</td>
<td>8.9%</td>
</tr>
<tr>
<td>P Education</td>
<td>12266</td>
<td>15757</td>
<td>3491</td>
<td>28.5%</td>
</tr>
<tr>
<td>Q Human health and social work</td>
<td>16361</td>
<td>22623</td>
<td>6262</td>
<td>38.3%</td>
</tr>
<tr>
<td>R Arts, entertainment and recreation</td>
<td>3300</td>
<td>3399</td>
<td>99</td>
<td>3.0%</td>
</tr>
<tr>
<td>S Other service activities</td>
<td>4655</td>
<td>5223</td>
<td>568</td>
<td>12.2%</td>
</tr>
<tr>
<td>T Activities of households</td>
<td>1692</td>
<td>2498</td>
<td>806</td>
<td>47.7%</td>
</tr>
<tr>
<td>U Extraterritorial organisations etc.</td>
<td>157</td>
<td>188</td>
<td>31</td>
<td>19.7%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>182525</strong></td>
<td><strong>209597</strong></td>
<td><strong>27072</strong></td>
<td><strong>14.8%</strong></td>
</tr>
</tbody>
</table>

Source: EUROSTAT, LFS.

This structural change implies that the number of occupational injuries is likely to fall within the declining traditional sectors that are already considerably addressed by the OSH acquis. On the other hand, they are likely to increase in the services sector, where emerging risks such as psychosocial risks are also most prevalent. EU-OSHA (2014a) emphasises in this context the growth in the female-dominated sectors, such as human health and social work, education, and the retail sector, and EU-OSHA (2014c) highlights the challenges facing the health and social care sector, including shortages of skilled and experienced professionals, an aging workforce, increased use of technology requiring new skills and the introduction of new care pathways to tackle multiple chronic conditions.

Another emerging type of jobs is that of green jobs. EU-OSHA (2014d) examines the electricity sector and concludes that the greening of the electricity sector may involve a decentralisation of processes and workplaces into smaller, dispersed units and microenterprises, possibly with lower OSH awareness and culture, and fewer resources for OSH. It may involve new materials, where the risks are still unknown, e.g. nanomaterials in insulation material, new composites in wind turbine blade manufacture, a range of materials such as graphene in batteries, and toxic chemicals
in solar panels. Furthermore, there may be conflicts between green and OSH, where measures taken to protect the environment may adversely affect OSH, and a rapid progress in green innovation could mean that OSH gets left behind.

The above-mentioned structural changes and resulting occupational safety and health changes have implications for the present evaluation of the 24 OSH Directives. Table 3-3 and Table 3-4 below show how workforce development affects the number of workers covered by each of 24 OSH Directives.

The workforce coverage figures for each Directive provided in the two tables are based on the evaluation team's OSH experts' assessment of which economic sectors (using the NACE classification, two-digit level) fall under the scope of the provisions of the different Directives. In some cases, a potentially relevant economic sub-sector has not been included if the proportion of covered workers was too small to have any practical effect on the total employment count of a given directive. On the other hand, an economic sub-sector is included even if a small proportion of the workforce may not in fact fall under the scope of the Directive(s). It is assumed that any over/under-counting will, at least to some extent, be compensated for by the in/exclusion of workers from other sectors or sub-sectors. Therefore, the estimates for the general Directives and the sector-specific Directives may be considered fully or nearly accurate, while such sector distinctions are less precise in the context of the hazard-specific Directives as several hazards do not easily lend themselves to sector distinctions.

Once the relevant sectors and sub-sectors for each Directive had been identified, employment data were extracted for the EU-27 from the Eurostat LFS database for the sectors and sub-sectors in question. Proportions of the total workforce (ref. Table 3-4) were then calculated based on LFS 2000 and LFS 2013 figures applying an age range of 15-64 years in accordance with the Eurostat recommendations. This allows for a comparative analysis to assess the workforce coverage trends for each directive.

Since the type-of-worker Directives are not directly linked to economic sectors, the workforce coverage of those Directives has been calculated by means of a different methodology: For the Temporary workers Directive, we have applied the Eurostat LFS data for temporary employment, and for the Young People Directive, we have applied the Eurostat LFS data for employment of people at the age of 15 to 19. The Young People Directive workforce coverage is therefore too high, seeing as the Directive only covers workers under the age of 18.

Finally, for the Pregnant/breastfeeding workers Directive, since there are no official data on the number of pregnant or breastfeeding women at work, an estimate has been calculated by establishing the number of births within one year and the assumption that 55% of those women giving birth are in employment, using the employment rate of women in the age group 15 to 39.

As shown in Table 3-3, the workforce coverage of the general Directives has, not surprisingly, followed that of the overall employment development. This is fully the case for the Framework Directive, the Work Equipment Directive, and OSH signs Directive, which all cover the whole of the labour market.

As seen in the workforce coverage of the type-of-worker Directives, the number of temporary workers is increasing at a slightly higher pace than that of employment as a whole. In turn, during the examined period from 2000 to 2003, there has been a drastic fall in the employment of young
workers, which corresponds to the development in employment rates showcasing an aging workforce (ref. Table 3-1 above).

The coverage of the sector-specific Directives has not changed much between 2000 and 2013, with the exception of a decline in the employment of the EU fisheries sector.

Finally, the development of the coverage of the hazard-specific Directives differs somewhat, with significant increases for the EMF Directive and the DSE Directive (although their relevance may have declined for other reasons), while there has been significant decreases for the AOR Directive and the Noise Directive.
### Table 3-3  Number of employed covered by OSH Directives in EU-27 (1000 persons)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Directives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Framework Directive 89/391/EEC</td>
<td>182525</td>
<td>209597</td>
<td>27072</td>
<td>14.8 %</td>
</tr>
<tr>
<td>Workplace Directive 89/654/EEC</td>
<td>145854</td>
<td>173760</td>
<td>27906</td>
<td>19.1 %</td>
</tr>
<tr>
<td>Work Equipment Directive 2009/104/EC</td>
<td>182525</td>
<td>209597</td>
<td>27072</td>
<td>14.8 %</td>
</tr>
<tr>
<td>Use of PPE Directive 89/656/EEC</td>
<td>77929</td>
<td>75262</td>
<td>-2667</td>
<td>-3.4 %</td>
</tr>
<tr>
<td>OSH signs Directive 92/58/EEC</td>
<td>182525</td>
<td>209597</td>
<td>27072</td>
<td>14.8 %</td>
</tr>
<tr>
<td><strong>Type-of-worker Directives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary workers Directive 91/383/EEC</td>
<td>20578</td>
<td>24424</td>
<td>3847</td>
<td>18.7 %</td>
</tr>
<tr>
<td>Pregnant/breastfeeding workers Directive 92/85/EEC</td>
<td>30672</td>
<td>28690</td>
<td>1982</td>
<td>-6.5 %</td>
</tr>
<tr>
<td>Young People Directive 94/33/EC</td>
<td>6009</td>
<td>3931</td>
<td>-2078</td>
<td>-34.6 %</td>
</tr>
<tr>
<td><strong>Sector-specific Directives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Directive 92/57/EEC</td>
<td>14088</td>
<td>14707</td>
<td>619</td>
<td>4.4 %</td>
</tr>
<tr>
<td>Mines and Quarries Directive 92/104/EEC</td>
<td>776</td>
<td>737</td>
<td>-39</td>
<td>-5.0 %</td>
</tr>
<tr>
<td>Drilling Directive 92/91/EEC</td>
<td>95</td>
<td>96</td>
<td>1</td>
<td>0.7 %</td>
</tr>
<tr>
<td>Medical treatment on board vessels Directive 92/29/EEC</td>
<td>295</td>
<td>298</td>
<td>3</td>
<td>1.0 %</td>
</tr>
<tr>
<td>Fishing vessels Directive 93/103/EC</td>
<td>223</td>
<td>153</td>
<td>-70</td>
<td>-31.4 %</td>
</tr>
<tr>
<td><strong>Hazard-specific Directives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration Directive 2002/44/EC</td>
<td>50850</td>
<td>51973</td>
<td>1123</td>
<td>2.2 %</td>
</tr>
<tr>
<td>Noise Directive 2003/10/EC</td>
<td>56008</td>
<td>53560</td>
<td>-2448</td>
<td>-4.4 %</td>
</tr>
<tr>
<td>EMF Directive 2004/40/EC</td>
<td>17904</td>
<td>20420</td>
<td>2515</td>
<td>14.0 %</td>
</tr>
<tr>
<td>AOR Directive 2006/25/EC</td>
<td>2965</td>
<td>2426</td>
<td>-539</td>
<td>-18.2 %</td>
</tr>
<tr>
<td>ATEX Directive 1999/92/EC</td>
<td>12865</td>
<td>13057</td>
<td>192</td>
<td>1.5 %</td>
</tr>
<tr>
<td>CMD Directive 2004/37/EC</td>
<td>24775</td>
<td>25035</td>
<td>260</td>
<td>1.0 %</td>
</tr>
<tr>
<td>Chemical agent Directive 98/24/EC</td>
<td>92182</td>
<td>94534</td>
<td>2352</td>
<td>2.6 %</td>
</tr>
<tr>
<td>Asbestos Directive 2009/148/EC</td>
<td>14088</td>
<td>14707</td>
<td>619</td>
<td>4.4 %</td>
</tr>
<tr>
<td>Biological agent Directive 2000/54/EC</td>
<td>38634</td>
<td>41537</td>
<td>2903</td>
<td>7.5 %</td>
</tr>
<tr>
<td>Manual handling Directive 90/269/EEC</td>
<td>109423</td>
<td>111299</td>
<td>1876</td>
<td>1.7 %</td>
</tr>
<tr>
<td>DSE Directive 90/270/EEC</td>
<td>32906</td>
<td>44886</td>
<td>11980</td>
<td>36.4 %</td>
</tr>
</tbody>
</table>

Source: EUROSTAT, LFS, and evaluation team.

Note: (1) Estimate has been calculated by establishing the number of births within one year and the assumption that 55% of those women giving birth are in employment using the employment rate of women in the age group 15 to 39.

In comparison to Table 3-3, containing the directives' workforce coverage in absolute numbers, Table 3-4 below shows the workforce coverage of each directive as a proportion of the total workforce. This allows for an analysis of the development of the coverage of each directive in relation to the total workforce, which feeds into the assessment of the directives' increasing or decreasing relevance (in terms of coverage).

The general Directives cover the large majority of the workforce, which for the sake of simplicity is listed as 100%. This fact leads to the assumption, or initial hypothesis, that the general Directives remain as relevant in 2013 as they were in 2000. In extension, provided that the directives have been well-implemented, designed in a manner that addresses relevant risks etc., we may expect...
that they contribute to some extent to the improvement of working conditions and consequently a reduction of work-related accidents and ill health in establishments in the EU-27.

Table 3-4  Proportion of employed persons covered by OSH Directives in EU-27 (1000 persons)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Directives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Framework Directive 89/391/EEC</td>
<td>100 %</td>
<td>100 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td>Workplace Directive 89/654/EEC</td>
<td>79.9 %</td>
<td>82.9 %</td>
<td>3.0pp</td>
</tr>
<tr>
<td>Work Equipment Directive 2009/104/EC</td>
<td>100 %</td>
<td>100 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td>Use of PPE Directive 89/656/EEC</td>
<td>42.7 %</td>
<td>35.9 %</td>
<td>-6.8pp</td>
</tr>
<tr>
<td>OSH signs Directive 92/58/EEC</td>
<td>100 %</td>
<td>100 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td><strong>Type-of-worker Directives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary workers Directive 91/383/EEC</td>
<td>11.3 %</td>
<td>11.7 %</td>
<td>0.4pp</td>
</tr>
<tr>
<td>Pregnant/breastfeeding workers Directive 92/85/EEC</td>
<td>16.8 %</td>
<td>13.7 %</td>
<td>-3.1pp</td>
</tr>
<tr>
<td>Young People Directive 94/33/EC</td>
<td>3.3 %</td>
<td>1.9 %</td>
<td>-1.4pp</td>
</tr>
<tr>
<td><strong>Sector-specific Directives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Directive 92/57/EEC</td>
<td>7.7 %</td>
<td>7.0 %</td>
<td>-0.7pp</td>
</tr>
<tr>
<td>Mines and Quarries Directive 92/104/EEC</td>
<td>0.4 %</td>
<td>0.4 %</td>
<td>-0.1pp</td>
</tr>
<tr>
<td>Drilling Directive 92/91/EEC</td>
<td>0.1 %</td>
<td>0.0 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td>Medical treatment on board vessels Directive 92/29/EEC</td>
<td>0.2 %</td>
<td>0.1 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td>Fishing vessels Directive 93/103/EC</td>
<td>0.1 %</td>
<td>0.1 %</td>
<td>0.0pp</td>
</tr>
<tr>
<td><strong>Hazard-specific Directives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration Directive 2002/44/EC</td>
<td>27.9 %</td>
<td>24.8 %</td>
<td>-3.1pp</td>
</tr>
<tr>
<td>Noise Directive 2003/10/EC</td>
<td>30.7 %</td>
<td>25.6 %</td>
<td>-5.1pp</td>
</tr>
<tr>
<td>EMF Directive 2004/40/EC</td>
<td>9.8 %</td>
<td>9.7 %</td>
<td>-0.1pp</td>
</tr>
<tr>
<td>AOR Directive 2006/25/EC</td>
<td>1.6 %</td>
<td>1.2 %</td>
<td>-0.5pp</td>
</tr>
<tr>
<td>ATEX Directive 1999/92/EC</td>
<td>7.0 %</td>
<td>6.2 %</td>
<td>-0.8pp</td>
</tr>
<tr>
<td>CMD Directive 2004/37/EC</td>
<td>13.6 %</td>
<td>11.9 %</td>
<td>-1.6pp</td>
</tr>
<tr>
<td>Chemical agent Directive 98/24/EC</td>
<td>50.5 %</td>
<td>45.1 %</td>
<td>-5.4pp</td>
</tr>
<tr>
<td>Asbestos Directive 2009/148/EC</td>
<td>7.7 %</td>
<td>7.0 %</td>
<td>-0.7pp</td>
</tr>
<tr>
<td>Biological agent Directive 2000/54/EC</td>
<td>21.2 %</td>
<td>19.8 %</td>
<td>-1.3pp</td>
</tr>
<tr>
<td>Manual handling Directive 90/269/EEC</td>
<td>59.9 %</td>
<td>53.1 %</td>
<td>-6.8pp</td>
</tr>
<tr>
<td>DSE Directive 90/270/EEC</td>
<td>18.0 %</td>
<td>21.4 %</td>
<td>3.4pp</td>
</tr>
</tbody>
</table>

Source: EUROSTAT, LFS, and evaluation team.
Note: (1) The Directive, in prohibiting child labour, is also relevant for all young people under 15 who are not in employment, amounting to a further 15.4 % of the EU population.

As the table illustrates, for four directives, the employment trends and structural changes to the market have caused a decline in workforce coverage of between 5.4 and 6.8 percentage points. All four directives (i.e. the Use of PPE Directive, Noise Directive, Chemical Agents Directive and the Manual Handling Directive) had a workforce coverage of more than 30 % in 2000, and therefore remain amongst the directives with the widest coverage.

Contrarily, four out of the five sector-specific directives have a very small but relatively stable workforce coverage of less than 0.5 % of the workforce.
Finally, it should be highlighted that the hazard-specific Directives differ considerably with respect to workforce coverage. However, all apart from the DSE Directive have a smaller relative coverage in 2013 than in 2000.

Due to limitations associated with the sector-approach to the estimation of workforce coverage for each directive (described above), the estimates for the general Directives and the sector-specific Directives may be considered fully or nearly accurate, while such sector distinctions are less precise in the context of the hazard-specific Directives as several hazards do not easily lend themselves to sector distinctions. Yet, the sector approach has the benefit of being replicable for two different years (2000 and 2013) for all directives, thereby allowing for analysis of trends as well as comparisons across Directives.

However, within the Directive-specific evaluation reports, the estimated workforce coverage is not subject to the same limitations linked to a need for cross-directive comparisons and trend analysis. Therefore, to get a more accurate number of workers, the approach used to determining the workforce coverage within the Directive-specific evaluation reports is Directive-dependent and applies varying sources to determine the most accurate number of workers. As a result, the workforce coverage used to evaluate each directive independently may differ from the coverage presented above.

Following the same rationale, the estimated proportion of workers is calculated based on the total employment figure, i.e. the total workforce, according to LFS data 2012 (the last year of the scope of the evaluation), applying an age range from 15-74 years, as workers often work past the age of 64. The total workforce in 2012 thus amounted to 215,678,600 workers. Table 3-5 below shows the workforce coverage applied in the Directives in percentages and absolute numbers and provides a brief note on how the workforce coverage was estimated. We thus refer to the Directive-specific Reports for further detail.

<table>
<thead>
<tr>
<th>Directive</th>
<th>Workers</th>
<th>Proportion of workforce</th>
<th>Notes on calculation of workforce figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framework Directive</td>
<td>215,678,600</td>
<td>100 %</td>
<td>Framework Directive is considered relevant to all EU-27 workers.</td>
</tr>
<tr>
<td>Workplace Directive</td>
<td>214,837,600</td>
<td>99.6 %</td>
<td>Workforce calculated by subtracting workers employed in the extractive industries mining and quarrying sector, which fall outside the scope of the Directive, from the total number of EU-27 workers.</td>
</tr>
<tr>
<td>ATEX Directive</td>
<td>3,014,776</td>
<td>1.4 %</td>
<td>SBS data from 2010 was consulted to calculate the percentage of workers affected by the ATEX Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.</td>
</tr>
<tr>
<td>Biological Agents Directive</td>
<td>43,980,487</td>
<td>20.4 %</td>
<td>SBS data from 2010 was consulted to calculate the percentage of workers affected by the Biological Agents Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.</td>
</tr>
<tr>
<td>Vibration</td>
<td>46,470,889</td>
<td>21.5 %</td>
<td>The calculation of workforce coverage constitutes a combined</td>
</tr>
<tr>
<td>Directive</td>
<td>Number of workers</td>
<td>Proportion</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Noise Directive</td>
<td>54,846,108</td>
<td>25.4 %</td>
<td></td>
</tr>
<tr>
<td>EMF Directive</td>
<td>7,994,934</td>
<td>3.71 %</td>
<td></td>
</tr>
<tr>
<td>AOR Directive</td>
<td>3,326,526 to 7,138,961</td>
<td>1.54 - 3.31 %</td>
<td></td>
</tr>
<tr>
<td>Work Equipment Directive</td>
<td>215,678,600</td>
<td>100 %</td>
<td></td>
</tr>
<tr>
<td>Use of PPE Directive</td>
<td>80,792,481</td>
<td>37.5 %</td>
<td></td>
</tr>
</tbody>
</table>

**Noise Directive**

The assessment of two methods with different benefits and limitations:

1) According to EWCS (2010) self-reported survey data, 22.1% of respondents reported themselves as exposed to vibration for at least ¼ of their workday. Data is based on a sample of 35,000 people across EU-27, but not weighted or adjusted according to the representativeness of different sectors.

2) By means of the sub-sector approach combining LFS and SBS data, it can be determined that a total of 44,985,600 workers are employed at workplaces with potential exposure to vibration. This amounts to 20.9% of the LFS (2012) workforce. The median of these two estimated proportions is 21.5%, which amounts to a workforce coverage of 46,470,889 workers (15-74).

**EMF Directive**

Relevant data from LFS, SBS and the German Welding Society (DVS) and by European Federation for Welding, Joining and Cutting (EWF) has been acquired to calculate a total of 7,994,934 workers in the EU-27 workforce, or 3.71%.

**AOR Directive**

The calculation of workforce coverage consists of two methods with different benefits and limitations:

1) SBS data from 2010 was used to calculate the percentage of workers affected by the AOR Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers, which amounts to 2,489,526 workers, or 1.2%.

On top of this was added a specific subgroup of welders that are highly exposed to AOR. German Welding Society (DVS) and European Federation for Welding, Joining and Cutting (EWF) estimated that, in 2007, there were nearly 837,000 welders. Adding these to our previous estimation, 2,489,526 yields a total number of affected workers to be 3,326,526 by the AOR Directive. Together, this group is equivalent to 1.54% of total workers in the EU.

2) From a EWCS (2005) survey, a total of 3.31% respondents indicated that they worked in an occupation coded within ISCO7, meaning it is likely they are exposed in some form to AOR. To the extent that the EWCS sampling can be considered representative of the EU-27 workforce in terms of sectorial distribution, 3.31% would equate to 7,138,961 workers affected by the AOR Directive.

**Work Equipment Directive**

Workers are exposed to work equipment risks to some extent in all sectors and the Directive is therefore relevant to all EU-27 workers (15-74), based on LFS data from 2012.

**Use of PPE Directive**

Using LSF (2012) data, six relevant sectors was identified; these comprised of a total of 62,888,300 workers. Because the
LFS database is restricted to the main level of NACE sector codes. SBS data was consulted and a total of 17,904,181 workers in subsectors was added to the 62,888,300. This proportion was largely corroborated by the EWCS survey in which 40% of respondents stated that they were required to wear PPE as part of their job.

### Asbestos Directive
- **Workers affected:** 15,438,900
- **Proportion:** 7.22%

This represents 7.2% of the total EU-27 workforce.

### Manual Handling Directive
- **Workers affected:** 112,368,550
- **Proportion:** 52.1%

EWCS (2010) data was consulted to identify the proportion of respondents who reported that their job involves carrying or moving heavy loads. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.

### DSE Directive
- **Workers affected:** 113,792,029
- **Proportion:** 52.76%

EWCS (2010) data is used to identify the proportion of respondents who reported that their job involves the use of display screens of some kind. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.

### Carcinogens or Mutagens Directive
- **Workers affected:** 26,547,801
- **Proportion:** 12.3%

LFS (2012) data (15-74 years) and SBS (2009) data is used to calculate employment of the relevant subsectors defined as NACE B, F, C (except C16, C19, C20 and C23) and H49. SBS data is used to establish the relevant proportion of employment in the sub-sectors NACE C and H, which were applied to LSF 2012.

### Temporary workers Directive
- **Workers affected:** 28,038,218
- **Proportion:** 13%

EWCS 2010 data is used to identify the proportion of respondents who reported themselves as temporarily employed, i.e. 13%. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.

### Mines and Quarries Directive
- **Workers affected:** 689,620
- **Proportion:** 0.32%

SBS data from 2010 is used to calculate the percentage of workers affected by the Mines and Quarries Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.

### Medical treatment on board vessels Directive
- **Workers affected:** 191,747
- **Proportion:** 0.9%

SBS data from 2011 is used to calculate the percentage of workers affected by the Medical treatment on board vessels Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.

### Construction
- **Workers affected:** 15,438,900
- **Proportion:** 7.2%

Workforce coverage equals employment within the construction sector (LFS 2012). This amounts to 15,438,900 workers, corresponding to at least 7.2% of the total EU-27 workforce.
Table below:

<table>
<thead>
<tr>
<th>Directive</th>
<th>Coverage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSH signs Directive</td>
<td>215,678,600, 100%</td>
<td>OSH signs are used to some extent in all sectors, and therefore the Directive is relevant to all EU-27 workers.</td>
</tr>
<tr>
<td>Pregnant/breastfeeding workers Directive</td>
<td>71,355,000, 33%</td>
<td>Eurostat data on the demographic fertility rate by age was consulted. This data showed that the child-bearing age of females in the EU-27 in 2012 ranges from 15-49 years. There are 71,355,000 female workers in this age group according to LFS 2012.</td>
</tr>
<tr>
<td>Drilling Directive</td>
<td>100,920, 0.05%</td>
<td>SBS data from 2010 is used to calculate the percentage of workers affected by the Drilling Directive. This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.</td>
</tr>
<tr>
<td>Fishing vessels Directive</td>
<td>&lt;116,094, &lt;0.05%</td>
<td>Data from the Common Fisheries Policy (European Commission, 2014a) is used and presented in Full Time Equivalent to establish employment in the fisheries sector. The percentage is calculated by comparing Full Time Equivalents to the total number of EU-27 workers, which amounts to 116,094 workers, or 0.05%. As only 9.6% of the EU fishing vessels is covered by the scope of the Directive due to size restrictions, the established coverage is too high. However, no data exists that allows for an approximation of employment by vessel size.</td>
</tr>
<tr>
<td>Young People Directive</td>
<td>970,554, 0.45%</td>
<td>According to EWCS (2010), a total of 0.45% of the workforce are young (under 18). This proportion was used to establish the covered workforce by calculating a corresponding proportion of the total number of EU-27 workers.</td>
</tr>
<tr>
<td>Chemical Agents Directive</td>
<td>107,839,300, 50%</td>
<td>LFS (2012) data (15-74 years) is consulted to calculate employment of the relevant sectors defined as NACE A, B, C, E, F, H and Q, which amounts to 97,546,200 workers or 45.2% of the EU workforce. The addition of self-employed workers leaves a workforce coverage of 50% or 107,839,300 workers. Some corroboration of this figure can be derived from the EWCS (2010) data, which points to a 50% workforce coverage.</td>
</tr>
</tbody>
</table>

Source: Directive-specific Reports

Note: Total employment is defined as the total workforce in 2012, 15-74 years, according to LFS (2012)

Finally, this evaluation places considerable emphasis on the impact of the OSH acquis on small and medium-sized establishments (SMEs). This reflects a European labour market, which is characterised by more than 20.7 million SMEs, of which the large majority are microenterprises (27). SMEs thus represent

- 99.8% of all establishments (92.1% microenterprises), and
- 66.5% of the total employment

Table 3-6 shows the EU definitions of medium-sized, small, and micro enterprises, respectively.

<table>
<thead>
<tr>
<th>Company category</th>
<th>Employees</th>
<th>Turnover</th>
<th>or</th>
<th>Balance sheet total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium-sized</td>
<td>&lt; 250</td>
<td>≤ € 50 m</td>
<td></td>
<td>≤ € 43 m</td>
</tr>
<tr>
<td>Small</td>
<td>&lt; 50</td>
<td>≤ € 10 m</td>
<td></td>
<td>≤ € 10 m</td>
</tr>
<tr>
<td>Micro</td>
<td>&lt; 10</td>
<td>≤ € 2 m</td>
<td></td>
<td>≤ € 2 m</td>
</tr>
</tbody>
</table>

4 Implementation in Member States

For the purpose of the evaluation, a mapping exercise of the implementation of the 24 Directives in the Member States has been conducted. Each Directive has been mapped according to seven mapping questions.

The National Implementation Reports have constituted an important data source for the mapping exercise, but other sources of data have also been consulted, such as national and EU-level interviews, national legislation or relevant reports (28). Additional information on implementation in the individual Member States can be found in the individual Country Summary Reports in Appendix G.

The chapter is structured in accordance with the seven mapping questions. For the purpose of presenting information across Member States, country codes are used in tables or in brackets (refer to the list of abbreviations).

4.1 Common Processes and Mechanisms (MQ1)

MQ1: Across the Member States, how are the different Common Processes and Mechanisms foreseen by the Directives put in place, and how do they operate and interact with each other?

This first Mapping Question focuses on how MSs have designed their national legal frameworks to reflect the requirements derived from the Common Processes and Mechanisms (CPM), in particular conducting a risk assessment, ensuring internal and/or external preventive and protective services, informing workers, training workers, carrying out health surveillance, and consulting workers. The Framework Directive has introduced the Common Processes and Mechanisms, and these are further detailed in the specific individual OSH Directives. The mapping also covers specific provisions (Key Requirements), which can be seen as fundamental to the intended outcome of that Directive e.g. provisions on limit values. Since the coverage of a given Directive, i.e. provisions on scope and relevant definitions, may also be relevant to the evaluation, such requirements were also included in the mapping as Key Requirements.

The answer to MQ1 revolves around three sub-questions:

(28) An explanation of the NIRs can be found in section 2.4.1.
4.1.1 How are the CPMs reflected and articulated in the national legal framework?

Most of the MSs (22) follow a common structure whereby the main principles and requirements, principally from the Framework Directive, are transposed in one single act, usually the framework law on OSH, alternatively the Labour Code and/or the Public Health Act. This national framework legislation was not necessarily newly adopted after the entry into force of the Framework Directive; it is often the case that existing OSH legislation has been brought together into one main OSH Act, or that an existing OSH Act has been amended to comply with the Framework Directive.

For example, in Luxembourg, a significant development of the framework legislation for OSH took place with the adoption of two major laws on 17 June 1994, which transposed Directive 89/391/EEC and replaced the old framework, dating back to 1924, and other scattered legislation. These are the Laws of 17 June 1994 on, respectively, the safety and health of workers at work and on occupational health services. As one stakeholder noted, the transposition of the Framework Directive had provided a clear boost to Luxembourg legislation and policy on OSH as it led to a regrouping of a number of pre-existing elements and added further requirements in other areas. In particular, the transposition of the EU Directive triggered a stronger focus on preventive rather than remediation measures. Furthermore, in 2006, the Framework Law on OSH was incorporated into the Labour Code, which is now the main framework legislation for OSH.

A few other Member States (5) have adopted another approach, whereby the main principles and requirements are split between different laws. However, such instances are generally linked to the way legislation is shaped in a given country, and the main requirements and principles set in the Framework Directive are still transposed through primary legislation.

An example of such a setting can be found in Denmark, where regulation of occupational safety and health is shared among four ministries and separate legal acts are in place for work carried out on ground/land (Working Environment Act), offshore work in relation to mineral extracting industries (Offshore Safety Act), shipping/fishing (Act on Safety at Sea) and civil aviation (Act on Aviation).

Therefore, the national legislation often reflects the structure of the EU OSH legislation, with a framework law complemented with by-laws which transpose each individual Directive. The three OSH Directives aiming at protecting vulnerable workers, i.e. Directive 94/33/EC (young people), Directive 91/383/EEC (temporary workers) and Directive 92/85/EEC (pregnant/breastfeeding

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Interview with Representatives of employers.

Primary legislation is law adopted by the legislative branch. This contrasts with secondary legislation, which is usually adopted by the executive branch. Secondary (or delegated) legislation (i.e. statutory instruments, which have different appellations such as Orders, Regulations, Rules, Decrees) must be authorised by primary legislation, and conform to the boundaries it has laid down.
workers), are often transposed through a specific act and secondary legislation or directly through the main OSH act or the Labour Code (16 MS).

Furthermore, several Member States have transposed the two OSH Directives on the mineral extracting industry (i.e. Directive 92/104/EEC (mines and quarries) and Directive 92/91/EEC (drilling) through several pieces of secondary legislation or through, e.g., the national Mining Act and secondary legislation (9 MS). The same trend, although to a lesser degree, can be noticed for the two OSH Directives on vessels – i.e. Directive 93/103/EC (fishing vessels) and Directive 92/29/EEC (medical treatment on board vessels – (5 MS). This is explained by the fact that these two sectors, the mining and the maritime sectors, are traditionally regulated by a distinct body of legislation, which encompasses all rules related to these particular sectors.

Table 4-1 summarises the analysis above.
Table 4-1  Transposition by into national legislation by MS

<table>
<thead>
<tr>
<th>MS</th>
<th>FWD principles transposed</th>
<th>Transposition in legislation additional to secondary legislation under the framework legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In one single law</td>
<td>Mining-related directives</td>
</tr>
<tr>
<td>AT</td>
<td>OSH</td>
<td>√</td>
</tr>
<tr>
<td>BE</td>
<td>OSH</td>
<td></td>
</tr>
<tr>
<td>BG</td>
<td>OSH and labour</td>
<td>√</td>
</tr>
<tr>
<td>CY</td>
<td>OSH</td>
<td></td>
</tr>
<tr>
<td>CZ</td>
<td>OSH and labour</td>
<td>√</td>
</tr>
<tr>
<td>DE</td>
<td>OSH</td>
<td>√</td>
</tr>
<tr>
<td>DK</td>
<td>Various depending on</td>
<td></td>
</tr>
<tr>
<td></td>
<td>location</td>
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<tr>
<td>EE</td>
<td>OSH</td>
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<tr>
<td>EL</td>
<td>OSH</td>
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<tr>
<td>FR</td>
<td>Labour</td>
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<tr>
<td>HU</td>
<td>OSH</td>
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<td>Examinations</td>
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<td>OSH</td>
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<td>OSH</td>
<td>√</td>
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<tr>
<td>UK</td>
<td>OSH</td>
<td>√</td>
</tr>
<tr>
<td>Tot</td>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Country Summary Reports

Non-transposition of Directives

Finally, a few MSs have not transposed some of the individual OSH Directives. There are mainly two reasons for this non-transposition: the particular Directive is not relevant for a specific MS (e.g., the vessels Directives are of no use to land-locked MSs that do not have ships sailing their flags), or the Member State has only transposed a former version of the current individual Directive. However, in the latter case, it is unlikely that changes introduced by the new Directive are reflected.

Directive 2004/40/EC (electromagnetic fields) is no longer valid (since 28 June 2013) because it has been repealed by the new Directive 2013/35/EU. Member States need to transpose this Directive 2013/35/EU by 1 July 2016. As a result, most Member States never actually transposed Directive 2004/40/EC. Exceptions are IT, LV, LT, HU, AT, RO, SK and SE.
Please see hereunder an overview of the Member States which have not transposed certain OSH individual directives.

**Table 4-2** Instances of non-transposition

<table>
<thead>
<tr>
<th>Non-transposed Directive</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 92/29/EEC (medical treatment on board vessels)</td>
<td>AT, CZ, SK</td>
</tr>
<tr>
<td>Directive 93/103/EC (fishing vessels)</td>
<td>AT, CZ, LU, SK</td>
</tr>
<tr>
<td>Directive 2000/54/EC (biological agents)</td>
<td>EL, PT</td>
</tr>
<tr>
<td>Directive 2004/40/EC (electromagnetic fields)</td>
<td>BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, CY, LU, MT, NL, PL, PT, SL, FI, UK</td>
</tr>
</tbody>
</table>

In terms of sectors, while the national OSH legislation is applicable to both the private and the public sector, the situation differs across Member States, depending on whether the national OSH (primary and secondary) legislation covers both the private and the public sector, or the public sector is regulated by a distinct legal act.

Only four Member States (AT, FR, LU and PT) have implemented separate, distinct OSH legislation for the public and the private sector. For some of the MSs, where the public sector is regulated by distinct legislation, this public sector legislation often refers to the general (private sector) occupational health and safety legislation as directly applicable. For example, in Luxembourg, while the public sector is regulated by specific legal texts covering health and safety at work, they refer explicitly to the provisions of the books I to V of part IV of the Labour Code and to their enforcing Decrees. Similarly, in Austria, of the 114 national regulations applying specifically to the public sector, 72 refer to the general occupational health and safety legislation (AschG) as directly applicable.

Therefore differences between private and public sectors in terms of OSH requirements and levels of compliance would not, as a rule, be justified by variance in the applicable legislation.

### 4.1.2 Are there differences between the Directive’s requirements and the national requirements?

The Country Summary Reports map the observed discrepancies and the more stringent or broader and more detailed requirements for each of the Directives for the main provisions under each of the CPMs, and the KRs of the scope and definitions and limit values. It is worth reminding that the OSH Directives lay down minimum requirements. This means that national legislation can be different (i.e. impose more detailed or protective measures), but cannot set requirements that contradict those of the Directives (for example, less stringent limit values).

Discrepancies between the Directive’s requirements and the transposing legislation cover instances where the text of the national transposing legislation is different from the Directive’s

[^1]: Portugal has yet to transpose the provisions of the most recent Asbestos Directive (2009) with national legislation still based on the 2003 version. However, this does not constitute a material discrepancy.
requirements and could lead to the non-application or partial application of the CPMs, due to contradiction between the national provision and the corresponding one in the Directive.

Further, the Country Summary Reports identify instances where the national legislation goes beyond the requirements of the Directive. In addition to CPMs, this part of the review systematically covers KRs encompassing the scope and relevant definitions as well as provisions setting limit values. This involves looking, amongst other things, at whether the scope of the national legislation is broader than that of the Directive. Are limit values set in the national legislation more stringent than the ones in the Directive? The following examples of more stringent transposition have been reported in some countries:

› For the Construction Directive, several Member States impose minimum qualifications with regard to coordinators, or require a signed document for the appointment of a health and safety coordinator for a construction site and of his/her acceptation, whereas Directive 92/57/EEC (construction) only requires this appointment.

› In relation to the Directive 98/24/EC (chemical agents), a considerable number of Member States set more stringent limits for some substances, or have limits for substances for which there is no EU limit. This is the case for AT, BE, CZ, DE, DK, ES, FR, IT, LT, LV, NL, PT, RO, SE, SK, SL and UK. Similarly, more stringent limit values have been identified in AT, BG, DK, FR, LU, NL, PL and SE, in relation to Directive 2004/37/EC (carcinogens or mutagens).

› A large number of Member States (CY, EE, FI, IE, LU, LV, MT, NL, PL, PT and SE) have included domestic servants in the definition of ‘worker’ when transposing the Framework Directive, setting a broader scope of application.

› With regard to the Use of PPE Directive, some Member States (BE, DK, IE, FR) have extended the scope to include personal protective equipment used by all or some of the emergency or rescue services, when this is excluded from the Directive’s scope.

› In relation to the Young People Directive, a large number of Member States have set a broader scope, albeit in different ways. In FR, the scope is extended to trainees and young students studying in technological or vocational college, as well as young people on jobseekers’ vocational traineeships and young people accommodated in care establishments or attending care facilities under juvenile protection orders. The SE scope is also broader, as the national transposing legislation applies to all work done for employers, principals, customers and those responsible for schools who let minors do work for them or study. Another requirement mentioned was legislation also covering self-employment of young people. Some Member States (AT, BE, EE, EL, NL) cover occasional or short-term work in private households, depending on the employment contract and whether work was under the surveillance and direction of an adult. The FI scope extends to all work done by young workers under a work contract.

Observed discrepancies and cases of more stringent or broader; or more detailed requirements are extensively described in the Directive reports when relevant.

Finally, an overview of the number of infringement cases for problems of conformity per OSH Directive can help to understand where Member States have most often struggled to correctly (or
more often timely) transpose a particular Directive. The following Table gives an overview of the number of infringement proceedings per OSH Directive (32).

Table 4-3 Number of infringement proceedings per Directive

<table>
<thead>
<tr>
<th>Directive</th>
<th>Number of infringement proceedings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 89/391/EEC (framework)</td>
<td>78</td>
</tr>
<tr>
<td>Directive 89/654/EEC (workplace)</td>
<td>5</td>
</tr>
<tr>
<td>Directive 2009/104/EC (work equipment)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 89/656/EEC (Use of PPE)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 92/58/EEC (OSH signs)</td>
<td>1</td>
</tr>
<tr>
<td>Directive 1999/92/EC (ATEX)</td>
<td>12</td>
</tr>
<tr>
<td>Directive 90/269/EEC (manual handling of loads)</td>
<td>3</td>
</tr>
<tr>
<td>Directive 90/270/EEC (display screen equipment</td>
<td>2</td>
</tr>
<tr>
<td>Directive 2002/44/EC (vibration)</td>
<td>10</td>
</tr>
<tr>
<td>Directive 2003/10/EC (noise)</td>
<td>12</td>
</tr>
<tr>
<td>Directive 2004/40/EC (electromagnetic fields)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 2006/25/EC (artificial optical radiation)</td>
<td>14</td>
</tr>
<tr>
<td>Directive 2004/37/EC (carcinogens or mutagens)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 98/24/EC (chemical agents)</td>
<td>17</td>
</tr>
<tr>
<td>Directive 2009/148/EC (asbestos)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 2000/54/EC (biological agents)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 92/57/EEC (construction)</td>
<td>8</td>
</tr>
<tr>
<td>Directive 92/104/EEC (mines and quarries)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 92/91/EEC (drilling)</td>
<td>0</td>
</tr>
<tr>
<td>Directive 92/29/EEC (medical treatment on board vessels)</td>
<td>1</td>
</tr>
<tr>
<td>Directive 93/103/EC (fishing vessels)</td>
<td>2</td>
</tr>
<tr>
<td>Directive 92/85/EEC (pregnant/breastfeeding workers)</td>
<td>3</td>
</tr>
<tr>
<td>Directive 91/383/EEC (temporary workers)</td>
<td>2</td>
</tr>
<tr>
<td>Directive 94/33/EC (young people)</td>
<td>0</td>
</tr>
</tbody>
</table>

As can be expected, most cases of infringement relate to the transposition of the OSH Framework Directive. Other outliers are noted for Directive 1999/92/EC (ATEX), Directive 2002/44/EC (vibration), Directive 2003/10/EC (noise), Directive 2006/25/EC (artificial optical radiation), and Directive 98/24/EC (chemical agents).

The fact that 78 infringement proceedings have been launched by the European Commission regarding the transposition of the Framework Directive indicates that it has not always been an easy task. A large majority of the cases are now closed. One of the typical instances of non-conformity seems to be a failure to make the Framework Directive provisions applicable to the public sector or regarding the use of public installations – i.e. problems with the scope of the application. Another typical non-conformity is the imprecise implementation of Art. 5(1) – i.e. of the employers’ duty to ensure the safety and health of workers in every aspect related to their work. The transposition seems in particular to have caused difficulties in Spain (ES) which accounts for 26 of the 78 infringement proceedings.

(32) Based on list of infringements received by mail from DG EMPL on 10 November 2014.
There have been 10 infringement proceedings regarding the transposition of the Vibration Directive. They all date from 2005, and most of these concern cases of non-communication. Austria (AT) had an infringement proceeding regarding non-conformity in 2005.

The infringement proceedings with regard to the Noise Directive were initiated by the Commission mainly in 2006-2008. These all concerned non-communication of national measures and were closed during the period, as the relevant Member States adopted and communicated the relevant national measures to the Commission following either a letter of formal notice or a reasoned opinion from the Commission. On this basis, we conclude that infringement proceedings have not caused major delays in the implementation of the Directive.

The 14 infringement cases regarding the transposition of Directive 2006/25/EC (artificial optical radiation) were all started in 2010, and all were initiated due to the failure of Member States to transpose the Directive in a timely manner.

Finally, there have been 17 infringement proceedings initiated (mainly for non-communication of transposing measures) in relation to the transposition of Directive 98/24/EC (Chemical Agents). In the large majority of these infringement proceedings, the case has been closed, as the necessary steps have been taken.

4.1.3 Does the national legislation make for provisions for how the CPMs interact with each other across one Directive?

The Framework Directive is of fundamental importance as it is the basic safety and health legal act which lays down general principles concerning the prevention and protection of workers against occupational accidents and diseases. It contains principles concerning the prevention of risks, the protection of safety and health, the assessment of risks, the elimination of risks and accident factors, the informing, consultation and balanced participation and training of workers and their representatives. These CPMs are thus laid down in the Framework Directive, but the individual Directives can contain more stringent and/or specific CPM provisions.

The national legislation transposing the Framework Directive does not always include all CPM provisions, or regulates them only partially. Indeed, the national framework legislation often sets out the general principles of the CPMs, but it is the implementing (secondary) legislation which actually fully transposes all CPM requirements. The following table highlights which Member States have introduced separate secondary legislation on one or more CPMs. More detail can be found in the CSR.
### Table 4-4 Secondary legislation on specific CPMs

<table>
<thead>
<tr>
<th>MS</th>
<th>Risk Assessment</th>
<th>Preventive and protective services</th>
<th>Information for workers</th>
<th>Training of workers</th>
<th>Health Surveillance</th>
<th>Consultation of workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td></td>
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<tr>
<td>BE</td>
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</tbody>
</table>

Source: CSRs

In addition, individual CPMs are sometimes fully or partly regulated through a specific legal act. Of the 27 Member States, 17 countries have transposed one or more CPMs through secondary legislation. This is in particular the case for the CPMs that relate directly to a broader institutional and organisational context, namely preventive and protective services and health surveillance, and to a lesser extent, consultation of workers.

With regard to preventive and protective services, the Member States tend to lay down their own rules as to whether the employer, the workers (in the internal preventive and protective services), or the external preventive and protective services are responsible for the implementation of the health and safety measures in the undertaking on the basis of the legal requirements contained in the framework OSH legislation.
As part of the specific legislation on health surveillance, Member States have also often set specific rules and guidelines regarding medical examinations and their periodicity. In Romania for example, health surveillance is subject to a Governmental Decision, which regulates the specific types of medical examinations the employers must provide to their workers (examinations are differentiated based on sectors of activity as well as types of agents to which workers are exposed at work).

Another example is the UK, which regulates consultation of workers through the Safety Representatives and Safety Committees Regulations 1977, and the Health and Safety (Consultation with Employees) Regulations 1996.

An interesting but atypical example is Bulgaria, where it is the risk assessment, governed by a specific Ordinance on risk assessment, which is effective for all specific Directives (Ordinance 5 of 11 May 1999 on the procedure, manner and frequency of carrying out risk assessment).

In terms of interactions between the CPM, as a consequence of a national overarching structure similar to the OSH acquis structure, the main principles and requirements can be found in the national framework law, while specific additional requirements are set out in the by-laws transposing the individual Directives (e.g. in relation to risk assessment, and/or specific risks or parameters to assess).

The specific by-laws include provisions specifying interactions between CPMs across Directives, generally by cross-references to the OSH framework act, but this does not seem to be always done in a systematic fashion and cross-references are not sufficient as such to ensure a coherent and cohesive approach across legislation.

4.2 Derogations and transitional periods (MQ2)

MQ2: What derogations and transitional periods are applied or have been used under national law under several of the Directives concerned?

4.2.1 Derogations

Derogations are provisions which explicitly allow Member States to derogate from certain requirements contained in the Directive. They are provided by nine Directives only: Directive 89/656/EEC (Use of PPE), Directive 92/57/EEC (construction), Directive 92/58/EEC (OSH signs), Directive 92/85/EEC (pregnant/breastfeeding workers), Directive 94/33/EC (young people), Directive 98/24/EC (chemical agents), Directive 2002/44/EC (vibration), Directive 2003/10/EC (noise) and Directive 2004/40/EC (electromagnetic fields). All derogations are accompanied by conditions which need to be fulfilled before and/or after derogation is permitted.

The Table below gives an overall picture as to the use of each of these derogations by Member States. Directive 2004/40/EC (electromagnetic fields) is not included in this table, as most MSs did not transpose the Directive.
**Table 4-5  Use of derogations by Member States**

<table>
<thead>
<tr>
<th>Directive</th>
<th>Article</th>
<th>Use of Derogation</th>
<th>MS applying derogation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 89/656/EEC  (Use of PPE)</td>
<td>Art. 4(6), second indent</td>
<td>Member States’ legislation may allow for contribution of workers towards the costs of some personal protective equipment, in circumstances where use of the equipment is not exclusive to the workplace.</td>
<td>DK, RO [2]</td>
</tr>
<tr>
<td>Directive 92/57/EEC  (construction)</td>
<td>Art. 3(2)</td>
<td>This allows Member States, after having consulted both management and the workforce, to derogate from the obligation to draw up a health and safety plan, except where it is a question of work involving particular risks listed in Annex II to the Directive or work for which prior notice is required, as set out in Article 3.3</td>
<td>BE, CZ, DK, EE, ES, IT, LU, MT, SI [9]</td>
</tr>
<tr>
<td>Directive 92/58/EEC  (OSH signs)</td>
<td>Art. 6(2)</td>
<td>Derogation from the application of specific rules and minimum requirements for the use of verbal communication, gesture and code words (as laid down in Annex VIII, section 2) Derogation from the application of the set of coded signals to be used for certain manoeuvres in certain sectors laid down in Annex IX, section 3</td>
<td>BE, BG, DE, DK, LT, LU, SI, UK [8]</td>
</tr>
<tr>
<td>Directive 92/85/EEC  (pregnant/breastfeeding workers)</td>
<td>Art. 11(4)</td>
<td>Possibility to make the entitlement to pay conditional upon the conditions of eligibility under the national legislation National legislation cannot provide for periods of previous employment in excess of 12 months immediately prior to the presumed date of confinement</td>
<td>BG, DE, EE, LT, LU, LV, SK [7]</td>
</tr>
<tr>
<td>Directive 94/33/EC  (young people)</td>
<td>Art. 5(3)</td>
<td>Derogation from the requirement to receive a prior authorisation for the employment of children for the purposes of performance of children in cultural and similar activities</td>
<td>AT, DK, ES, FI, LU, PT, SE, SK, UK [9]</td>
</tr>
<tr>
<td></td>
<td>Art. 7(3)</td>
<td>Derogation from the prohibition of employment of young people for works listed in Article 7.2 (works that entail specific risks) in the case of adolescents (e.g. work involving harmful exposure to toxic chemical agents and/or radiations, high exposure to physical and biological agents, work objectively beyond the physical or psychological capacity of the young worker) where such derogations are indispensable for their vocational training</td>
<td>AT, BE, CZ, DE, DK, EE, EL, FR, IT, LU, LV, NL, PL, PT, SE, SI, SK, UK [18]</td>
</tr>
<tr>
<td></td>
<td>Art. 8(5)</td>
<td>Derogation from the minimum rest periods for interruption in the case of activities involving periods of work that are split up over the day or are of short duration</td>
<td>DK, FR, CY, LU, UK [5]</td>
</tr>
<tr>
<td></td>
<td>Art. 9(2)</td>
<td>Derogation from the prohibition of night work for young people in the case of adolescents and in specific areas of activity.</td>
<td>AT, BE, CY, CZ, DE, DK, EE, EL, FR, IT, LU, SI, SK, UK [14]</td>
</tr>
<tr>
<td></td>
<td>Art. 10(3)</td>
<td>Derogation from the obligation to ensure minimum weekly rest periods for children and adolescents.</td>
<td>BE, DK, EL, FI, IT, LU, PT, UK [8]</td>
</tr>
</tbody>
</table>
| 10(4) | Derogations from rest periods in respect of adolescents for  
|       | (a) work performed in the shipping or fisheries sectors; 
|       | (b) work performed in the context of the armed forces or the police;  
|       | (c) work performed in hospitals or similar establishments;  
|       | (d) work performed in agriculture;  
|       | (e) work performed in the tourism industry or in the hotel, restaurant and café sector;  
|       | (f) activities involving periods of work split up over the day  
| CY, DK, EL, FR, LU, NL, PT, UK [8] |
| Art. 13 | Derogations from Article 8 (2) (prohibition of working over 8 hours per day and 40 hours per week), Article 9 (1) (b) (prohibition of night work between 10 p.m. and 6 a.m.), Article 10 (1) (b) (minimum period of 12 hours rest each 12 consecutive hours of work) and, in the case of adolescents, Article 12 (entitlement to 30 minutes break), for work under force majeure  
| AT, DK, EL, FR, IT, LU, PT, SI, UK [9] |
| Directive 98/24/EC (chemical agents) Art. 9(2) | Derogations from prohibition of the use of certain chemical agents and activities involving chemical agents in the following circumstances:  
|       | - for the sole purpose of scientific research and testing, including analysis,  
|       | - for activities intended to eliminate chemical agents that are present in the form of by-products or waste products,  
|       | - for the production of specified chemical agents for use as intermediates, and for such use.  
| BE, BG, CZ, DE, EE, IE, EL, ES, IT, LV, LT, LU, MT, PL, PT, SI, SK, FI, SE, UK [20] |
| Directive 2002/44/EC (vibration) Art. 10(1) | Derogation from the obligation to comply with exposure limit values in the case of sea and air transport  
| BE, BG, DK, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, SE, SK, UK [17] |
| Art. 10(2) | Derogation from the obligation to comply with exposure limit values in a case where the exposure of a worker to mechanical vibration is usually below the exposure action values but varies markedly from time to time and may occasionally exceed the exposure limit value  
| AT, BE, BG, DK, EL, ES, FI, IE, IT, LT, LU, LV, MT, PT, SI, UK [16] |
| Directive 2003/10/EC (noise) Art. 11(1) and 11(2) | Properly fitting individual hearing protectors do not have to be made available in exceptional situations where, because of the nature of the work, the full and proper use of individual hearing protectors would be likely to cause greater risk to health or safety than not using such protectors  
| BE, BG, DK, EE, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, PL, RO, SI, UK [19] |
The Table above shows a mixed picture as to the use of derogations by Member States across directives.

› Twenty Member States have used the derogations laid down in Directive 98/24/EC (chemical agents) from the prohibition of the use of certain chemical agents.

› Two of the derogations provided by Directive 94/33/EC (young people) have been used extensively: 18 MSs have made use of the derogation from the prohibition of employment of young people in the case of adolescents where such derogations are indispensable for their vocational training. 13 MSs applied derogation from the prohibition of night work for young people in the case of adolescents and in specific areas of activity.

› The two derogations provided by Directive 2002/44/EC (vibration) have been used by respectively 17 and 16 Member States. The first possibility is that the Member States may, in the case of sea and air transport, derogate the provisions aimed at avoiding or reducing exposure to whole-body vibration, where, given the state of the art and the specific characteristics of workplaces, it is not possible to comply with an exposure limit value despite the technical and/or organisational measures taken. The second possibility concerns situations where workers exposed to mechanical vibration, usually below the exposure limit values, occasionally may be exposed to vibration that exceeds these limit values.

› Nineteen Member States have used the derogation laid down in Directive 2003/10/EC (noise), which states that properly fitting individual hearing protectors do not have to be made available in exceptional situations.

Other derogations have been far less used.

4.2.2 Transition periods

Transitional periods are periods of time in which Member States are exceptionally given an extended deadline for the implementation of particular provisions of the Directives. They constitute a basic tool to help authorities to adapt the implementation of Directives to the actual capacities and characteristics of companies in the MS or sectors that may need a period of time to adopt or implement the provisions of a particular Directive. Most of the transitional periods are not applicable anymore, as the dates by which the provisions in question had to be implemented have already passed. However, these periods should be taken into consideration to explain delays in implementation of certain Directives. The transitional periods applied to eight Directives only.

The Table below illustrates which Member States have made use of the transitional periods in the implementation of the relevant Directives and if these periods have been respected.
### Table 4-6  Use of transitional periods by Member States

<table>
<thead>
<tr>
<th>Directive</th>
<th>Relevant transitional period</th>
<th>MSs who applied transitional periods</th>
<th>MSs who respected transitional periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 92/91/EEC (drilling)</td>
<td>Workplaces in use before the date on which the Directive was brought into effect had a transitional period of up to five years before being subject to the minimum requirements laid down in the Annex of the Directive (Art. 10 (2)).</td>
<td>AT, BE, DK, EL, ES, FI, IT, LT, LU, NL</td>
<td>BE, DK, EL, ES, FI, IT, LT, LU, NL [9]</td>
</tr>
<tr>
<td>Directive 92/104/EEC (mines and quarries)</td>
<td>Workplaces already in use at the time of entry into force of the Directive could benefit from a transitional period of up to nine years after the Directive entered into force to satisfy the minimum requirements laid down in the Annexes (Art. 10(2)).</td>
<td>BE, DK, EL, ES, LT, LU, NL, AT, FI [9]</td>
<td>BE, DK, EL, ES, LT, LU, NL, FI [8]</td>
</tr>
<tr>
<td>Directive 93/103/EEC (fishing vessels)</td>
<td>Existing fishing vessels could benefit from a transitional period of up to seven years before being required to comply with the minimum safety and health requirements laid down in Annex II (Art. 5).</td>
<td>DE, EE, EL, ES, FI, IE, IT, LT, NL, PT, SL [11]</td>
<td>DE, EE, EL, ES, FI, IE, IT, LT, NL [9]</td>
</tr>
<tr>
<td>Directive 2002/44/EC (vibration)</td>
<td>Member States are allowed to set, after consultations with the relevant social partners, maximum transitional periods of five years from 6 July 2005 where work equipment used was given to workers before 6 July 2007 and did not permit the exposure limit values to be respected (Art. 9 first indent). A second transitional period was provided specifically for the agriculture and forestry sectors, with a four year transitional period (Art. 9 second indent).</td>
<td>All Member States but CZ, HU and SK [24]</td>
<td>All [24]</td>
</tr>
<tr>
<td>Directive 2003/10/EC</td>
<td>Member States were granted additional transitional periods of</td>
<td>AT, CY, DE, DK, EL, ES, FI, FR,</td>
<td>All [18]</td>
</tr>
</tbody>
</table>

---

(33) Bulgaria (BG) and Romania (RO) became EU Member States on 1 January 2007. To that date, all Directives mentioned in the table, of which the end dates of the transitional periods have preceded the accession date for Bulgaria and Romania, have been transposed into the national OSH legislation. Therefore, BG and RO are not included in the table.
<table>
<thead>
<tr>
<th>Directive</th>
<th>Relevant transitional period</th>
<th>MSs who applied transitional periods</th>
<th>MSs who respected transitional periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>(noise)</td>
<td>five years in relation to personnel on board sea-going vessels and of two additional years for the music and entertainment sectors. Such transitional periods were meant to allow Member States enough time for drafting codes of conduct and practical guidelines for the implementation of the Directive (Art. 17).</td>
<td>IE, IT, LT, LU, MT, NL, PL, PT, SI, UK [18]</td>
<td></td>
</tr>
<tr>
<td>Directive 2009/104/EC (work equipment)</td>
<td>The employer shall obtain and/or use work equipment which, if already provided to workers by 31 December 1992, complied with the minimum requirements laid down in Annex I no later than four years after that date. Furthermore, the employer shall obtain and/or use specific work equipment subject to the requirements of point 3 of Annex I, which, if already provided to workers in the undertaking or establishment by 5 December 1998, complies with the minimum requirements laid down in Annex I, no later than four years after that date (Art. 4(1)).</td>
<td>BE (for specific equipment), EE, EL, ES, FR, CY, LT, LU, NL, AT, PT, FI, UK [13]</td>
<td>BE, EE, ES, FR, CY, LT, LU, NL, AT, FI, UK [11]</td>
</tr>
<tr>
<td>Directive 1999/92/EC (ATEX)</td>
<td>Member States are provided with the possibility to apply a general transitional period (up until 30 June 2003) for the full transposition of the Directive into national law (Art. 15).</td>
<td>AT, BE, CY, CZ, DK, EE, EL, ES, FI, IE, LT, LU, NL, PL, PT, SI, UK [17]</td>
<td>BE, CY, CZ, DK, ES, FI, IE, LT, LU, NL, PL, PT, SI, UK [14]</td>
</tr>
</tbody>
</table>

The Table above shows that many Member States (an average of half) have applied transitional periods in the implementation of most of the Directives for which such a possibility was provided. In the vast majority of cases, Member States who opted for the application of transitional periods have also respected them. The number of Member States who have not respected the given deadlines for each Directive has in any case never exceeded three.
4.3 Compliance (MQ3)

**MQ3**: What are the differences in approach to and degree of fulfilment of the requirements of the EU OSH Directives in private undertakings and public-sector bodies, across different sectors of economic activity and across different sizes of companies, especially for SMEs, microenterprises and self-employed?

The third mapping question concerns the level of compliance with the national OSH legislation achieved in the Member States at the enterprise level. The mapping of compliance is essential due to the underlying rationale that if establishments comply with the requirements of the Directives, this indicates that their implementation may be a key explanatory factor in relation to possible health and safety outcomes. The task of mapping compliance is associated with specific methodological challenges. We shall therefore briefly present wherein these challenges lie, how we have sought to overcome them and how they may impact the findings presented in this section.

4.3.1 Methodology for compliance

To shed light on compliance ideally involves the assessment of two equally important aspects of compliance: quantity and quality. Quantity concerns the measurable outputs of the implementation of the OSH acquis, while (a minimal level of) quality of those outputs is equally important in order for an establishment to be in compliance. Thus, to measure the level of compliance, on the one hand, entails measuring the share of establishments that implements specific requirements contained in the OSH acquis, such as for example the basic requirement to formulate an OSH management plan. This is measured quantitatively, most often by means of surveys, and is a prerequisite for OSH compliance.

On the other hand, compliance is not achieved solely by producing the required output, such as through the formulation of an OSH management plan. The plan may be incomplete, it may lack essential elements, may not take all risks into account, may not be well executed etc., all of which undermines compliance, as the Directives contain requirements which are essentially quality and content oriented rather than activity oriented. Mapping compliance in the MSs therefore also requires an assessment of the quality of those actions undertaken in establishments in order to comply. The methodological duality of the quantitative and qualitative assessments is presented below.

The quantitative aspect of compliance

In order to conduct a quantitative assessment, it is necessary to establish measurable indicators for compliance, and in order for that assessment to be aggregated at the EU level, these indicators must be generic and comparable across Member States.

As all establishments across MSs and sectors, regardless of specific characteristics, are required to comply with the common processes and mechanisms that emanate from the Framework Directive, they make up a solid foundation for assessing the minimum level of quantitative compliance in the EU. The common processes and mechanisms (CPMs) constitute the core of the OSH acquis and are the minimum requirements that all establishments must implement. Therefore, the quantitative evaluation of compliance is based on a mapping of the extent to which these CPMs are implemented in establishments. There are six CPMs, as outlined in Table 2-1 above (see the Table for further elaboration on each CPM):

- The requirement to perform a risk assessment
Establishing preventive and protective services

Providing training of workers

Providing information to workers

Performing health surveillance

Performing consultation of workers.

Notably, establishments are likely to be subject to a range of other OSH requirements depending on the specific national provisions, the sector within which they operate, as well as on numerous characteristics of the establishment and its operations, which may possibly trigger key requirements stemming from various OSH Directives. For instance, an establishment may be required to change the office chairs according to provisions of the Display Screen Directive, or substitute a chemical or biological agent with a less harmful substance according to the provisions of the Chemical Agents Directive or the Biological Agents Directive, respectively. However, as little compliance data currently exist at this level of detail, which can be aggregated at the EU level, we refer to the Directive-specific evaluation reports, within which data has been sought out and assessed at a higher level of detail, to the extent possible.

For the CPMs, some data sources are available at the EU level that are specifically designed to provide an insight into the share of establishments that comply with these CPMs, from a quantitative perspective. The following variables and survey questions have been identified (Table 4-7). The variables and data sources have been grouped into seven categories comprising the six CPMs and an overarching category ‘OSH overall’ to illustrate which CPM a given variable is primarily expected to contribute to.

Table 4-7  Variables and data sources available for a quantitative assessment of compliance

<table>
<thead>
<tr>
<th>CPM</th>
<th>Survey</th>
<th>Variable</th>
<th>Question or headline</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSH overall</td>
<td>ESENER</td>
<td>MM155</td>
<td>Is there a documented policy, established management system or action plan on health and safety in your establishment?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM161</td>
<td>Are workplaces in your establishment regularly checked for safety and health as part of a risk assessment or similar measure? [also used to inform on risk assessments]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM355</td>
<td>Does your establishment have an internal health and safety representative?</td>
</tr>
<tr>
<td>ESENER-2*</td>
<td>Q166</td>
<td></td>
<td>Which of the following forms of employee representation do you have in this establishment?</td>
</tr>
<tr>
<td>NIRs</td>
<td>2.2</td>
<td></td>
<td>General principles of risk prevention.</td>
</tr>
<tr>
<td></td>
<td>2.8</td>
<td></td>
<td>Do SMEs have particular difficulties in following the requirements of the Directives?</td>
</tr>
<tr>
<td>Risk assessment</td>
<td>ESENER</td>
<td>MM161</td>
<td>Are workplaces in your establishment regularly checked for safety and health as part of a risk assessment or similar measure? [also used to inform on overall OSH compliance]</td>
</tr>
<tr>
<td>Preventive and protective services</td>
<td>ESENER</td>
<td>MM150</td>
<td>What health and safety services do you use, be it in-house or contracted externally?</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------</td>
<td>-------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NIRs</td>
<td>2.3</td>
<td>Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.</td>
<td></td>
</tr>
<tr>
<td>Information for workers</td>
<td>ESENER</td>
<td>ER154</td>
<td>Does the management provide you with the necessary information for carrying out your health and safety tasks properly?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER155</td>
<td>Do you usually receive the information on time and without having to ask for it?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER205</td>
<td>Are employees in this establishment regularly informed about safety and health at the workplace?</td>
</tr>
<tr>
<td>Eurobarometer 398</td>
<td>Q14A</td>
<td>Have the following measures been put in place at your workplace? [Information and/or training for staff about OSH]</td>
<td></td>
</tr>
<tr>
<td>EWCS 2010</td>
<td>Q30</td>
<td>Regarding the health and safety risks related to performance of your job, how well informed would you say you are?</td>
<td></td>
</tr>
<tr>
<td>NIRs</td>
<td>2.4</td>
<td>Information, instruction and training of workers.</td>
<td></td>
</tr>
<tr>
<td>Training of workers</td>
<td>ESENER</td>
<td>ER159</td>
<td>On which of the following issues have you or your health and safety representative colleagues received training?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER160</td>
<td>Is this training sufficient or would more training in any of these fields be desirable?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER161</td>
<td>On which of the following topics would you or your health and safety representative colleagues need additional training?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER162</td>
<td>Which of the following are the main reasons for receiving no or not sufficient training on these issues?</td>
</tr>
<tr>
<td>Eurobarometer 398</td>
<td>Q14A</td>
<td>Have the following measures been put in place at your workplace? [Information and/or training for staff about OSH]</td>
<td></td>
</tr>
<tr>
<td>NIRs</td>
<td>2.4</td>
<td>Information, instruction and training of workers.</td>
<td></td>
</tr>
<tr>
<td>Health surveillance</td>
<td>ESENER</td>
<td>MM154</td>
<td>Is the health of employees monitored through regular medical examinations?</td>
</tr>
<tr>
<td>NIRs</td>
<td>2.6</td>
<td>Health surveillance</td>
<td></td>
</tr>
<tr>
<td>Consultation of workers</td>
<td>ESENER</td>
<td>MM355</td>
<td>Does your establishment have an internal health and safety representative?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ER102</td>
<td>Is there a permanent committee or working group consisting of members of the management and representatives of the employees dealing with safety and health in this establishment?</td>
</tr>
</tbody>
</table>
**ER209** Do you have a say in the decisions on when and where these risk assessments or workplace checks are carried out?

**ER211** Are you as health and safety representatives usually involved in the choice of follow-up actions?

**Eurobarometer 398 Q9A** Over the past 12 months, have you or not…? [Been consulted on health and safety issues at work by your employer or a health and safety representative]

**NIRs** 2.5 Involvement of workers and their representatives (e.g. consultation, participation).

* ESENER-2 only available as a preview of preliminary conclusions.

As illustrated, at the EU level, the major source of compliance data is the ESENER survey. The ESENER survey is a recognised and wide-ranging survey during which nearly 36,000 interviews with managers and health and safety representatives were interviewed across all 27 Member States covered by the present evaluation, as well as in Croatia, Turkey, Norway and Switzerland.

However, some inherent delimitations to the ESENER survey should be kept in mind while assessing ESENER data. Firstly, the survey population of ESENER (2009) includes all establishments with 10 or more employees, which means that micro establishments (<10 employees) are excluded from the scope. Micro establishments employ 28.7 % of the working population in the EU (European Commission, 2013a). In the subsequent ESENER-2 survey (data from 2013), however, the survey population has been increased to also include establishments with five to nine employees.

Also, ESENER engages management and OSH employee representatives who might respectively give different responses than would have been provided by workers. While these perspectives provide significant added value, they necessitate two overall reservations: In the case of responses provided by management, they might raise questions of objectivity and some degree of bias. In the case of responses from employee representatives, this data (e.g. on the level of information for workers) inherently excludes establishments without safety and health employee representation, which might result in more OSH-favourable findings than would have been reached with a survey population that includes establishments without employee representation.

Nevertheless, the ESENER survey is a valuable source of data, which, for several of the CPMs, allows for a reasonably accurate indication of the share of establishments that seeks to implement the minimal requirements.

Another data source designed to provide insights into the national implementation of the CPMs is the National Implementation Reports (NIRs) submitted by each Member State to the Commission in 2012. In Section 1 of the NIRs, MSs are required to report on general aspects of OSH *acquis* implementation as well as implementation of each CPM under the sub-headlines inserted in Table [34].

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[34] As mentioned in the methodology section, we have obtained, in time for analysis, a report on the preliminary conclusions from the ESENER-2 findings. Unfortunately, the data itself is not available for calculation as the full ESENER-2 data set has not been released. We therefore cannot facilitate comparisons by excluding the added population of establishments with 5-9 employees. However, where appropriate, we will make comparisons between ESENER and ESENER-2 although the differences in the base of surveyed establishments hinders trend analysis and direct comparison.
4-7. It is therefore reasonable to expect that the NIRs contain comparable national information to inform on the proportion of establishments that comply with the OSH acquis within each MS.

Also at the Member State level, a corresponding analysis of compliance with the CPMs has been conducted by national experts in the course of this evaluation. In the Country Summary Reports (CSRs), national experts have provided an estimate on the extent of compliance for establishments in their country. The findings and conclusions of the CSRs in part build on the National Implementation Reports as well as on other data available to the national experts, such as national surveys and studies, as well as ESENER data at the MS level.

For the sake of triangulation, we shall extract the quantitative data from the CSRs and the NIRs to supplement the survey data to the extent possible.

The qualitative aspect of compliance

The second aspect of compliance is the assessment of whether the interventions in establishments have sufficient quality to be regarded as in alignment with minimal requirements of the Directives. While we may quantitatively identify a share of establishments that implement specific CPMs, the resulting figure does not provide insights into the quality of the activities implemented to comply. Compliance may therefore not actually be achieved in all cases that appear in the quantitative analysis. Ideally, we would therefore need to add a qualitative counterpart to the quantitative assessment. However, an attempt to identify survey data to be examined for the qualitative counterpart reveals that, currently, no data is available which systematically allows for such an assessment at the EU level. As a consequence, we may for instance measure the share of safety and health representatives that have received OSH training, but we cannot, based on existing survey data, assess the quality of that training and whether those employee representatives gained the intended skill set as a result.

This gap in data availability is inter alia a result of a high degree of complexity associated with measuring the quality of OSH initiatives in establishments. For example, many Directives are designed in a goal-oriented manner with emphasis on what is to be achieved with the implementation of Directives (without quantitative targets), and MSs and establishments therefore have a large degree of flexibility in choosing how to reach required safety and health standards at work places. As outlined in section 4.1, substantial differences exist in the way the OSH Directives have been implemented in the Member States in terms of level of detail, stringency, etc. As a corollary, the effort necessary in order to comply with the OSH requirements and what actually constitutes 'compliance' in its own right, differs across Member States.

Data availability is therefore limited to more subjective, qualitative information collected during EU stakeholder interviews, national stakeholder interviews, National Implementation Reports and the Country Summary Reports.

Applied methodology

Having thus assessed data availability, it is clear that we are able to assess the quantitative aspect of compliance, while we cannot establish a systematic framework for evaluation of the qualitative aspect, (i.e. the extent to which the quality of performed OSH measures are sufficient to be in compliance with OSH acquis requirements). Therefore, we shall primarily analyse the quantitative aspect of compliance on an overall level and with each CPM individually, by means of a mapping of the NIRs, the CSRs and the identified variables listed in Table 4-7 above. We shall supplement with qualitative information from interviews, NIRs and CSRs to the extent possible.
However, when assessing and especially concluding on the quantitative data, a final challenge lies in the lack of targets in the Directives, which means that there are no established, predefined minimal requirements for compliance to measure the findings up against. Furthermore, data can be reported in different forms and may point in different directions, which makes a compiled conclusion difficult to make in a transparent, scientifically acceptable manner.

To maintain transparency, to make different data sources comparable and to establish a benchmark to serve as a categorisation of results, we have established the following five compliance categories, which we shall use to classify the survey results from very poor quantitative compliance to very good quantitative compliance, as illustrated in Table 4-8. The same methodological approach is applied in those cases where interviewed stakeholders have provided a compliance score from 1-5.

### Table 4-8 Interpretation of quantitative data for compliance

<table>
<thead>
<tr>
<th>Assessed compliance (share of surveyed establishments)</th>
<th>Assessed compliance (scores from 1-5)</th>
<th>Category</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 % - 100 %</td>
<td>4.3 to 5.0</td>
<td>A</td>
<td>Very good quantitative compliance</td>
</tr>
<tr>
<td>75 % - 89 %</td>
<td>3.5 to 4.2</td>
<td>B</td>
<td>Good quantitative compliance</td>
</tr>
<tr>
<td>60 % - 74 %</td>
<td>2.7 to 3.4</td>
<td>C</td>
<td>Moderate quantitative compliance</td>
</tr>
<tr>
<td>40 % - 59 %</td>
<td>1.9 to 2.6</td>
<td>D</td>
<td>Poor quantitative compliance</td>
</tr>
<tr>
<td>0 % - 39 %</td>
<td>1.0 to 1.8</td>
<td>E</td>
<td>Very poor quantitative compliance</td>
</tr>
</tbody>
</table>

Source: COWI evaluation team

As mentioned above, we shall extract national compliance data from the CSRs to supplement the quantitative analysis. In order to compile and incorporate such national findings into an EU-level assessment of compliance across MSs, we shall calculate an average compliance rate using the following methodology:

As the national data from each MS is extracted from the CSRs, the MS in question is placed into one of the five compliance categories: very high, high, medium, low and very low. Each category has then been assigned a numeric value where very high (vh) = 5, high (h) = 4, medium (m) = 3, low (l) = 2 and very low (vl) = 1. One average compliance value is then calculated using the following formula

\[
\text{Average compliance value} = \frac{\#\text{MS(vh)} \times 5 + \#\text{MS(h)} \times 4 + \#\text{MS(m)} \times 3 + \#\text{MS(l)} \times 2 + \#\text{MS(vl)} \times 1}{27 - \#\text{MSs for which no national data could be identified}}
\]

(35) Ranges used for the interpretation of survey data are established based on an expert assessment of the proportion of establishments that could be expected to comply with national provisions and which would result in sufficient worker coverage in order to qualify for the five compliance categories. Ranges used for the interpretation of interview scores are defined according to the intuitive understanding of each score as applied by interviewees.
The average EU compliance value calculated based on national data (a figure from 1-5) is then interpreted in accordance with the Interpretation Table 4-8 above to allow for systematic comparison with other data.

During the mapping of compliance, to the extent possible, we shall seek to classify the quantitative aspect of compliance on the overall level and for each CPM for micro, small and medium sized establishments, respectively.

For each analysed survey variable, we shall objectively map and present the factual compliance rates as suggested by each data source. As various data sources may point in different directions, we shall collect the quantitative data in an evidence table, within which each variable is categorised according to Table 4-8 above. Using this evidence table, we shall combine the quantitative data in one final interpretation of the collected data, which constitutes our combined conclusion. We may thus conclude that compliance is either higher or lower compared to a compliance rate suggested by a given data source, depending on the results of complementary data.

It is essential to highlight that our compliance scores generally reflect the assessment of the evaluation team based on all available data on the quantitative aspect only, i.e. the share of establishments to have implemented the CPM in question. The exception to this rule is the 1-5 stakeholder interview scores, as stakeholders have possibly included both quantitative and qualitative aspects to formulate one common compliance score.

3 The following presentation of the findings from the mapping of compliance is structured as follows:

1 Assessment of overall compliance, section 4.3.2 – in this subsection, we assess compliance in micro establishments, SMEs and large establishments on a broad, overall level, including the influence of employee representation on OSH compliance and compliance in the public sector compared to the private sector.

2 Compliance with CPMs, section 4.3.3 – in this subsection we assess each of the six CPMs individually:
   a. Risk assessments – the first CPM we assess is Risk assessments. As this analysis is more extensive than the following CPMs, this section contains a sub-section providing conclusions based on the risk assessment findings individually.
   b. Preventive and protective services – the second CPM we assess is preventive and protective services,
   c. Information for workers – the third CPM we assess is information for workers,
   d. Training of workers – the fourth CPM we assess is training of workers,
   e. Health surveillance – the fifth CPM we assess is health surveillance,
   f. Consultation of workers – the sixth CPM we assess is consultation of workers.

3 Conclusions on compliance, section 4.3.4 – in this subsection we summarise and present the combined conclusions from all of the above subsections on compliance.
4.3.2 Assessment of overall compliance

In the following assessment of overall compliance, we present the results of the quantitative data presented in Table 4-7 above and the qualitative input collected during EU and national stakeholder interviews, examination of the NIRs and the CSRs. We shall present conclusions on overall compliance among micro establishments, SMEs and larger establishments, respectively, to the extent possible. As part of this analysis, we examine the influence of employee representatives on OSH compliance as well as compare compliance between the public sector and the private sector. Lastly, we present a brief synthesis of the findings including a summary of evidence that forms the basis for the compliance categorisation as presented in Table 4-8.

In order to gain an initial insight into the overall level of compliance, we asked EU stakeholders to provide us with an assessment of the perceived level of compliance for each Directive. Figure 4-1 shows the aggregated average for each stakeholder group based on compliance scores for the individual Directives. In other words, it collates compliance scores for all Directives into one score, which represents the OSH acquis.

![Figure 4-1 Perceived compliance with OSH acquis according to EU stakeholders](image)

Source: EU stakeholder interviews (n=20).

Note: Scores from 1 to 5 indicate very low to very high compliance – based on stakeholder response to the question: ‘To what extent do your members comply with the key requirements outlined in the Directives? (Rate on a scale of 1-5)’

According to EU stakeholder interview responses, the degree of compliance with the OSH acquis, across MSs, is above medium (3.65). Generally, stakeholders representing employers are the most positive, with an average score across Directives of 3.85, while both stakeholders representing workers and the group of stakeholders known as ‘other stakeholders’ (comprising EU OSHA, SLIC, Eurofound and the ISO group) assessed compliance with the OSH acquis to be slightly lower (3.5). This assessment provides a fair indication of the general level of compliance, but clearly does not provide an entirely nuanced picture of the situation in all Member States.

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(36) The ISO group was interviewed for the OSH signs Directive only.
To supplement, we assess data from managers interviewed during the 2009 ESENER survey, who stated that their establishments either have a documented policy, an established management system or an action plan to ensure the health and safety of workers. The existence of an OSH policy is a good indicator of intended compliance with the OSH acquis at the EU level. This data is presented according to size of establishment in Figure 4-2 below.

Figure 4-2 Establishments with a documented policy, established management system or action plan on health and safety

![Chart showing the percentage of establishments with a documented policy, established management system or action plan on health and safety by size of establishment.](image)

Source: ESENER (2009), MM155 (by size of establishment)

Note: Share of interviewed managers who answered ‘Yes’ to the question: ‘Is there a documented policy, established management system or action plan on health and safety in your establishment?’

Figure 4-2 shows that 79% of interviewed establishments state that they have a documented OSH policy or action plan. These figures vary significantly from Member State to Member State. For example, within the group of establishments with 10 to 19 employees, Greece has the lowest share (33%), while, for the same group in the UK, ESENER reported a share of 98%. For the group with large establishments, Poland has the lowest share (71%), while 100% of the managers interviewed in Estonia, Latvia, Slovakia, Sweden and United Kingdom state that they have an OSH policy or action plan (ESENER; 2009, MM155).

As also depicted in Figure 4-2, ESENER shows that compliance appears to increase in accordance with the size of the establishment, from 70% in establishments with 10 to 19 employees to 90% in large establishments with 500 or more employees, stating that they have a documented OSH policy. This tendency was also identified in a 2014 survey comprising 26,571 respondents, from different social and demographic groups, across the EU-28, called the Flash Eurobarometer 398 on working conditions (European Commission, 2014). The Flash Eurobarometer 398 survey establishes that larger establishments are more likely to have measures in place in order to prevent health problems or accidents at work.

A systematic mapping of the reports from the National Implementation Reports, reveals similar conclusions in the Member States. As previously mentioned, the NIRs contain an introductory section within which MSs are required to report on general issues related to OSH implementation.
One required sub-section is entitled, ‘2.8 Do SMEs have particular difficulties in following the requirements of the Directives? If yes, please describe them.’ Analysis of the inputs from the MSs revealed that the MSs have chosen very different approaches to answering this question and have rarely included the compliance rates for national SMEs. This compromises the possibility to compare SME compliance in Member States. In Table 4-9 below, we therefore categorise the MSs into three groups: Those MSs that unequivocally express that SMEs have particular challenges (column ‘yes’), those MSs that unequivocally express that SMEs do not have particular challenges (column ‘no’), and those MSs that either did not provide an answer to the question or for whom the answer was subject to interpretation or was in other ways unclear (column N.A.).

Table 4-9  NIR responses to question 2.8 - Do SMEs have particular difficulties in following the requirements of the Directives?

<table>
<thead>
<tr>
<th>MS</th>
<th>Yes</th>
<th>No</th>
<th>N.A.</th>
<th>Selected comments on the subject from the NIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td></td>
<td>x</td>
<td></td>
<td>Note: No comment made</td>
</tr>
<tr>
<td>BE</td>
<td>x</td>
<td></td>
<td></td>
<td>Successfully reaching SMEs is and continues to be a weak point. Implementation is good when there are large in-house preventive services; in SMEs, however, risk assessment poses problems and the number of visits by external services to SMEs is unsatisfactory. ‘Emerging risks’ such as psychosocial stress and MSDs are increasing in all enterprises and are not being adequately countered by the Directives.</td>
</tr>
<tr>
<td>BG</td>
<td>x</td>
<td></td>
<td></td>
<td>Good organisation of OSH management has been ensured in most large and medium-sized enterprises. The micro and small enterprises and a percentage of the medium-sized ones are experiencing difficulties in this respect, due to the fact that they have no established traditions, that the employers do not possess sufficient managerial experience and that they are not well informed about the labour legislation and the requirements for safety and health at work.</td>
</tr>
<tr>
<td>CY</td>
<td>x</td>
<td></td>
<td></td>
<td>The practical difficulties encountered in ensuring that the directives achieve their aims relate to the inability of small businesses to comply with the requirements of the directives, due to the lack of know-how, equipment, appropriate means, suitably qualified staff, and capital. In addition, small businesses fail to provide sufficient documentation of the measures taken to ensure the compliance of employers with the relevant legislation. One example is the lack of appropriate risk assessment reporting and the absence of equipment maintenance documents, accident records and personnel training.</td>
</tr>
<tr>
<td>CZ</td>
<td>x</td>
<td></td>
<td></td>
<td>The information available indicates that small and medium-sized enterprises have no difficulties in meeting the requirements set out in applicable legislation stemming from the relevant Directives. Any difficulties that small and medium-sized enterprises do face have no basis in the Directives, as these lay down only minimum standards.</td>
</tr>
<tr>
<td>DK</td>
<td>x</td>
<td></td>
<td></td>
<td>In the course of its inspection work, the Danish Working Environment Authority has become aware that it can be difficult for small undertakings to have the necessary working-environment expertise themselves.</td>
</tr>
<tr>
<td>EE</td>
<td>x</td>
<td></td>
<td></td>
<td>The problems are firstly related to the scarcity of financial possibilities for investing in the working environment, understanding of the need for the compliance with the requirements, lack of the required knowledge as well as high market prices of mandatory services (training courses for working environment representatives and first aid providers, medical examinations of workers, etc.) provided to the employer.</td>
</tr>
<tr>
<td>Country</td>
<td>Status</td>
<td>Note</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FI</td>
<td>x</td>
<td>Note: While Finland does not answer the question in the general section 1, the answer 'no' has been provided for the Framework Directive and all other OSH Directives (with one note for the Medical treatment on board vessels Directive).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR</td>
<td>x</td>
<td>… microenterprises and SMEs encounter difficulties when they try to meet their occupational-risk prevention obligations, chiefly for want of human, technical and financial resources, for want of information or, conversely, because they are bombarded with too much fragmented information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>x</td>
<td>The federal state supervisory authorities found that Directives with insufficiently detailed targets cause problems for SMEs. As the OSH Directives allow latitude for interpretation, the type and scope of precautions caused difficult discussions in some cases. Employers often ask if and when and to what extent the provisions of the Directives are binding in other EU Member States. Often SMEs have no overview of the transposition of the OSH Directives into national law, in terms of scope, complexity and application in selected areas. Often SMEs do not have well-trained OSH officers. There is little acceptance of the cost and time needed to implement OSH provisions. Compared with large companies and groups, SMEs generally have to pay handsomely for advice from experienced OSH experts. This makes it difficult and costly for SMEs to implement OSH standards. The DGB also complains of inadequate implementation of OSH obligations in SMEs, which it ascribes in part to inadequate specification in OSH rules or to inadequate supervision by the competent authorities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EL</td>
<td>x</td>
<td>The main difficulty faced by SMEs in following the Directive’s requirements is the lack of financial and human resources.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HU</td>
<td>x</td>
<td>A lot of SMEs, however, have cut back on their health and safety expenditure (laying off health and safety experts, cancelling service contracts, failure to carry out instrumental occupational hygiene tests of the work environment or the examination of the biological exposure/impact indicators, deficiencies of the supply of personal protective equipment and information etc.), which poses direct risks to the health and safety of workers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IE</td>
<td>x</td>
<td>A frustration among many small firms is that there appears to be little synergy between the current implementation of directives. There also appears to be little or no regard for the small business environment, where little or no account is taken for the additional administrative and compliance burden that is placed on them relative to larger organisations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>x</td>
<td>Note: Question not included</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LV</td>
<td>x</td>
<td>Information on the potential difficulties of SMEs in following the requirements of specific directives is not available in Latvia; however, according to the survey of work conditions and risks in Latvia all work safety measures are implemented by micro enterprises less often than the country average.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LT</td>
<td>x</td>
<td>Note: No clear response is provided, but for most individual Directives the answer is 'no'.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LU</td>
<td>x</td>
<td>Luxembourg has no information on any particular difficulties encountered by SMEs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT</td>
<td>x</td>
<td>Studies have shown that contrary to small enterprises, large companies are generally better equipped to have and develop safe work practices.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NL</td>
<td>x</td>
<td>Compliance in SMEs is lagging behind for each of the obligations. It also appears here that the degree of compliance is linked to the size of the undertaking.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>x</td>
<td>Difficulties in following the requirements of Directives regarding health and safety of workers in SMEs are linked primarily with a lack of sufficient financial</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
resources for the performance of obligations in respect of health and safety at work. Furthermore, in accordance with applicable provisions, employers who employ up to 100 workers are not obliged to create a health and safety at work service. (They can entrust the performance of health and safety at work tasks to a staff member already carrying out another job, or - in the event of absence of competent workers - to external specialists). As a result, at such employers premises some duties in the field of health and safety at work are not performed or their performance is not satisfactory.

<table>
<thead>
<tr>
<th>Country</th>
<th>Response</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>x</td>
<td>Yes. In general, small and micro-enterprises which represent about 90 % of companies in Portugal, do not, as a rule, have sufficient technical skills in the areas of health and safety at work, in the absence of a recognised culture of risk prevention.</td>
</tr>
<tr>
<td>RO</td>
<td>x</td>
<td>The main difficulties for SMEs are financial: insufficient funds to replace and modernise all work equipment, high cost of modern work equipment for handling load, and insufficient financial resources to conduct the medical examinations provided for in the Directive, etc.</td>
</tr>
<tr>
<td>SK</td>
<td>x</td>
<td>Substantive reasons for these problems, besides the current economic crisis, include the following factors: - they lack funding and do not have resources set aside to keep equipment in a safe and working condition, or to verify the safety of work equipment or other facilities used; - they do not employ their own occupational safety and health specialists, instead hiring external technical safety services; - it is up to them to choose a quality business authorised to provide safety technical services (they do not always select a quality outfit).</td>
</tr>
<tr>
<td>SI</td>
<td>x</td>
<td>Note: Comment is from q2.8: We can summarise, from the annual reports on the work of the Labour Inspectorate, that employers are too frequently unaware of the importance of ensuring health and safety at work; this applies in particular to those employers who entrust all health and safety at work tasks to outside contractors. When they sign contracts with an outside contractor, employers often seem to believe that they have done everything required to ensure health and safety at work.</td>
</tr>
<tr>
<td>ES</td>
<td>x</td>
<td>However, the negative aspects of the new framework’s introduction included the fact that the speed with which the Community legislation on health and safety at work was transposed into Spanish law, as well as the multitude and complexity of legislation on occupational risk prevention, make compliance difficult, particularly for small and medium-sized enterprises.</td>
</tr>
<tr>
<td>SE</td>
<td>x</td>
<td>During the investigations that have been carried out, small undertakings have, among other things, reported a lack of time for work environment management and a perception of the regulations as being complicated. The Swedish Work 22 (31) Environment Authority has found, through its inspections, some major shortcomings in knowledge of work environment management among small and medium-sized enterprises.</td>
</tr>
<tr>
<td>UK</td>
<td>x</td>
<td>Allocating sufficient time and resources to document the risk assessment, particularly where various activities are involved or they are complex or technical in nature. Accessing external occupational safety and health services and the cost of such services, particularly where assistance might be needed to evaluate and control multiple risks in the workplace.</td>
</tr>
</tbody>
</table>

**Total count**: 20 4 3
As the table shows, 20 MSs, or 74%, report that SMEs generally face more challenges trying to comply with OSH Directive requirements, while 4 MSs report that they do not find this to be the case. Highlighted challenges include: A lack of established OSH traditions, lack of managerial experience, lack of information, knowledge and training in SMEs, lack of equipment, lack of financial resources, lack of time, that SMEs are bombarded with excessive and fragmented information, that Directives are open for interpretation or lack clear direction, little synergy between the current implementation of directives, excessive administrative burdens etc., with the lack of financial, technical and human resources as the most cited challenges. However, the replies provided by each MS are of such varying magnitude, scope and content that further cross-MS comparison and quantifications cannot be made.

The lower level of overall compliance in micro establishments and SMEs is also a finding from several of the Directive-specific evaluations, such as the Construction Directive, the ATEX Directive, the Medical treatment on board vessels Directive and the Vibration Directive (ref. the respective Directive Reports). However, for some Directives there is little or no difference in compliance levels for SMEs compared to larger establishments. Examples include the Biological Agents Directive (for which compliance seems to depend on the core business of the establishments rather than their size) and AOR, for which challenges with compliance are not limited to SMEs (ref. BA and AOR Directive Reports).

In order to give an indication of the general tendency identified when assessing compliance of the Directives, we may highlight the Work Equipment Directive as representative of the majority. According to the National Implementation Reports for the Work Equipment Directive, in approximately 40% of MSs, smaller enterprises are considered to have greater difficulty in attaining compliance than larger enterprises (this also means that 60% of MSs do not report particular challenges to compliance for SMEs). The share is therefore somewhat lower for Directive-specific challenges for SMEs than MSs report for OSH compliance in general (40% compared to 74%). This propensity is mirrored in several NIRs for other Directives.

To further triangulate evidence, during the national studies we asked national stakeholders to express their view on whether there are in fact differences in levels of compliance depending on size of establishments, as some evidence suggests. The national stakeholders provided a score on a scale from 1-5 on the extent to which a given Directive had achieved behavioural impacts at the workplace level. Figure 4-3 shows the average aggregated scores made by the different national stakeholder groups for micro, small and large enterprises, respectively.
As the Figure shows, the overall tendency was largely corroborated during our data collection process. Though there are variances between Directives and Member States, it is an overall observation in the evaluation that national stakeholders assess compliance with Directive requirements as higher in large establishments when compared to SMEs and micro-establishments.

Concerning large establishments, all stakeholder groups found the collected OSH acquis to have had an equally high impact on large establishments’ behaviour, giving an average score of 4 (ranging from 3.9 to 4.1 across stakeholder groups).

The aggregated scores of the national stakeholders for the Directives’ impact on the behaviour of SMEs was somewhat lower than for larger establishments, with an average of 3.2. Interestingly, both employer and worker organisations, on average, agreed that the nationally transposed OSH legislation has had a medium impact on SMEs (3.0), while national authorities were more optimistic with an average score of 3.5. These findings provided by national stakeholders were corroborated during interviews with EU stakeholders, where 77 % of the interviewees were of the impression that the SMEs within their respective areas are struggling more with compliance than larger enterprises (ref. EU stakeholder interviews).

This trend is further emphasised when observing the scores of the national stakeholders for microenterprises across Directives. Microenterprises were on average thought to have changed behaviour to a limited extent, with an average score of 2.5. Once again, the national authorities were the most optimistic, although still reflecting a relatively low impact with an average score of 2.8. Employer and worker organisations both expressed considerable scepticism, providing an average score across Directives of 2.4 and 2.2, respectively. However, it should be noted that the
A few reasons were repeatedly used by national stakeholders during interviews as possible reasons for higher impacts in larger enterprises (many of which are also represented in the NIRs).

One reason mentioned during several stakeholder interviews is that large enterprises more often have dedicated OSH experts and/or departments that enable them to comply with international OSH standards (thereby ensuring workplace impacts). Another reason is that large establishments often have well-established safety and health cultures partly developed through the accessibility of internal programmes and procedures, which are often a result of more financial resources than smaller companies. Finally, according to national stakeholders, large enterprises are often particularly concerned about company image and about bad safety and health stories in the media.

According to stakeholder interviews (as well as the NIRs), the smaller impact of the OSH provisions on the behaviour of SMEs is most often a result of the SMEs, and in particular the microenterprises, facing difficulties in complying with transposed national legislation on occupational safety and health. Financial constraints were also during interviews mentioned as the key reason for not being able to comply with provisions and to employ and acquire necessary expertise, technical capacity and knowledge (cf. Section 4.7 (MQ7) on SMEs and micro establishments, which contains references and quotes from the NIRs in question). This finding is in line with the European Commission's Evaluation of the European Strategy 2007-2012 on health and safety at work (European Commission, 2013b).

Another reason often mentioned in interviews, and which is arguably closely related to a lack of financial resources, is a seemingly lower overall level of awareness of OSH issues as well as a lack of an internal safety and health culture within the smaller enterprises. Yet, a considerable number of stakeholders seemed to be of the opinion that the main problem was not in fact a lack of knowledge of the basic, overall risk factors, as workers and employers are quite often aware of the risk associated with, for instance, handling heavy loads, noise, asbestos etc. Rather, the main problem seemed to be a lack of technical knowledge of specific requirements, existing provisions and modes of minimising those risks.

During national and EU stakeholder interviews, some groups of enterprises were identified as having a lower level of compliance. These were start-up companies compared to experienced companies, as well as companies within economic sectors that generally have low incidence rates of occupational injuries compared to those with higher incidence rates.

In sum, the Flash Eurobarometer 398 on working conditions and data from the NIRs and stakeholder interviews point to the fact that micro establishments and SMEs experience more challenges implementing the OSH acquis, and generally have a lower level of compliance than large establishments. This is supported by ESENER data, which shows that larger establishments are more inclined to have a documented OSH policy than smaller companies (70 % of establishments with 10 to 19 employees compared to 90 % of large establishments with 500 or more employees).

The analysis of available data sources on OSH compliance, shows that ESENER is the only data source that provides specific compliance figures and gives an indication of compliance at the EU level from a quantitative perspective. Thus, in order to triangulate the ESENER data, national experts have analysed national compliance with the CPMs in the Country Summary Reports.
However, our experience from producing the national CRS was that most national authorities do not keep specific accounts of compliance with the provisions in the individual Directives. Furthermore, many national authorities were reluctant to make concrete statements about levels of compliance during interviews as they considered their knowledge on these specificities to be limited.

Despite these latter challenges in assessing national sources, in order to supplement compliance data at the EU level gathered through ESENER, for each CPM that we analyse below, we will present comparisons drawing on information provided by national experts in the CSRs and focusing solely on national sources (i.e. excluding ESENER data, unless this data was integrated in the overall assessment of compliance) \(^{(37)}\). Figure 4-4 demonstrates the differences in MS compliance with the requirement to conduct risk assessments according to ESENER, as opposed to compliance according to national data sources.

\[\text{Figure 4-4} \quad \text{Comparison of national and 2009 ESENER compliance data (% of establishments)}\]

As shown, our analysis reveals a significant difference between the 2009 ESENER data and the findings from national data sources, in that levels of compliance estimated in the CSRs are somewhat lower in comparison to the 2009 ESENER data. Direct comparison between these figures is not always possible, given the fact that the CSRs often provide ranges, rather than specific figures, to estimate compliance. Yet, for the purpose of the present comparison, we have used the highest value indicated by the national experts. Therefore, the observed difference in compliance level is in reality likely to be even higher. This finding does not devaluate the use of ESENER in general, but indicates that ESENER data may, particularly in some MSs, point towards a higher level of compliance than experienced at the MS level and measured by national sources.

\(^{(37)}\) In those cases where multiple assessments were provided in the CSRs without integrating the data provided, the data were integrated subsequently for this analysis. The detailed data can be found in the CSRs.
In order to shed further light on overall compliance levels, in the following section, we assess the influence of employee representation on overall OSH compliance in the EU-27.

The influence of employee representatives on OSH compliance

The fundamental assumption behind the assessment of the impact of employee representatives on OSH compliance is that employee representation positively influences the communication between workers and management and increases awareness of OSH issues. Safety and health representatives thereby facilitate compliance with the OSH acquis in establishments.

First, we thus wish to establish the extent to which establishments have an internal safety and health representative. This information is provided in Figure 4-5 below by size of establishment.

As the Figure shows, 67% of all surveyed establishments in 2009 had an OSH employee representative. This figure increases considerably with the size of the establishment from 51% in establishments with 10 to 19 employees to a large majority of 88% in establishments with more than 500 employees. In comparison, according to ESENER-2, health and safety representation is the most frequently reported form of employee representation, in 2013 used in 58% of establishments in the EU-28, compared to other forms of employee representation, such as trade unions. However, due to the increased survey population in ESENER-2 (i.e. the inclusion of micro establishments with 5-9 employees), it is not currently possible to establish a trend. We thus cannot assess whether the proportion of organisations with safety and health representatives is in fact increasing or declining.

Furthermore, ESENER-2 data show that H&S representation is most prevalent among establishments in education, human health and social work activities (67%), manufacturing (64%) and public administration (59%). Notably, these findings are largely driven by establishment size (EU-OSHA, 2015), which further indicates that compliance is higher in larger establishments.
To test the synthesis pertaining to the influence of safety and health representatives on OSH compliance, we examine two indicators, i.e. prerequisites, for OSH compliance in Figure 4-6 and Figure 4-7 below. Figure 4-6 compares the proportion of establishments with an employee representative that has a documented policy, established management system or action plan to the proportion of establishments without an employee representative that has an OSH policy plan.

**Figure 4-6  Influence of employee representation on compliance (OSH policy plan)**

The Figure illustrates that smaller businesses generally tend to have a documented OSH policy to a lesser extent than large establishments. It also shows that all establishments are significantly more inclined to have a documented OSH policy if they have an appointed safety and health representative (86% of all establishments) than if they do not (63% of all establishments). We may also deduce that the smaller the size of an establishment, the more the existence of a safety and health representative positively influences the level of compliance. Of establishments with 10-19 employees that have an assigned employee representative, 83% also have a documented OSH policy, while only 56% of the establishments of the same size but without a safety and health representative has a documented OSH policy plan.

**Figure 4-7** makes the same comparison, but measures establishments that regularly perform safety and health checks as part of a risk assessment or similar measure, rather than a documented OSH policy.
Figure 4-7  Influence of employee representation on compliance (regular safety checks)

Source:  ESENER, MM161 (by size of establishment) and MM355 combined
Note:  Figure shows those establishments with and without a safety and health representative that have answered 'yes' to the question 'Are workplaces in your establishment regularly checked for safety and health as part of a risk assessment or similar measure?' by size of establishment.

As shown, the tendency is the same for the indicator pertaining to regular safety and health checks, although to a lesser extent, as compliance with this indicator is generally higher. On average, 93 % of all establishments with an employee representative perform safety and health checks on a regular basis, while 83 % of establishments without an employee representative do. This difference is highest for the establishments with 10-19 employees (90 % and 77 %, respectively) compared to large establishments with more than 500 employees of which the large majority performs regular safety and health checks regardless of whether they have an assigned safety and health representative or not (97 % as opposed to 94 %).

To illustrate the consistency of this finding, Figure 4-8 shows the extent to which establishments with employee representation implement other OSH measures compared to establishments without employee representatives. Please note that the two variables discussed above are inserted as the first two variables in the Figure below.
**Figure 4-8** Health and safety management measures, by existence of a formal employee representation, % establishments, EU27

![Bar chart showing health and safety management measures](image)

Source: EU-OSHA (2014b) – ESENER (2009)

The Figure clearly illustrates that while employee representatives have noticeable influence on the proportion of establishments that perform risk assessments, they have an even more pronounced impact on other key requirements and/or OSH measures. ESENER data thus confirm the correlation between the existence of an OSH employee representative and OSH compliance, particularly in smaller enterprises.

Compliance in the public sector compared to the private sector

In this section, we briefly assess the difference in compliance between establishments in the public and private sector.

Figure 4-9 shows a number of indicators for compliance extracted from the ESENER survey. It compares the results provided for establishments in the public sector to those in the private sector. The indicators refer to the CPMs and include the share of establishments that are regularly checked for safety and health as part of a risk assessment or similar measures according to management and employee representatives, respectively (the first two sets of columns). Furthermore, the figure shows compliance indicators for information, consultation and health surveillance (see exact survey questions in the note below the Figure). Please note that indicators for the CPMs ‘preventive and protective services’ and ‘training of workers’ are not readily available in the survey.
Figure 4-9  Compliance with CPMs in the public sector compared to the private sector

As shown in the Figure, for each CPM the share of private and the public sector establishments that comply with the OSH acquis is more or less identical (with 2-3 percentage points in favour of the private sector for all indicators). The same is true for the extent to which follow-up actions are performed upon the identification of risk factors in the two sectors, respectively (90.3 % in the public sector vs. 91.8 % in the private sector). This is likely a direct result of the fact that only five Member States (AT, CZ, FR, LU and PT) have implemented separate, distinct OSH legislation for the public and the private sector (ref. 4.1 - MQ1), and of these, the legislation governing the public sector in AT and LU, respectively, largely refers back to the private body legislation.

On the other hand, the CSRs highlight multiple differences in compliance levels between the private and the public sector, although no unambiguous trend can be extracted. These differences are most notable in relation to the CPM consultation of workers. In Estonia, Germany, Italy, Poland and Sweden, the compliance levels with the CPM are reported to be higher in the public than in the private sector. In contrast, in Greece and to a certain extent in Portugal (as regards the appointment of employee representatives) the situation is reversed. Data to further quantify these conclusions are, however, missing.

As regards other CPMs, it is difficult to establish any trend at all based on national data reported in the CSRs. A few CSRs indicate higher levels of compliance in the public sector with respect to risk assessment (Netherlands, Poland and Slovakia) and training of workers (the Netherlands, United Kingdom). However, overall, the national data does not provide evidence to conclude that
compliance generally tend to be neither higher nor lower in the public sector compared to the private sector.

Conclusions on overall compliance

As illustrated in Table 4-10, quantitative evidence reveal a moderate to good overall level of compliance across the EU and across establishment sizes.

Table 4-10  Evidence table: Overall OSH compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU stakeholder interviews</td>
<td>Compliance according to EU stakeholders, score 1-5</td>
<td>3.65</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of all establishments</td>
<td>79 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER-2, Q166</td>
<td>Existence of a safety and health representative, % of all establishments</td>
<td>58 %</td>
<td>D</td>
</tr>
</tbody>
</table>

Conclusion for overall OSH, all establishment sizes: Moderate to good overall quantitative compliance

Source:  See column 1, and COWI evaluation team

However, compliance varies significantly from Member State to Member State. For example, within the group of establishments with 10 to 19 employees, Greece has the lowest share of establishments that have an OSH policy plan (33 % - very poor overall quantitative compliance), while, for the same group in the UK, ESENER reported a share of 98 %. For the group with large establishments, Poland has the lowest share (71 %), while 100 % of the managers interviewed in Estonia, Latvia, Slovakia, Sweden and United Kingdom state that they have an OSH policy or action plan (ESENER; 2009, MM155).

There is no indication that compliance is measurably higher in the public sector compared to the private sector.

Table 4-11 shows the analysed quantitative data on overall compliance by size of establishment.

Table 4-11  Evidence table: Overall OSH compliance, by size of establishment

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment size not specified</td>
<td>Proportion of interviewees who expressed that SMEs within their respective areas are struggling more with compliance than larger enterprises</td>
<td>77 %</td>
<td>-</td>
</tr>
<tr>
<td>NIR data</td>
<td>Proportion of the 27 MSs that have explicitly expressed that compliance is more challenging to SMEs compared to large establishments</td>
<td>70 %</td>
<td>-</td>
</tr>
<tr>
<td>&lt;10 employees (micro establishments)</td>
<td>Extent to which national legislation transposing the Directive(s) has affected establishments’ behaviour for securing of OSH, score from 1-5</td>
<td>2.5</td>
<td>D</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of all establishments</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
**EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES**

<table>
<thead>
<tr>
<th>Establishment Size</th>
<th>National Stakeholder Interviews</th>
<th>Extent to which national legislation transposing the Directive(s) has affected establishments’ behaviour for securing of OSH, score from 1-5</th>
<th>Conclusion for establishments</th>
<th>Source: See column 1, and COWI evaluation team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro establishments (≤ 9 employees)</td>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>70 %</td>
<td>B</td>
</tr>
<tr>
<td>Micro establishments (≤ 9 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>51 %</td>
<td>C</td>
</tr>
<tr>
<td>Conclusion for micro establishments: Cannot be assessed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Small establishments (10 to 19 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>76 %</td>
<td>B</td>
</tr>
<tr>
<td>Small establishments (10 to 19 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>63 %</td>
<td>C</td>
</tr>
<tr>
<td>Conclusion for establishments with 10 to 19 employees: Poor overall quantitative compliance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Small establishments (20 to 49 employees)</td>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>84 %</td>
<td>B</td>
</tr>
<tr>
<td>Small establishments (20 to 49 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>75 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 20 to 49 employees: Moderate overall quantitative compliance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Medium establishments (50 to 249 employees)</td>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>88 %</td>
<td>B</td>
</tr>
<tr>
<td>Medium establishments (50 to 249 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>83 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 50 to 249 employees: Good overall quantitative compliance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Large establishments (250 to 499 employees)</td>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>90 %</td>
<td>A</td>
</tr>
<tr>
<td>Large establishments (250 to 499 employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>88 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 250 to 499 employees: Good overall quantitative compliance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Very large establishments (500+ employees)</td>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of establishments</td>
<td>90 %</td>
<td>A</td>
</tr>
<tr>
<td>Very large establishments (500+ employees)</td>
<td>ESENER, MM355</td>
<td>Existence of a safety and health representative, % of establishments</td>
<td>88 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 500+ employees: Very good overall quantitative compliance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Though there are variances between Directives and Member States, it is an overall observation in the evaluation that both EU and national stakeholders assess compliance with Directive requirements as higher in large establishments compared to SMEs and micro-establishments. This is supported by the Flash Eurobarometer and, as shown in the Table, by ESENER data on compliance. An aggregated interpretation of the findings on quantitative compliance shows that overall compliance increases with the size of the establishment:
Micro establishments: Cannot be assessed (limited evidence points to poor overall quantitative compliance)

10 to 19 employees: Poor overall quantitative compliance

20 to 49 employees: Moderate overall quantitative compliance

50 to 249 employees: Good overall quantitative compliance

250 to 499 employees: Good overall quantitative compliance

500+ employees: Very good overall quantitative compliance

The smaller level of compliance in SMEs corresponds to the findings for several Directives, such as the Construction Directive, the ATEX Directive, the Medical treatment on board vessels Directive and the Vibration Directive. However, in contrast, some Directives have not resulted in differences in compliance levels for SMEs compared to larger establishments (e.g. Biological Agents Directive and the AOR Directive). This propensity is mirrored in several National Implementation Reports, where Member States have elaborated on difficulties faced by SMEs in implementing Directives, while several MSs also emphasised the opposite (ref. e.g. the National Implementation Reports), namely that they have no evidence that SMEs experience greater difficulties than larger enterprises.

Segregating quantitative data by establishment size into establishments with and without a safety and health representative shows that this lower level of compliance in smaller establishments to a large extent is coupled with the lack of a safety and health representative (Table 4-12).

Table 4-12 Evidence table: Overall OSH compliance, by size of establishment and OSH employee representation

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding Companies without OSH representative</th>
<th>Category</th>
<th>Finding Companies with OSH representative</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 19 employees (small establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>56 %</td>
<td>D</td>
<td>83 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>77 %</td>
<td>B</td>
<td>90 %</td>
<td>A</td>
</tr>
<tr>
<td>20 to 49 employees (small establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>63 %</td>
<td>C</td>
<td>85 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>83 %</td>
<td>B</td>
<td>93 %</td>
<td>A</td>
</tr>
<tr>
<td>50 to 249 employees (medium establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>71 %</td>
<td>C</td>
<td>87 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>89 %</td>
<td>B</td>
<td>94 %</td>
<td>A</td>
</tr>
<tr>
<td>250 to 499 employees (large establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>80 %</td>
<td>B</td>
<td>89 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>94 %</td>
<td>A</td>
<td>97 %</td>
<td>A</td>
</tr>
<tr>
<td>500+ employees (large establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>76 %</td>
<td>B</td>
<td>91 %</td>
<td>A</td>
</tr>
</tbody>
</table>
As established above, safety and health representation is considerably less frequent in small establishments compared to larger establishments (e.g. only 51 % of establishments with 10 to 19 employees in 2009 had an internal OSH representative). As the table shows, even small establishments with employee representatives have a good or very good overall quantitative compliance, while the corresponding group of establishments without safety and health representation have poor to moderate quantitative compliance.

Thus, although it is positive that 58 % of surveyed establishments have H&S representatives, this gap of 42 % constitutes significant room and potential for improvement of overall OSH compliance, particularly in SMEs. There is a considerable lack of representation in some sectors, particularly in the Agriculture, forestry and fishing sector. This is worrying because the Agriculture, forestry and fishing sector is a high-risk sector in the context of occupational safety and health.

### 4.3.3 Compliance with CPMs

This evaluation has looked into levels of compliance with common processes and mechanisms and the key requirements of all Directives in order to obtain a better understanding of the effects of the Directives. The underlying rationale is that if the requirements of the Directives are being complied with, this also indicates that the implementation of the Directives is a key explanatory factor in relation to possible health and safety outcomes. As Directive-specific key requirements are assessed at the EU level within the Directive Reports, the following subsections contain conclusions of overall compliance levels with the CPMs that transcend all OSH Directives and which are transposed through the Framework Directive, namely:

- Risk assessment
- Preventive and protective services
- Training of workers
- Information for workers
- Consultation of workers
- Health surveillance

#### Risk assessment

The first CPM of the Framework Directive, and the cornerstone of implementation of the OSH acquis, is the requirement that enterprises shall regularly conduct risk assessments. The extent to which establishments abide by this requirement is therefore a key indicator for the level of compliance and was therefore assessed in the section on overall compliance above in the context of the influence on employee representatives on OSH compliance. In Figure 4-10 below, this indicator is depicted by establishment size (2009 data), and in Figure 4-11 below, we look at risk assessment compliance at the MS level (2013 data).
Figure 4-10 Workplaces regularly checked for safety and health as part of a risk assessment or similar measure, by size of establishment

![Graph showing percentage of workplaces regularly checked for safety and health]

Source: ESENER (2009), MM161, by size of establishment

Note: Share of managers that replied ‘yes’ to the question: Are workplaces in your establishment regularly checked for safety and health as part of a risk assessment or similar measure?

The 2009 ESENER survey reveals that 83% of interviewed EU-27 enterprises with 10 to 19 employees and 96% of establishments with 500 employees or more replied that they perform risk assessments on a regular basis (i.e. a total of 88% of all establishments in EU-27). Thus, as established in the examination of the influence of safety and health representatives above, we see a clear correlation between the share of establishments that regularly undertake risk assessments and the number of employees.

However, performing a risk assessment does not alone ensure compliance. It is a prerequisite that necessary follow-up action is taken when a risk assessment or workplace check identifies a need for action in an establishment. Notably, this distinction should not be confused with the qualitative aspect of compliance described in the introduction to this mapping question. This elaboration still does not provide insight into the quality of the safety and health check that was performed in the enterprise, but measures the quantity of those establishments that perform a safety and health check during which a risk was discovered, and who also do the required follow-up action.

According to surveyed employee representatives, this normally happens in 91% of establishments, while needed follow-up action is only partly taken in 5% of the represented workplaces (ESENER, 2009, ER210). According to ESENER data, it is thus very rare that follow-up action is not taken once a risk has been identified (2% in micros, SMEs and large establishments). SMEs are slightly more inclined to take necessary action (93%) compared to large establishments (90%), which more often then takes only part action (7% of large establishments compared to 3% for SMEs).

As establishments are not in compliance with the OSH acquis if they neglect to take necessary follow-up action after having identified a hazard, we may subtract the proportion of the establishments that do not take necessary action from the proportion of establishments that perform risk assessments on a regular basis to get a more realistic compliance rate. This is
calculated and illustrated for each size of establishment in the Evidence Table 4-13 in the conclusion section.

In comparison, Figure 4-11 shows the indicator at the MS level by use of the recent 2013 ESENER-2 data. The first, coloured section of the bars illustrates the share of total performed risk assessments within a given MS that is mainly conducted by internal staff rather than external providers.

Figure 4-11 Workplace risk assessments carried out regularly and risk assessments mainly conducted by internal staff, by country (% establishments).

Source: EU-OSHA (2015), ESENER-2
Note: EU-28, data on risk assessments mainly conducted by internal staff asked to those establishments that report carrying out risk assessments regularly. Percentages in the chart are recalculated with respect to the total base of all establishments.

According to ESENER-2, 76 % of all enterprises in EU-28 carry out risk assessments on a regular basis. The 2013 compliance levels are thus somewhat lower than in 2009. Notably, the change of
survey population to include establishments with 5 to 9 employees is likely to account for a significant share of the difference in compliance figures (if not all) \(^{(38)}\).

Figure 4-11 thus shows that compliance varies considerably from MS to MS, ranging from 94 % of establishments in Italy and Slovenia down to 37 % in Luxembourg (EU-OSHA, 2015). Five MSs have very good quantitative compliance with the CPM of risk assessments [IT, SI, DK, UK and BG] and Luxembourg is the only MS with very poor quantitative compliance.

However, in the Country Summary Reports, national experts have provided estimates of compliance based on available data. Comparison of such national compliance data across MSs reveals that national data tend to present substantially lower compliance figures than ESENER data (cf. the CSRs and EU-OSHA, 2013c). For instance, a national survey from Latvia from 2011 indicates that a full risk assessment was made in only 27 % of enterprises with 1–10 employees, 54.8 % with 11–49 employees, 65.2 % with 50–249 employees and in 55.2 % of establishments with 250 and more employees (Vanadzins and Matisane, 2011, quoted in EU-OSHA, 2013c). According to ESENER-2, approximately 80 % of all Latvian establishments perform risk assessments on a regular basis.

Figure 4-12 thus compares the ESENER data to the compliance levels estimated by national experts based on national, non-ESENER, data sources. The Figure groups the MSs into five categories of compliance: Very high, high, medium, low, very low and a sixth group consisting of those MSs with no national, non-ESENER data upon which to base estimations.

\(^{(38)}\) Please note that Croatia, who joined the EU on 1 July 2013, raises the EU-average and that this enlargement therefore does not explain the decrease in the relative share of enterprises that perform risk assessments on a regular basis. Another explanation may be that in 2008 EU-OSHA performed a campaign on risk assessment in cooperation with all Member States. This may have caused an immediate rise in the share of enterprises performing risk assessment. Yet, while this fact could have resulted in some decrease in compliance as the effect of the campaign gradually wore of, it is not likely to have caused a decrease of this scale.
As illustrated in the figure above, in a majority of the Member States, compliance with the CPM is medium or high, although national experts report major differences between large establishments, SMEs and microenterprises. In those Member States where breakdown according to the size of establishment is available, compliance levels range from very low/low (micro establishments) to very high, nearing 100 %, in large companies.

In an effort to triangulate these differing findings and approximate the most realist and actual levels of compliance in the MSs, we commenced mapping the reports from the National Implementation Reports. The NIRs contain a required sub-headline pertaining directly to the implementation of risk assessments in the MSs called, ‘2.1 Assessment of risks at the workplace and definition of corresponding preventive and protective measures.’ However, the replies provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.

Looking at the Directive-specific evaluations, it is concluded in the evaluation of the Framework Directive that, despite variations between MSs, risk assessments are generally regarded by both national and EU-level stakeholders as the most important CPM for applying a risk prevention culture in establishments, i.e. for ensuring compliance with OSH acquis (ref. Framework Directive Report). That being said, some compliance issues are not related to MSs, but rather to the provisions and characteristics of individual Directives. For instance, the Pregnant/breastfeeding workers Directive has given rise to some shortcomings in compliance at the enterprise level, mainly because employers find it difficult to identify special risks for pregnant and breastfeeding women (i.e. to include this aspect into the risk assessment), and secondly, because they find it difficult subsequently to identify suitable work accommodations (ref. Pregnant/breastfeeding workers Directive).

Similarly, in the context of the Fishing vessels Directive, according to national stakeholders in the marine sector, risk assessments tend to be outdated or missing. Many national stakeholders explain that the general requirements for risk assessments are not suited for vessels and that
specific procedures/provisions for risk assessments should be established, which may deviate from or add to those of the Framework Directive (ref. Fishing vessels Directive Report). Similar conclusions pointing to a need for Directive-specific requirements to the risk assessment procedure has also been reached in other Directive Reports (ref. e.g. Biological Agents Report, Vibrations Report, the AOR Report and the Mines and Quarries Report).

In sum, any one collected conclusion on the level of compliance with risk assessments at the EU level will need to constitute a median of collected data, while containing substantial variances between MSs and sizes of establishments. Before drawing together the various data strings in the conclusions on risk assessment compliance below, we shall briefly outline the use of internally and externally performed risk assessments in the MSs.

We can deduct from Figure 4-11 that the share of risk assessments being performed by internal staff varies considerably between MSs. According to ESENER-2, the highest share of internally performed risk assessments is found in Denmark (76 % of establishments), the United Kingdom (68 %) and Sweden (66 %). The lowest shares are found in Slovenia (7 %), Croatia (9 %) and Spain (11 %). Overall, there is a tendency that in Northern and Western-European MSs, risk assessments are more often performed by internal staff than in southern and Eastern-European MSs. It should be kept in mind that some MSs may have a legal obligation to contract OSH services to complete risk assessments on the behalf of management (EU-OSHA, 2015).

To expand on the mapping of the use of internally or externally performed risk assessments, Figure 4-13 below shows the correlation between establishment size and the use of external risk assessment services.

Figure 4-13 Risk assessments performed by internal staff, external providers or both, by size of establishment

As the figure shows, ESENER (2009) data clearly shows that the share of risk assessments being performed by internal staff increases along with the size of the establishment – a correlation that is confirmed in the recent ESENER-2 data (EU-OSHA, 2015). This correlation reflects the fact that large enterprises have the necessary human resources to perform risk assessments in-house, while micro enterprises and SMEs are forced to acquire the service from external providers, while
having less financial resources at their disposal (39). A possible consequence of this correlation is that, while risk assessments seem to be regularly performed in SMEs to a rather high extent, they may not have the same impact as in larger establishments, nor to the same extent result in an OSH management approach that is integral to the particular business and priorities of the SME (EU-OSHA, 2013c).

Finally, Figure 4-14 below shows the 24% percent of surveyed enterprises from ESENER-2 that did not perform risk assessments on a regular basis and their reported reasons for not doing so, by size of establishment.

*Figure 4-14 Reasons why workplace risk assessments are not carried out regularly, by establishment size (% establishments, EU-28).*

Source: EU-OSHA (2015), ESENER-2
Note: The Figure shows the shares within establishments where risk assessment or similar measures are not carried out, EU-27.

As illustrated, for all enterprise sizes, the most cited reasons are the fact that hazards and risks are already known and that establishments believe themselves to have no major problems. This is particularly mentioned as the main reasons in micro businesses with 5-9 employees with 84% stating that they already know the existing hazards and 82% of establishments stating that (consequently) they have no major problems. In comparison, 59% of establishments with more than 250 employees believe that no major OSH problems exist at the workplace, which indicates a high level of risk awareness in larger establishments. However, these findings clearly raise the question whether these SMEs actually have fewer problems, or they are simply less aware of workplace risks (EU-OSHA, 2015).

Furthermore, in extension of the above analysis, it is interesting to note that the smallest enterprises, which are most likely to acquire external assistance for the performance of risk assessments, are the least inclined to report a lack of necessary expertise as the main reason for not conducting a risk assessment. Likewise, according to ESENER-2 data, SMEs themselves do not seem to find that the risk assessment procedure is too burdensome (or at least, this is not the overall reason for not conducting a risk assessment). This data seemingly contradicts the findings from the national stakeholder interviews and our mapping of the NIRs, as discussed in Section 4.3.2 on overall compliance (see also MQ7, Section 4.7).

(39) In an attempt to remedy this problem, EU-OSHA has launched a tool called Online interactive Risk Assessment (OiRA) to help SMEs perform risk assessments online (cf. MQ4 below).
It should be noted, however, that there is considerable opposition to suggestions of exempting SMEs from this provision. For example, the European social partners in the construction industry (namely the European Federation of Building and Woodworkers and the European Construction Industry Federation), representing a particularly dangerous sector from an OSH perspective, have published a position paper which stated that ‘the adoption of the recommendations as proposed by the HLG [High Level Group on Administrative Burdens] could endanger one of the main EU social policy pillars, namely occupational health and safety’ (41). It criticised in particular the recommendation to exempt certain companies from written risk assessment procedures, explaining that the risk level in small firms in the construction sector is by no means lower than that in larger companies and that, since the construction sector is characterised by firms of different sizes working together, this distinction would de facto mean a discrimination with regard to the right to physical integrity between workers of small and larger companies.

However, to perhaps balance that view slightly, in the Communication from the Commission on better regulation for better results, published in 2015 (42), the Commission states that ‘many EU rules are as pertinent for smaller business as they are for large companies: a worker business making artisan products have the same right to health and safety protection as someone on the shop floor in a huge factory. But if the legislative framework is too complicated, too burdensome, or too bureaucratic, the risk is that smaller businesses are simply not able to follow it – so workers are not protected’.

This therefore raises the interesting philosophical question as to whether it is better to make less onerous demands which, whilst possibly less effective have more prospect of being complied with or should the principle of asking for the best be adhered to, even if that results in some not responding at all?

Conclusions on risk assessment compliance

The first CPM of the Framework Directive, and the cornerstone of implementation of the OSH acquis, is the requirement that enterprises shall regularly conduct risk assessments. In the context of SMEs, we find that the share of establishments that regularly undertake risk assessments increases with the size of establishments as illustrated in Table 4-13. This correlation remains, when compliance rates are adjusted for the fact that small- and medium-sized establishments are slightly more inclined to take the necessary follow-up actions after having identified a risk during a health and safety check, which is a prerequisite for compliance. Generally, most establishments, independent of size, take the necessary follow-up actions, once risks have been identified (91 %). However, SMEs are slightly more likely to take full action (as opposed to part action), while larger establishments seem to take more actions of different types than SMEs.

(40) The group advises the Commission on how to reduce administrative burdens linked to its legislation. Examples include recommendations concerning the facilitation of electronic invoicing and the exemption of micro enterprises from EU accounting rules


Table 4-13  Evidence table: Quantitative risk assessment compliance, in general and by size of establishment

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment size not specified</td>
<td>Safety and health checks conducted on a regular basis, % of all establishments</td>
<td>76 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER-2, Q250</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>83 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Necessary follow-up action taken when risks have been identified, % of establishments of same size that perform risk assessments</td>
<td>93 %</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishments that perform regular safety and health checks and subsequently take necessary action, % of all establishments of same size</td>
<td>77 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 10 to 19 employees: Good quantitative compliance – risk assessments</td>
<td></td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>20 to 49 employees (small establishments)</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>88 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Necessary follow-up action taken when risks have been identified, % of establishments of same size that perform risk assessments</td>
<td>92 %</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishments that perform regular safety and health checks and subsequently take necessary action, % of all establishments of same size</td>
<td>81 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 20 to 49 employees: Good quantitative compliance – risk assessments</td>
<td></td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>50 to 249 employees (medium establishments)</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>92 %</td>
<td>A</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Necessary follow-up action taken when risks have been identified, % of establishments of same size that perform risk assessments</td>
<td>91 %</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishments that perform regular safety and health checks and subsequently take necessary action, % of all establishments of same size</td>
<td>84 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 50 to 249 employees: Good quantitative compliance – risk assessments</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>250 to 499 employees (large establishments)</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>96 %</td>
<td>A</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Necessary follow-up action taken when risks have been identified, % of establishments of same size that perform risk assessments</td>
<td>91 %</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishments that perform regular safety and health checks and subsequently take necessary action, % of all establishments of same size</td>
<td>87 %</td>
<td>B</td>
</tr>
<tr>
<td>Conclusion for establishments with 250 to 499 employees: Very good quantitative compliance – risk assessments</td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>500+ employees (large establishments)</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>96 %</td>
<td>A</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Necessary follow-up action taken when risks have been identified, % of establishments of same size that perform risk assessments</td>
<td>90 %</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishments that perform regular safety and health checks and subsequently take necessary action, % of all establishments of same size</td>
<td>86 %</td>
<td>B</td>
</tr>
</tbody>
</table>
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>Establishments of same size</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conclusion for establishments with 500+ employees:</strong> Very good quantitative compliance – risk assessments</td>
<td></td>
</tr>
</tbody>
</table>

Source: See column 1, and COWI evaluation team

Note: Compliance calculated by multiplying MM161 value and ER210 value. Notably, this method provides an estimation as the two survey populations are not identical (one is management and the other is employee representatives). The ER210 values are likely too high, as it is plausible to assume that establishments without safety and health representatives would be less likely to take necessary follow-up action, wherefore actual quantitative compliance is likely to be lower.

No data for micro establishments.

As the Table shows, quantitative compliance with the requirement to perform risk assessments is generally good to very good. The most common reasons for not conducting risk assessments on a regular basis are the fact that hazards and risks are already known and that establishments believe themselves to have no major problems. This is particularly true for the smallest establishments.

ESENER (2009) data also clearly shows that the share of risk assessments being performed by internal staff increases along with the size of the establishment – a correlation that is confirmed in the recent ESENER-2 data (EU-OSHA, 2015). The use of internal staff compared to external staff varies considerably between MSs. According to ESENER-2, the highest share of internally performed risk assessments is found in Denmark (76 % of establishments), the United Kingdom (68 %) and Sweden (66 %). The lowest shares are found in Slovenia (7 %), Croatia (9 %) and Spain (11 %). Overall, there is a tendency that in Northern and Western-European MSs, risk assessments are more often performed by internal staff than in southern and Eastern-European MSs.

Some challenges with compliance stemming from the provisions and characteristics of individual Directives have also been identified. For instance, the Pregnant/breastfeeding workers Directive has given rise to some shortcomings in compliance at the enterprise level, mainly because employers find it difficult to identify special risks for pregnant and breastfeeding women (i.e. to include this aspect into the risk assessment), and secondly, because they find it difficult subsequently to identify suitable work accommodations under the Directive.

On the overall level, according to ESENER-2, 76 % of all enterprises in EU-28 carry out risk assessments on a regular basis, although compliance varies considerable from MS to MS ranging from 94 % of establishments in Italy and Slovenia down to 37 % in Luxembourg. In Table 4-14, we have summarised quantitative compliance levels for all MSs based on ESENER-2 data (cf. Figure 4-9).
Table 4-14  Quantitative compliance with risk assessment, by MS, based on ESENER-2

<table>
<thead>
<tr>
<th>Assessed compliance</th>
<th>Interpretation</th>
<th>Compliance category</th>
<th>MSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 % - 100 %</td>
<td>Very good quantitative compliance</td>
<td>A</td>
<td>IT, SI, DK, UK, BG [5]</td>
</tr>
<tr>
<td>75 % - 89 %</td>
<td>Good quantitative compliance</td>
<td>B</td>
<td>ES, RO, LV, SE, CZ, HU, PL, PT, LT [9]</td>
</tr>
<tr>
<td>60 % - 74 %</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
<td>FI, NL, IE, EE, BE, DE, MT [7]</td>
</tr>
<tr>
<td>40 % - 59 %</td>
<td>Poor quantitative compliance</td>
<td>D</td>
<td>SK, AT, FR, CY, EL [5]</td>
</tr>
<tr>
<td>0 % - 39 %</td>
<td>Very poor quantitative compliance</td>
<td>E</td>
<td>LU [1]</td>
</tr>
</tbody>
</table>

Source: EU-OSHA (2015), ESENER-2, COWI analysis

However, as national, non-ESENER data consistently places compliance with the requirement to perform risk assessments at a lower level than ESENER-2 across EU-27, Figure 4-15 compares national data extracted from the CSRs to the ESENER-2 findings.

Figure 4-15  Quantitative risk assessment compliance, combined assessment

The Figure illustrates the count of MSs that comply with the risk assessment requirement to each of the five levels. Based on the count and level of each MS, an average ESENER-2 compliance level across MSs has been calculated to correspond to good quantitative compliance (with an average value of 4.07, where 4.0 equals good compliance). In comparison, CSR data has been calculated to correspond to moderate quantitative compliance (with a value of 3.04, where 3.0 equals moderate compliance). The grey area just highlights the most realistic level of compliance in establishments across MSs, based on an aggregated assessment of all available quantitative data.

In sum, we thus conclude that from a quantitative perspective, compliance with the requirement to perform risk assessments ranges from moderate to good compliance (illustrated by the grey square...
in the figure above), with large establishments in some MSs being in very good compliance and small establishments in other MSs displaying poor compliance.

A total average calculated based on national ESENER-2 data and the calculated CSR data equals 3.56, which according to our interpretation Table 4-8, corresponds to category B, i.e. **good quantitative compliance** with the requirement to perform risk assessments across MSs and establishment sizes.

**Preventative and protective services**

The second CPM concerns the obligation of employers to designate one or more people to carry out activities related to the protection and prevention of occupational risks (in-house competencies or externally contracted). Very little data exist on this point, as MSs, as mentioned, do not monitor the level of establishment compliance.

However, during the 2009 ESENER survey, managements were asked to define which of the following health and safety service they used in their establishments: An occupational health doctor, a safety expert, a psychologist, an ergonomics expert, a general health and safety consultant or none of the above. If we isolate the share of managers who reported to have none of the health and safety services assigned to the establishment, which were provided as response options, we get an indication of the minimum level of non-compliance with the CPM of preventive and protective services. This data is presented in Figure 4-16 below by size of establishments.

*Figure 4-16 Establishments with no preventive and protective services (non-compliance), by size of establishment*

![Figure 4-16 Establishments with no preventive and protective services (non-compliance), by size of establishment](source: EU-OSHA: ESENER (2009) – MM150)

**Note:** Figure shows the proportion of managers, who replied to have none of the provided options for the question: ‘What health and safety services do you use, be it in-house or contracted externally?’ by size of establishments.

This Figure shows that indicative non-compliance across all establishments is 5.32 % and that it increases as the number of employees drops. Interestingly, less than 1 % of managers in establishments with more than 250 employees replied with no preventive and protective services.
However, some caution should be made when interpreting these proportions as equal to non-compliance, because managers have not in fact stated during the interview that they have no preventive and protective services all together. However, if we build on the assumption that the proportion of establishments that have another health and safety service assigned to the establishment without also having any of the above is very small, the data may be regarded as indicative of the minimal level of non-compliance. In light of EU-OSHA’s extensive experience in the field of occupational safety and health, we find it reasonable to assume that the provided response options do cover the large majority of safety and health services applied at enterprise-level.

However, this level of compliance seems unrealistically high compared with compliance levels for the other CPMs presented in this chapter (see below). Thus, in comparison, Figure 4-17 below illustrates the national compliance estimates presented in the CSRs.

*Figure 4-17 Levels of compliance with the CPM to ensure protective and preventive services (no. of Member States)*

The figure shows that the level of compliance in the Member States is generally either medium, high or very high. However, national experts point out that major differences exist in compliance levels in micro and small establishments compared to large establishments. According to national data, compliance levels range from very low/low (micro establishments) to very high (large companies). A calculation of average compliance across MSs and establishment sizes based on national data reveals an average score of 3.74, which corresponds to compliance category; good quantitative compliance according to our Interpretation Table 4-8, presented in the introduction to the current mapping question above.

Where the national experts were unable to estimate the levels of compliance by providing a single compliance range (1-5), the entire range provided has been taken into consideration when making the analysis.
In an effort to triangulate these differing findings and approximate the most realistic and actual levels of compliance in the MSs, we have mapped the inputs from the National Implementation Reports in order to compare the data reported to the European Commission by the MSs themselves. The NIRs contain a required sub-headline pertaining directly to the implementation of preventive and protective services in the MSs called ‘2.3 Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.’ Table 4-15 thus lists the key implementation issues that each MS has reported in their NIR. Excerpts have been selected based on an emphasis on extracting quantitative material.

Table 4-15 Mapping of NIRs: Preventive and protective services, emphasis on quantification and comparability

<table>
<thead>
<tr>
<th>MS</th>
<th>Description</th>
</tr>
</thead>
</table>
| AT  | - A working group was set up, which focuses on training and further training in health and safety at work and improved activities by prevention experts and evaluated training facilities for safety officers, control and inspection campaign, focussed on the care provided by Austrian undertakings through preventive services,  
- A survey was conducted in order to ascertain if undertakings provided preventive services, with 98 % of undertakings with over 50 workers have preventive services, compared with approximately, 80 % in smaller undertakings with up to 50 workers. Most undertakings with no preventive services had fewer than 10 workers, 40 % of undertakings with over 50 workers had in-house safety officers and 14 % had their own occupational doctor, only 8.5 % of smaller undertakings with fewer than 50 workers had in-house safety officers and approximately 5 % had their own occupational doctor. |
| BE  | - All employers must have at least one in-house prevention adviser,  
- Only employers with fewer than 20 employees do not have to appoint an in-house prevention adviser from among their workers; they may themselves act as prevention advisers. |
| BG  | - Data from inspections show that, in 2007, there was a body in charge of safety and health at work in 90.6 % of the undertakings inspected, and this grew to 97.7 % in 2012.  
- It has been established that, of all undertakings inspected in 2012, 97.4 % have implemented the OHS services for their staff. |
| CY  | - Approximately 40 persons were authorised for the provision of external protection and prevention services during the reporting period. |
| CZ  | - [Description of national legislation] |
| DE  | - The overall evaluation by the GDA highlighted gaps in support for SMEs,  
- Occupational Doctors and Occupational Safety Officers’ was evaluated primarily as good to very good between 2007 and 2010 in terms of implementation and documentation of risk assessment, implementation of measures and instructions to staff on health and safety,  
- According to the DGUV, around 610,000 safety officers are currently working in undertakings, administrations and training facilities throughout the country. |
| DK  | - [Section separated into Land; Enforcement, information work, campaigns, guidance, etc.; Aviation; Offshore; Shipping; chapter contains no quantitative data] |
| EE  | - Preventive services, in the sense of Article 7 of Directive 89/391/EEC, have been included in the risk prevention measures. |
| EL  | - External protective and preventive services (EPPS) have been established. |
| ES  | - 2012 show that under the key indicator of ‘external prevention services’, some 13,107 activities were carried out by the Inspectorate at the undertakings that were visited, covering 1 313 infringement notices and administrative requests to undertakings. |
| FI  | - [Description of national legislation] |
| FR  | - [Description of national legislation] |
| HU  | - In 2012, the basic occupational health services employed a total of 2 654 occupational health physicians  
- In 2012, the reporting occupational health services provided services to 2 077 666 employees of 96 989 business entities  
- In 2012 was as follows: 89 % in the human health and social benefits, 87 % in trade, catering and transport and 86 % in agriculture, as opposed to only 77 % in the construction industry and education and 75 % in the processing industry, the electricity industry and in mining. |
- Breakdown of workplace stress: Work-related stresses, Stresses arising from adverse health effects; Monitoring workers’ health in connection with their jobs; Occupational hygiene and rehabilitation activities

IR - [Description of national legislation]

IT - Promotion of and support for the spread of a prevention-oriented culture
- The local health authorities perform control and surveillance activities not only at the holdings, but also at agricultural machinery sales outlets and trade fairs. The target number of 10 000 holdings inspected was partly reached in 2011.

LV - During 2008 to 2013 competent institutions conducted assessments of occupational risks in 100 000 workplaces in the enterprises of hazardous industries and prepared a plan for work safety measures and trained Workers in these workplaces

LT - Between 1 July 2008 and 31 May 2010 occupational safety and health services could be provided only by natural or legal persons or branches of foreign legal persons holding a licence entitling them to provide services of an occupational safety and health service in an enterprise and having civil liability insurance. As of 1 June 2010, in implementing Directive 2006/123/EC of the European Parliament and of the Council on services in the internal market, this requirement no longer applies

LU - Under Luxembourg law, employers have a duty to take any measures necessary for the protection of the safety and health of their workers. These measures include information and training, prevention of occupational risks and the introduction of a safety organisation
- Enterprises are divided into seven groups and the basic training and occupational experience that designated workers must possess depend on the group to which the enterprise belongs

MT - [Description of national legislation]

NL - The provision of services in smaller undertakings is lagging behind. Of the undertakings with 1-10 employees, 61 % have a contract with an OSH service (Arbo in Bedrijf, (OSH in Undertakings) 2012). In addition, 17 % of the undertakings have a contract with a service provider other than an OSH service. The service is often provided through a sick leave or healthcare insurer,
- The Inspectorate SZW’s inspection plan for 2012 gives priority, in relation to the supervision of certifying institutions, to the certification of OSH services.

PL - An employer employing up to 10 workers (and if the occupational risk, determined by a risk category used in the accident insurance system, is insignificant, employing up to 20 workers) can himself perform the tasks of a health and safety at work service, provided that he completed training preparing him to perform these tasks.
- The analysis of results of controls regarding the functioning of health and safety at work services, carried out in 2007-2012, indicates that all legally acceptable forms of performance of tasks of safety, hygiene and health at work service could be found in establishments subjected to control.

PT - [Description of national legislation]

RO - The Labour Inspection has developed a nationwide action on ‘Checking prevention and protection activities carried out by external services’ in 2009.

SK - Authorisation to provide the safety technical service is issued by the National Labour Inspectorate.
- Authorisation to provide the occupational health service is issued by the Public Health Authority.

SI - The specialist work safety officer at an employer at which a risk assessment has identified a major risk of injury and occupational disease must attend at least one training course on occupational psychology, ergonomics, work organisation or the promotion of health at work in order to acquire the status of specialist work safety officer.

SE - Protection representatives can give advice on management matters and the obligation of employers to carry out risk assessments.

UK - Implementation measures include: Guidance on getting specialist help with health and safety; Examples of good, bad, poor and good external health and safety advice for businesses; HSE statement to providers of external health and safety assistance on providing competent and fit for purpose health and safety advice; The Independent Occupational Safety and Health Consultants Register to help businesses find assistance with managing health and safety at work.


As the Table shows, the reports provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.
Although the compliance levels suggested by ESENER may be artificially low, this reservation applies to all enterprises. We may therefore nevertheless apply the data for comparative purposes. Figure 4-18 below thus segregates the same group of respondents illustrated in Figure 4-16 above by economic sector, rather than size of establishments.

**Figure 4-18 Establishments with no preventive and protective services, by sector**

The figure illustrates that compliance is higher (i.e. non-compliance is lower) in sectors characterised by high levels of occupational accidents and diseases, such as Mining and quarrying, Manufacturing, Electricity, gas and water supply and Health and social work.

Turning from non-compliance to compliance, Figure 4-19 illustrates which specific preventive and protective services are most used at the enterprise level.


Note: Figure shows the proportion of managers, who replied to have none of the provided options for the question: ‘What health and safety services do you use, be it in-house or contracted externally?’ by economic sector (NACE Rev. 2).
As illustrated in Figure 4-19, 74% of managers reported having an occupational health doctor assigned, 75% reported having a safety expert, and 65% reported having a general health and safety consultancy assigned. In comparison, only 24% reported use of a psychologist and 36% reported use of an ergonomics expert. While these issues may also fall under the scope of a general health and safety consultant, the Figure illustrates that emerging risks, such as psychosocial risks and risks related to musculoskeletal disorders (MSD) are only addressed specifically by field experts to a limited extent by preventive and protective services.

Available ESENER-2 data provides additional insight into the use of a psychologist in establishments. Figure 4-20 thus shows the proportion of managers that reported having a preventive and protective psychologist assigned to their establishment (i.e. 24%) by Member State.
First, we see that with the incorporation of enterprises with 5-9 employees into the ESENER-2 survey population, the share of interviewed establishments, who reported to make use of a psychologist is reduced to 16 % in 2013 and was thus 8 percentage points lower than reported in ESENER 2009 (cf. Figure 4-20). Secondly, we see that the use of psychologists vary significantly from MS to MS with approximately 60 % of Finnish and Swedish establishments making use of a psychologist, while that share is 10 % or less in as many as 11 Member States.

In sum, we find that SMEs and micro enterprises have a higher degree of non-compliance with preventive and protective services. Compliance tends to be highest in sectors which have traditionally been acknowledged to have more occupational accidents and diseases, such as Mining and quarrying, Manufacturing, Electricity, gas and water supply and Health and social work. Furthermore, evidence suggests that psycho-social and ergonomic risks are addressed by specific
experts to a limited extent, although it should be noted that these issues may be covered by a general health and safety consultancy.

An aggregated assessment of the collected evidence, reveals a **good quantitative compliance** with preventive and protective services across MSs and all sizes of establishments as illustrated in Evidence Table 4-16.

**Table 4-16 Evidence table: Preventive and protective services compliance, all establishment sizes**

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, MM150</td>
<td>Use of preventive and protective services, be it in-house or contracted externally, % of all establishments</td>
<td>94.68 %</td>
<td>A</td>
</tr>
<tr>
<td>CSRs</td>
<td>Calculated average value of compliance based on national data</td>
<td>3.74</td>
<td>B</td>
</tr>
<tr>
<td>NIRs</td>
<td>Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

**Conclusion for preventive and protective services, all establishment sizes: Good quantitative compliance**

Source: See column 1, and COWI evaluation team.

**Information for workers**

The third CPM of the OSH *acquis* introduced by the Framework Directive is the obligation to inform workers and/or their representatives of any safety and health risks as well as protective and preventive measures and activities.

To provide insights on compliance with this CPM, Figure 4-21 shows the share of surveyed employee representatives who report that workers at their establishments receive information about safety and health at the workplace on a regular basis.
**Figure 4-21 Establishments within which workers are regularly informed about OSH**

As illustrated in Figure 4-21, the large majority of establishments with employee representation complies with this provision, as 84% of employee representatives reply that workers are regularly informed about safety and health at the workplace. Notably, the figure shows a very limited fluctuation on compliance across different sizes of establishment.

If we assess a similar indicator on information, we see the same tendency. Hence, 88% of employee representatives report that management provides the necessary information for carrying out health and safety tasks properly, and this compliance level is also the same across all sizes of establishments (ESENER, 2009, ER154).

In Figure 4-22, we compare this ESNER data to compliance levels as suggested by national experts following the same methodology as above.
As shown in the figure above, compliance levels with the CPM vary across Member States, although the large majority resides in the high end of the spectrum. Eight Member States highlighted differences in compliance levels between micro establishments/SMEs and large establishments. In comparison with the two CPMs presented above, national experts were not always able to quantify these differences, since data is scarcer. As a consequence, no national data exist for six MSs. A calculation of average compliance across MSs and establishment sizes based on national data reveals an average score of 3.6, which corresponds to compliance category B; good quantitative compliance according to Interpretation Table 4-8 presented in the introduction to the current mapping question.

Figure 4-23 shows a follow-up on to the ESENER questions and shows the proportion of employee representatives who receive their information on time and without having to ask management for it.
Figure 4-23 Employee representatives that receive safety and health information on time and without having to ask for it.


Note: Figure shows the share of employee representatives with a positive answer to the question: ‘Do you usually receive the information on time and without having to ask for it?’

Interestingly, although compliance remains high for all sizes of establishments, the Figure shows a reversed compliance trend compared to data presented for the previous CPMs. In establishments with 10 to 19 employees, 86% of representatives reported to receive information in due time and without having to ask for it. This figure is slightly lower (77%) in establishments with 500 or more employees.

In comparison to the ESENER data, according to the Flash Eurobarometer 398 survey on working conditions (European Commission, 2014), 77% of workers confirm that safety and health information and/or training is available in their workplace. Although this indication of compliance may be too high on account of the inclusion of ‘training’, the data is interesting because the survey population consists of a random selection of workplaces, including those without safety and health representation, for a more accurate composition of establishments. Also, the Flash Eurobarometer is addressed directly at workers, which contributes to the circumvention of the challenges associated with the indirect compliance reflected in information of employee representatives rather than information for workers.

In an effort to triangulate these findings and approximate the most realistic and actual levels of compliance in the MSs, we commenced mapping the reports from the National Implementation Reports. The NIRs contain a required sub-headline pertaining directly to the implementation of information for workers (combined with training of workers) in the MSs called ‘2.4 Information, instruction and training of workers.’ However, the replies provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.

However, as for information for workers, an indicator is available, which may be used to shed light on the qualitative aspect of compliance, which in this case entails that information is sufficient for workers to manage safety and health risks at the workplace. Figure 4-24 thus shows the extent to
which workers interviewed as part of the European Working Conditions Survey feel very well informed, well informed, not very well informed or not at all well informed on health and safety risks encountered at work. This data is available for five consecutive surveys, and thus shows reported responses for all EWCS surveys performed in the period from 1991 to 2010.

Figure 4-24 Quality of safety and health information, trend 1991-2010

As shown in Figure 4-24, information received by workers on OSH is generally considered informative and sufficient, as 89.6% of respondents in 2010 felt well or very well informed of safety and health risks related to their work. This assessment has remained fairly constant over the years despite, for example, EU enlargements and slight alterations to the wording of the survey question. Notably, this Eurofound data does not reflect the opinion of employee representatives, and is as such a more representative indication of compliance at worker-level.

This high level of compliance with the requirement to provide information to workers about safety and health risks at the workplace is largely confirmed in the Directive-specific Reports, although some exceptions exist. For instance, compliance with the CPM seems to be limited in the context of the Display Screen Equipment Directive, not on account of the quantity but rather of the quality of information provided to workers on ergonomic issues. Another example is the Young People Directive, in relation to which analysis shows that the proportion of young people reporting being well-informed has decreased from 1991-2010, whilst the level of other (older) workers reporting the same has remained relatively stable.

In sum, evidence suggests that quantitative compliance with the CPM on general OSH information for workers across MSs is very good and the quality of the information provided seems adequate across all sizes of establishments in establishments with an employee representative. However,
the difference between compliance levels suggested by ESENER and the national data extracted from the CSRs along with survey data from the Eurobarometer is likely to be caused by the fact that the assessed ESENER compliance indicators are extracted from the ESENER survey of employee representatives. ESENER data therefore only reflects compliance in those 69% of establishments that have an assigned employee representative. In light of our previous finding that safety and health representatives have a significant positive impact on the level of compliance (cf. Table 4-12), we therefore estimate that the level of compliance across MSs in establishments with employee representatives is good quantitative compliance, while it is likely to be somewhat lower in establishments without.

Table 4-17: Evidence table: Information for workers compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, ER205</td>
<td>Employees regularly informed about safety and health at the workplace, % of establishments with ERs</td>
<td>83.7%</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER154</td>
<td>Management provides the necessary information for safety and health representatives to carry out health and safety tasks properly, % of establishments with ERs</td>
<td>87.8%</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER155</td>
<td>Employee representatives receive information on time and without having to ask for it, % of establishments with ERs</td>
<td>82.3%</td>
<td>B</td>
</tr>
<tr>
<td>EWCS (2010), q30</td>
<td>Proportion of workers that feel either well or very well informed about the health and safety risks at the workplace, % of all workers</td>
<td>89.6%</td>
<td>A</td>
</tr>
<tr>
<td>Flash Eurobarometer 398</td>
<td>Workers who confirm that safety and health information and/or training is available in their workplace, % of all surveyed workers</td>
<td>77%</td>
<td>B</td>
</tr>
<tr>
<td>CSRs</td>
<td>Calculated average value of compliance based on national data</td>
<td>3.6</td>
<td>B</td>
</tr>
<tr>
<td>NIRs</td>
<td>Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Conclusion for information for workers, all establishment sizes: Good quantitative compliance

Source: See column 1, and COWI evaluation team

Training of workers

Information for workers is not always sufficient for workers to be able to carry out their job safely and in the most preventative manner, wherefore the Framework Directive also contains a provision on the required training of workers.

To measure the quantitative level of compliance, Figure 4-25 shows the share of all employee representatives that have received OSH training and also find that the respective training was sufficient, by the size of establishment
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

Figure 4-25 Sufficiency of training provided to employee representatives, by size of establishment

As shown, across the EU-27, a total of 53.9% of safety and health representatives report that they have received training and that it was sufficient. This proportion is highest for small establishments with 10 to 19 employees (64%) and lowest in large establishments with +500 employees (46%). Interestingly, once again we see a reversed correlation between the size of establishment and the share of satisfied representatives corresponding to the gradient reflected in respect to timely information received from management without prior request (cf. Figure 4-23). This interrelatedness of training and information for workers is mirrored in numerous studies as well as in a large majority of Directive Reports. As established in Eurofound (2010), when assessing previous trends in general, the proportion of ‘well-informed’ respondents is significantly higher among those who received training provided by their employer than among those that did not.

In comparison to the ESENER data, according to the Flash Eurobarometer 398 survey on working conditions (European Commission, 2014), 77% of workers confirm that safety and health information and/or training is available in their workplace. Although this indication of compliance may be too high on account of the inclusion of ‘information’, the data is interesting because the survey population consists of a random selection of workplaces, including those without safety and health representation, for a more accurate composition of establishments. Also, the Flash Eurobarometer is addressed directly at workers, which contributes to the circumvention of the challenges associated with the indirect compliance reflected in training of employee representatives rather than training of workers.

In comparison, Figure 4-26 shows the level of compliance with the requirement to provide training to workers according to national, non-ESENER, data sources.
As shown in the Figure above, compliance levels with the CPM vary across Member States, although once again with a majority of MSs placed in the higher end of the spectrum. Data on differences in the level of compliance between different sizes of establishments are rare, but compliance levels are reported to be lower in micro-establishments. A calculation of average compliance across MSs and establishment sizes based on national data reveals an average score of 3.70, which corresponds to compliance category B; good quantitative compliance according to our Interpretation Table 4-8 presented in the introduction to the current mapping question above.

In an effort to triangulate these findings and approximate the most realistic and actual levels of compliance in the MSs, we commenced mapping the reports from the National Implementation Reports. As highlighted above, the NIRs contain a required sub-headline pertaining directly to the implementation of training of workers (combined with information for workers) in the MSs called ‘2.4 Information, instruction and training of workers.’ However, the replies provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.

Next, we assess the extent to which training has been provided to employee representatives. In this regard, Figure 4-27 shows the share of employee representatives who report having received training on seven key OSH topics.
Figure 4-27 OSH training provided to employee representatives

Source: EU-OSHA: ESENER (2009) – ER159

Note: The Figure shows the answers of ERs to the question: ‘On which of the following issues have you or your health and safety representative colleagues received training?’

According to ESENER 2009, the emphasis of training seems to be placed on traditional topics such as fire safety and the prevention of accidents (77% of employee representatives) while a majority of employee representatives have not received training on topics related to psychosocial risks such as violence, work-related stress and discrimination (42%, 45% and 36%, respectively).

Notably, the limited share of ERs who report having received training on ergonomic issues (58%) gives a small insight into the explanation for the conclusions reached regarding the lack of information provided to workers on ergonomic issues identified in the Display Screen Equipment Directive Report and discussed above.

Lastly, Figure 4-28 provides information on the quality of the training provided by showcasing the share of employee representatives that would like additional training and on which OSH topics.
Figure 4-28 Need for additional training according to employee representatives, by size of establishment

Source: EU-OSHA: ESENER (2009) – ER161a

Note: Figure shows the share of employee representatives to have already received training but need additional training on selected topics when asked: ‘On which of the following topics would you or your health and safety representative colleagues need additional training?’

As illustrated by the Figure, as many as 82% of ERs would like to have additional training on work-related stress. This of course reflects the fact that 55% of ERs have not received training on work-related stress all together but it also entails that at least 27% of the safety and health representatives that have already received training on stress report a need for additional training on the subject. These findings may be a testament to insufficient quality of training, although it is perhaps more (or equally) likely that the expressed need on part of ERs reflects the increasing socio-economic challenges associated with absence from work on account of work-related stress, which in turn increases the need for continued prevention and training.

In general, however, on all topics apart from fire prevention, more than half of the ERs express a desire for additional training. Although these shares are considerable, they do not in isolation provide information on the level of training provided nor the level of compliance with the CPM as much as it corroborates a continued relevance of the CPM.

In sum, evidence suggest that so-called indirect compliance through training of safety and health representatives (as opposed to workers themselves) on traditional OSH risk, such as accident prevention and fire safety seems to be quite high. Contrarily, training on prevention and measures related to psychosocial risks and risks associated with exposure to chemical and biological agents, radiation or dust hazards has been provided to less than half of the surveyed ERs. Of these, a total of 5% of safety and health representatives report that they have received a sufficient amount of training. Evidence suggests that ERs working in SMEs tend to be more satisfied with the training they receive, than those working in larger establishments. Generally, additional training is desired amongst ERs on all surveyed OSH issues apart from fire prevention.
However, an aggregated assessment of the collected evidence points to a moderate quantitative compliance with training of workers across MSs and all sizes of establishments (please note that both variables pointing to a good quantitative compliance are in the very low end of the respective scales, and thus, in both cases, close to moderate quantitative compliance.). According to national data sources from some MSs, compliance tends to be lower in micro and small establishments, while ESENER data suggests the opposite, namely that more employee representatives in smaller establishments receive training while being more satisfied with the training they receive than those working in larger establishments.

Table 4-18: Evidence table: Training of workers compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, ER160</td>
<td>Sufficiency of training, % of employee representatives</td>
<td>53.9</td>
<td>D</td>
</tr>
<tr>
<td>Flash Eurobarometer 398</td>
<td>Workers who confirm that safety and health information and/or training is available in their workplace, % of all surveyed workers</td>
<td>77 %</td>
<td>B</td>
</tr>
<tr>
<td>CSRs</td>
<td>Calculated average value of compliance based on national data</td>
<td>3.7</td>
<td>B</td>
</tr>
<tr>
<td>NIRs</td>
<td>Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Conclusion for training of workers, all establishment sizes: Moderate quantitative compliance

Source: See column 1, and COWI evaluation team

Health surveillance

The Framework Directive requires that employers carry out health surveillance to ensure that workers receive information appropriate to the safety and health risks they incur at work. Measures shall be introduced in accordance with national laws and/or practices and shall allow each worker to receive health surveillance at regular intervals, if so desired. Health surveillance may be provided as part of a national health system.

Figure 4-29 below shows the share of establishments which regularly monitors the health and safety of workers through medical examinations according to management.
The Figure shows that medical examinations are regularly performed in 72% of all surveyed establishments in EU-27. Health surveillance compliance seems to follow a similar pattern to preventive and protective services and risk assessments, with compliance increasing with the size of establishments. Regular medical examinations are thus performed in 62% of establishments with 10 to 19 employees, while this figure is 85% for establishments with 500 employees or more.

Much the same picture emanates from the national, non-ESENER data extracted from the Country Summary Reports.
As shown in Figure 4-30, national data generally points towards a very high or high level of compliance with the CPM across the EU-27, although national data is generally much scarcer than for the previous CPMs. Lower levels of compliance were reported in micro establishments and small establishments. A calculation of average compliance across MSs and establishment sizes based on national data reveals an average score of 3.70, which corresponds to compliance category B; good quantitative compliance according to our Interpretation Table 4-8, presented in the introduction to the current mapping question.

In an effort to triangulate these findings and approximate the most realistic and actual levels of compliance in the MSs, we commenced mapping the reports from the National Implementation Reports. As highlighted above, the NIRs contain a required sub-headline pertaining directly to the implementation of health surveillance (combined with information for workers) in the MSs called ‘2.6 Health surveillance.’ However, the replies provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.

If we briefly return to Figure 4-8 (Health and safety management measures by existence of formal employee representation), discussed in the section on overall compliance and summarised below, we get a good indication on the influence of employee representatives on the level of compliance with the health surveillance requirement. The following two variables are relevant:

- Regular monitoring of employee’s health (MM154)
- Regular analysis of causes for sickness absences (MM152)

The Figure reveals that 75 % of interviewed establishments with general employee representation regularly monitor the health of employees, while only 61 % of establishments without employee representatives do so. Similarly, 62 % of businesses with employee representatives regularly
analyse causes of sickness absences, while this figure is only 41 % for establishment without employee representatives.

The latter variable does not provide information on OSH compliance specifically, seeing as businesses are not generally legally required to analyse such causes (unless specified in individual Directives or the national transposition of the OSH acquis). Nevertheless, it does serve as a useful indicator for health surveillance compliance as ‘analysis of causes for sickness absence’ has been identified as one of the main activities associated with conducting health surveillance, as implicitly illustrated by the question's inclusion into the ESENER and ESENER-2 surveys (although results from the answers has not been released for the latter).

In sum, we may conclude that quantitative compliance with the CPM of health surveillance seems to be poor across all establishment sizes in those establishments without a safety and health representative, while it seems to be moderate in establishments with an employee representative (cf. Evidence Table 4-19) (notice that all four findings are at the limit of being categorised within a lower compliance range, wherefore we have combined the assessments into the lower of the two categories both for establishments with or without employee representatives). Furthermore, quantitative compliance seems to increase with the number of employees.

As illustrated by Evidence Table 4-20, an aggregated assessment of the collected evidence, reveals a moderate quantitative compliance with health surveillance services on average across MSs and all sizes of establishments.

Table 4-19 Evidence table: Health surveillance compliance, by OSH employee representation

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>No establishment size defined</td>
<td>Regular monitoring of employee's health, % of establishments</td>
<td>61 %</td>
<td>C</td>
<td>75 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM154</td>
<td>Regular analysis of causes for sickness absences, % of establishments</td>
<td>41 %</td>
<td>D</td>
<td>62 %</td>
<td>C</td>
</tr>
</tbody>
</table>

*Conclusion for health surveillance, all establishment sizes, without and with assigned safety and health representatives*

- D -

Source: See column 1, and COWI evaluation team

Table 4-20: Evidence table: Health surveillance compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, MM154</td>
<td>Health of employees monitored through regular medical examinations, % of establishments</td>
<td>72 %</td>
<td>C</td>
</tr>
<tr>
<td>CSRs</td>
<td>Calculated average value of compliance based on national data</td>
<td>3.7</td>
<td>B</td>
</tr>
<tr>
<td>NIRs</td>
<td>Involvement of preventive services, in the sense of Article 7 of Directive 89/391/EEC (framework), in the risk prevention measures.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

*Conclusion for health surveillance, all establishment sizes: Moderate quantitative compliance*

Source: See column 1, and COWI evaluation team
Consultation of workers

Finally, the last CPMs of the Framework Directive is the requirement to consult workers and/or their representatives and allow them to take part in discussions on OSH issues. This CPM is one of the cornerstones of the participatory approach envisaged by the Framework Directive (with employee representation as another).

First, it should be noted that it is not possible to draw general conclusions regarding the levels of national compliance with the CPM from the CSRs. While the CSRs report that some form of consultation is in place in the majority of establishments, significant differences exist as to the scope and frequency of such consultation, the appointment of an employee representatives, etc. The quality of the available data as regards the fulfilment of these requirements is also often low. Moreover, the CSRs indicate that there are substantial differences between establishments of different sizes. However, there are no data to quantify this conclusion.

However, a number of indicators for the level of consultation may be deducted from the ESENER data. First, we wish to briefly revisit the share of establishment that has an internal safety and health representative by size of establishment (analysed in Section 4.3.2. on overall compliance above).

Table 4-21 Establishments with an internal safety and health representative

<table>
<thead>
<tr>
<th>Size of establishment</th>
<th>10 to 19</th>
<th>20 to 49</th>
<th>50 to 249</th>
<th>250 to 499</th>
<th>500+</th>
<th>Total average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishments with ERs (%)</td>
<td>51 %</td>
<td>63 %</td>
<td>75 %</td>
<td>83 %</td>
<td>88 %</td>
<td>67 %</td>
</tr>
</tbody>
</table>

Source: ESENER (2009), MM355, by size of establishment

These initial figures provide an indication that SMEs may generally have a lower level of consultation than larger establishments. This is based on the assumption that consultation is more likely to take place in establishments with a safety and health representative than in those without, as was established above to be the case for compliance with the risk assessment requirement as well as the health surveillance CPM.

However, as this correlation is not explicitly documented, establishment of a permanent committee or working group consisting of members of management and employee representatives that deal with OSH matters may also be seen as an indication of an attempt to achieve compliance and incorporate the participatory principles into the OSH management system. The latter does not, however, provide information on the extent of practical implementation of these principles and the level of consultation applied on issues such as changes to organisation and working conditions, workplace learning opportunities and job security.

To gain insight into both the share of establishments that may be in compliance and the quality of these consultation activities (and thus potential level of workplace impact), Figure 4-31 contains two variables. The first set of columns represents the share of employee representatives who report that there is a permanent committee or working group dealing with OSH matters within the establishment. The second set of columns represents the employee representatives who report that they have a say in when and where risk assessments or workplace checks are carried out, which constitutes an indicator for the extent of practical implementation of the participatory principles.
As illustrated in Figure 4-31, most establishments (80 %) that have an assigned employee representative also have a permanent committee or working group, consisting of members of management and representatives of the employees dealing with safety and health. Most employee representatives (82 %) also report to have a say in the decisions on when and where risk assessments or workplace checks are carried out. This indicates a very good level of compliance with the CPM of consultation in those establishment, which have an appointed employee representative.

Another indicator for the level of consultation implemented at workplace level is the extent to which employee representatives are involved in the choice of follow-up actions to be implemented at the workplace as a result of risk identified during a risk assessment. The share of employee representatives to report such involvement is illustrated in Figure 4-32.
This data also indicates a high level of compliance across establishments, as 86 % of employee representatives report being included in the choice of follow-up actions. Interestingly, it seems that management is more likely to consult with the appointed safety and health representatives in small establishments (91 % of establishments with 10 to 19 employees) compared to large establishments (84 %).

Adding to this, as previously shown in Figure 4-8 above, 81 % of enterprises with general employee representation and 71 % of establishments without employee representatives involve line managers in OSH matters to a high extent. This indicates a good and moderate level of quantitative compliance with worker consultation, although exclusively at line management level, in companies with and without employee representation. It also seems to confirm, however, that the presence of a safety and health representative has a positive influence on compliance in relation to consultation.

As only 51 % of establishments with 10 to 19 employees have an internal safety and health representative compared to 88 % of the large establishments (67 % in total), this implies that compliance, particularly in SMEs, is likely to be somewhat lower than the ESENER data suggests. This reservation is exacerbated by the fact that ESENER does not provide information on the actual level of consultation with workers.

To provide an indication of the actual shares of all surveyed establishments that are thus represented in Figure 4-32, when taking account of the share of establishments reported to have no safety and health representative, we have calculated an adjusted compliance of establishments with employee representatives inserted in Figure 4-33 below. The inserted line thus illustrates the actual share of all surveyed establishments (including those without employee representation), within which an employee representative is consulted on follow-up actions in relations to OSH prevention. It is as such a more realistic compliance level than the ones suggested merely by
ESENER. However, the adjusted compliance does not take account of the share of establishments that are in compliance without having a safety and health representative.

Figure 4-33 Employee representative involvement with the choice of follow-up actions, indicative calculated compliance adjusted for establishment without employee representatives

Source: EU-OSHA: ESENER (2009), ER211, by size of establishment, adjusted for establishments without an internal safety and health representative by means of MM355

Note: Share of employee representatives to answer ‘yes’ to the question: ‘Are you as health and safety representatives usually involved in the choice of follow-up actions?’ Indicative compliance level calculated by multiplying share of establishments with employee representatives (MM355) with the ‘yes’ answers to ER211.

The Figure shows that a total of 58% of surveyed establishments actually have a safety and health representative, who is consulted in regard to follow-up actions. Although these calculations are clearly merely indicative of compliance (in part because other consultation activities may be performed in establishments without employee representatives, which cannot be presumed to be non-compliant), they serve to illustrate that compliance is likely to be considerably lower than suggested by ESENER.

In comparison, during the Flash Eurobarometer 398 survey on working conditions, 62% of surveyed workers reported to have been consulted on safety and health issues at work by their employer or by a safety and health representative (European Commission, 2014). This survey thus points to a compliance level significantly closer to the calculated indicative level than the reported ESENER level. This difference, on the one hand, reveals that the actual compliance level across MSs is in fact lower than suggested by ESENER but may also be an indication that employee representatives do not always include the workers they represent, when consulted by management on OSH matters.

In an effort to triangulate these findings and approximate the most realistic and actual levels of compliance in the MSs, we commenced mapping the reports from the National Implementation Reports. As highlighted above, the NIRs contain a required sub-headline pertaining directly to the implementation of consultation of workers in the MSs called ‘2.5 Involvement of workers and their
representatives (e.g. consultation, participation). However, the replies provided by each MS are of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made.

In sum, evidence suggests that consultation of workers to a large extent is achieved by means of safety and health employee representation. As shown in the Evidence Table 4-22 below, employee representatives are consulted to a slightly higher extent in small establishments (84.3 % in establishments with 10 to 19 employees) compared to large establishments (80.6 % in establishments with >500 employees). However, as small establishments are much less inclined to have an employee representative, quantitative compliance with consultation of workers generally increases from poor compliance to moderate or good quantitative compliance as the number of employees in the establishment increases.

Table 4-22 Evidence table: Consultation compliance, by size of establishment and OSH employee representation

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding Category</th>
<th>Finding</th>
<th>Category</th>
<th>Finding Category</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 19 employees (small establishments)</td>
<td>Establishments with OSH employee representatives, % of all establishments</td>
<td>Surveyed data (All establishments / Companies with OSH representative)</td>
<td>51.0 %</td>
<td>D</td>
<td>Calculated adjustment for establishments without ERs</td>
<td>51.0 %*</td>
<td>D</td>
</tr>
<tr>
<td>ESENER, MM355</td>
<td>Establishments with OSH employee representatives, % of all establishments</td>
<td>51.0 %</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESENER, ER209</td>
<td>Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, % employee representatives</td>
<td>84.3 %</td>
<td>B</td>
<td></td>
<td></td>
<td>43.2 %</td>
<td>D</td>
</tr>
<tr>
<td>ESENER, ER211</td>
<td>Employee representative involvement in the choice of follow-up actions, % employee representatives</td>
<td>90.8 %</td>
<td>A</td>
<td></td>
<td></td>
<td>46.5 %</td>
<td>D</td>
</tr>
</tbody>
</table>

**Conclusion for establishments with 10 to 19 employees:** Poor quantitative compliance – consultation of workers

| 20 to 49 employees (small establishments) | Establishments with OSH employee representatives, % of all establishments | 63.0 %  | C        |          |                                                      | 63.0 %* | C        |
| ESENER, MM355   | Establishments with OSH employee representatives, % of all establishments | 63.0 %  | C        |          |                                                      |         |          |
| ESENER, ER209   | Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, % employee representatives | 81.4 %  | B        |          |                                                      | 51.4 %  | D        |
| ESENER, ER211   | Employee representative involvement in the choice of follow-up actions, % employee representatives | 88.6 %  | B        |          |                                                      | 55.9 %  | D        |

**Conclusion for establishments with 20 to 49 employees:** Poor quantitative compliance – consultation of workers

| 50 to 249 employees (medium establishments) | Establishments with OSH employee representatives, % of all establishments | 75.0 %  | B        |          |                                                      | 75.0 %* | B        |
| ESENER, MM355   | Establishments with OSH employee representatives, % of all establishments | 75.0 %  | B        |          |                                                      |         |          |
| ESENER, ER209   | Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, % employee representatives | 80.8 %  | B        |          |                                                      | 60.5 %  | C        |
| ESENER, ER211   | Employee representative involvement in the choice of follow-up actions, % employee representatives | 85.3 %  | B        |          |                                                      | 63.9 %  | C        |

**Conclusion for establishments with 50 to 249 employees:** Moderate quantitative compliance – consultation of workers
### 250 to 499 employees (large establishments)

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, MM355</td>
<td>Establishments with OSH employee representatives, % of all establishments</td>
<td>83.0 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER209</td>
<td>Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, % employee representatives</td>
<td>80.0 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER211</td>
<td>Employee representative involvement in the choice of follow-up actions, % employee representatives</td>
<td>82.7 %</td>
<td>B</td>
</tr>
</tbody>
</table>

**Conclusion for establishments with 250 to 449 employees: Moderate quantitative compliance – consultation of workers**

### 500+ employees (large establishments)

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, MM355</td>
<td>Establishments with OSH employee representatives, % of all establishments</td>
<td>88.0 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER209</td>
<td>Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, % employee representatives</td>
<td>80.6 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER211</td>
<td>Employee representative involvement in the choice of follow-up actions, % employee representatives</td>
<td>83.8 %</td>
<td>B</td>
</tr>
</tbody>
</table>

**Conclusion for establishments with 250 to 449 employees: Moderate to good quantitative compliance – consultation of workers**

On the overall EU-level across MSs and establishment sizes, data on compliance seems to lack consistency. The main reason for this seems to be that those establishments that have employee representatives generally have good quantitative compliance by means of consultation of employee representatives. On the other hand, we cannot assess the extent to which safety and health representatives include the workers they represent, nor the extent to which establishments without employee representatives are in compliance. As a result, we may simply deduce from the collected findings that quantitative compliance is lower than reported by unadjusted ESENER data, and we therefore cautiously conclude that quantitative compliance with consultation of workers ranges from poor to moderate / good.

### Table 4-23 Evidence table: Consultation of workers compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER, MM355</td>
<td>Establishments with OSH employee representatives, % of all establishments</td>
<td>67 %</td>
<td>C</td>
</tr>
<tr>
<td>ESENER, ER102</td>
<td>Establishments (with an OSH representative) that also have a permanent OSH committee or working group consisting of members of management and representatives of the employees, % of establishments with ERs</td>
<td>80 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, ER209</td>
<td>Employee representatives that have a say in when and where risk assessments or workplace checks are carried out, %</td>
<td>81.2 %</td>
<td>B</td>
</tr>
</tbody>
</table>

(adjusted)
### 4.3.4 Conclusion on compliance

The mapping of compliance with the OSH _acquis_ reveals that available data allows for a mapping of the quantitative aspect of compliance, i.e. the extent to which establishments perform specific, measurable OSH-related actions, such as performing risk assessments or formulating an OSH management policy plan. However, compliance is not achieved solely by producing the required output. An OSH management plan may be incomplete, it may lack essential elements, may not take all risks into account, may not be well executed etc., all of which undermines compliance, as the Directives contain requirements which are essentially quality and content oriented rather than activity oriented. The mapping of compliance in the MSs reveals that the mapping of this qualitative aspect of compliance cannot be systematically performed due to a lack of data availability.

The assessment of compliance at the EU level is therefore particularly concerned with the quantitative aspect and mostly based on ESENER and ESENER-2 data. While ESENER is a valuable source of data, the latter is unfortunate, as the ESENER surveys have not been designed to measure compliance (from a legal perspective) but rather to get an insight into the manner in which OSH is managed at workplaces.

In this context, it is a relevant conclusion that the attempt to map the findings of the National Implementation Reports has yielded no result. The reporting requirements of the National Implementation Reports have proven to be formulated too broadly to facilitate quantifications of the replies across MSs or to allow for comparability.

However, the collected data shows that compliance varies significantly from Directive to Directive, form MS to MS, and across establishment sizes.

For instance, the Directive-specific evaluations showed that Drilling Directive is one that MSs appear to comply with to a large extent, partly on account of Directive provisions, partly spurred on by the self-interest of the often large establishments that operate in the sector. In contrast, the AOR Directive is characterised by a low level of compliance in MSs, as the issue of artificial optical radiation is regarded as a complex issue. Employers within this field find the technicalities and acquired competency to measure, monitor and assess difficult to understand and/or attain.
Even within the framework of the same Directive, the level of compliance varies significantly from Member State to Member State and from CPM to CPM, and follows no clear pattern. For instance – according to the limited data available in the MSs – the level of reported compliance with the individual CPMs of the Manual Handling Directive ranges in compliance from 8 % to 90 % in enterprises. Likewise, compliance with the Biological Agents Directive varies from sector to sector, as establishments that are intentional users or handlers of biological agents have a much higher level of compliance than establishments, which do not have biological agents as their core business.

Compliance also varies significantly from Member State to Member State. For example, within the group of establishments with 10 to 19 employees, Greece has for the lowest share of establishments that have an OSH policy plan (33 % - very poor overall quantitative compliance), while, for the same group in the UK, ESENER reported a share of 98 %. For the group with large establishments, Poland has the lowest share (71 %), while 100 % of the managers interviewed in Estonia, Latvia, Slovakia, Sweden and United Kingdom state that they have an OSH policy or action plan (ESENER; 2009, MM155).

Though there are variances between Directives and Member States, it is an overall observation in the evaluation that both EU and national stakeholders assess compliance with Directive requirements as higher in large establishments compared to SMEs and micro-establishments. This is supported by the Flash Eurobarometer and, as shown in the Table, by ESENER data on compliance. An aggregated interpretation of the findings on quantitative compliance, shows that overall compliance increases with the size of the establishment:

› Micro establishments: Cannot be assessed (limited evidence points to poor overall quantitative compliance)
› 10 to 19 employees: Poor overall quantitative compliance
› 20 to 49 employees: Moderate overall quantitative compliance
› 50 to 249 employees: Good overall quantitative compliance
› 250 to 499 employees: Good overall quantitative compliance
› 500+ employees: Very good overall quantitative compliance

The smaller level of compliance in SMEs corresponds to the findings for several Directives, such as the Construction Directive, the ATEX Directive, the Medical treatment on board vessels Directive and the Vibration Directive. However, in contrast, some Directives have not resulted in differences in compliance levels for SMEs compared to larger establishments (e.g. Biological Agents Directive and the AOR Directive). This propensity is mirrored in several National Implementation Reports, where Member States have elaborated on difficulties faced by SMEs in implementing Directives, while several MSs also emphasised the opposite (ref. e.g. the National Implementation Reports), namely that they have no evidence that SMEs experience greater difficulties than larger enterprises.

As illustrated in Table 4-10, quantitative evidence reveal a moderate to good overall level of compliance across the EU and across establishment sizes.

Table 4-24 Evidence table: Overall OSH compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>Compliance according to EU stakeholders, score 1-5</td>
<td>3.65</td>
<td>B</td>
</tr>
</tbody>
</table>
There is no indication that compliance is measurably higher in the public sector compared to the private sector.

Segregating quantitative data by establishment size, into establishments with and without a safety and health representative, shows that this lower level of compliance in smaller establishments to a large extent is coupled with the lack of a safety and health representative (Table 4-12).
As established above, safety and health representation is considerably less frequent in small establishments compared to larger establishments (e.g. only 51 % of establishments with 10 to 19 employees in 2009 had an internal OSH representative). As the table shows, even small establishments with employee representatives have a good or very good overall quantitative compliance, while the corresponding group of establishments without safety and health representation have poor to moderate quantitative compliance.

Thus, although it is positive that 58 % of surveyed establishments do have a H&S representative, this gap of 42 % constitutes significant room and potential for improvement of overall OSH compliance, particularly in SMEs. There is a considerable lack of representation in some sectors, particularly in the Agriculture, forestry and fishing sector. The latter is worrying as the Agriculture, forestry and fishing sector is a high risk sector in the context of occupational safety and health.

Mapping quantitative compliance with each CPM individually across MSs and establishment sizes based on available data reveals that compliance with training of workers and health surveillance is moderate, while compliance with information for workers and preventive and protective services is good. Quantitative compliance with risk assessments is moderate to good and compliance with
consultation of workers ranges from poor to moderate or good compliance depending on the chosen method applied to analyse available data. These findings are summarised in Table 4-26 below.

Table 4-26 Conclusion of quantitative compliance with CPMs

<table>
<thead>
<tr>
<th>Conclusion by CPM</th>
<th>Interpretation</th>
<th>Compliance category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk assessments</td>
<td>Moderate to good quantitative compliance</td>
<td>C - B</td>
</tr>
<tr>
<td>Preventive and protective services</td>
<td>Good quantitative compliance</td>
<td>B</td>
</tr>
<tr>
<td>Information for workers</td>
<td>Good quantitative compliance</td>
<td>B</td>
</tr>
<tr>
<td>Training of workers</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
</tr>
<tr>
<td>Health surveillance</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
</tr>
<tr>
<td>Consultation of workers</td>
<td>Poor to moderate/good quantitative compliance</td>
<td>D – C/B</td>
</tr>
</tbody>
</table>

Source: COWI evaluation team

The first CPM of the Framework Directive, and the cornerstone of implementation of the OSH acquis, is the requirement that enterprises shall regularly conduct risk assessments. In the context of SMEs, we find that the share of establishments that regularly undertake risk assessments increases with the size of establishments as illustrated in Table 4-13. This correlation remains, when compliance rates are adjusted for the fact that small and medium sized establishments are slightly more inclined to take the necessary follow-up actions after having identified a risk during a health and safety check, which is a prerequisite for compliance. Generally, most establishments, independent of size, take the necessary follow-up actions once risks have been identified (91 %). However, SMEs are slightly more likely to take full action (as opposed to part action), while larger establishments seem to take more actions of different types than SMEs. The most common reasons for not conducting risk assessments on a regular basis are the fact that hazards and risks are already known and that establishments believe themselves to have no major problems. This is particularly true for the smallest establishments.

ESENER (2009) data also clearly shows that the share of risk assessments being performed by internal staff increases along with the size of the establishment – a correlation that is confirmed in the recent ESENER-2 data (EU-OSHA, 2015). The use of internal staff compared to external staff varies considerably between MSs. According to ESENER-2, the highest share of internally performed risk assessments is found in Denmark (76 % of establishments), the United Kingdom (68 %) and Sweden (66 %). The lowest shares are found in Slovenia (7 %), Croatia (9 %) and Spain (11 %). Overall, there is a tendency that in Northern and Western-European MSs, risk assessments are more often performed by internal staff than in southern and Eastern-European MSs.

Some challenges with compliance stemming from provisions and characteristics of individual Directives have also been identified. For instance, the Pregnant/breastfeeding workers Directive has given rise to some shortcomings in compliance at the enterprise level, mainly because employers find it difficult to identify special risks for pregnant and breastfeeding women (i.e. to include this aspect into the risk assessment), and secondly, because they find it difficult
subsequently to identify suitable work accommodations (red. Pregnant/breastfeeding workers Directive).

On the overall level, according to ESENER-2, 76 % of all enterprises in EU-28 carry out risk assessments on a regular basis, although compliance varies considerably from MS to MS ranging from 94 % of establishments in Italy and Slovenia down to 37 % in Luxembourg. In Table 4-14, we have summarised quantitative compliance levels for all MSs based on ESENER-2 data (cf. Figure 4-9).

Table 4-27 Quantitative compliance with risk assessment, by MS, based on ESENER-2

<table>
<thead>
<tr>
<th>Assessed compliance</th>
<th>Interpretation</th>
<th>Compliance category</th>
<th>Member States</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 % - 100 %</td>
<td>Very good quantitative compliance</td>
<td>A</td>
<td>IT, SI, DK, UK, BG [5]</td>
</tr>
<tr>
<td>75 % - 89 %</td>
<td>Good quantitative compliance</td>
<td>B</td>
<td>ES, RO, LV, SE, CZ, HU, PL, PT, LT [9]</td>
</tr>
<tr>
<td>60 % - 74 %</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
<td>FI, NL, IE, EE, BE, DE, MT [7]</td>
</tr>
<tr>
<td>40 % - 59 %</td>
<td>Poor quantitative compliance</td>
<td>D</td>
<td>SK, AT, FR, CY, EL [5]</td>
</tr>
<tr>
<td>0 % - 39 %</td>
<td>Very poor quantitative compliance</td>
<td>E</td>
<td>LU [1]</td>
</tr>
</tbody>
</table>

Source: EU-OSHA (2015), ESENER-2, COWI analysis

However, as national, non-ESENER data consistently places compliance with the requirement to perform risk assessments at a lower level than ESENER-2 across EU-27, we conclude that, from a quantitative perspective, compliance with the requirement to perform risk assessments ranges from moderate to good compliance, with large establishments in some MSs being in very good compliance and small establishments in other MSs displaying poor compliance.

A total average calculated based on national ESENER-2 data and the calculated CSR data equals 3.56, which according to our interpretation Table 4-8, corresponds to category B i.e. **good quantitative compliance** with the requirement to perform risk assessments across MSs and establishment sizes.

Moving to the second CPM, an aggregated assessment of the collected evidence, reveals a **good quantitative compliance** with preventive and protective services across MSs and all sizes of establishments. However, we find that SMEs and micro enterprises have a higher degree of non-compliance with preventive and protective services. Compliance tend to be highest in sectors which have traditionally been acknowledged to have more occupational accidents and diseases, such as Mining and quarrying, Manufacturing, Electricity, gas and water supply and Health and social work. Furthermore, evidence suggests that psycho-social and ergonomic risks are addressed by specific experts to a limited extent, although it should be noted that these issues may be covered by a general health and safety consultancy.

In the context of the third CPM on general OSH information for workers, evidence suggests that quantitative compliance across MSs is very good and the quality of the information provided seems adequate across all sizes of establishments in establishments with an employee representative. However, differences between compliance levels suggested by ESENER and national data
extracted from the CSRs, along with survey data from the Eurobarometer, is likely to be caused by the fact that the assessed ESENER compliance indicators are extracted from the ESENER survey of employee representatives. ESENER data therefore only reflects compliance in those 69 % of establishments that have an assigned employee representative. In light of our previous finding that safety and health representatives have a significant positive impact on the level of compliance (cf. Table 4-12), we therefore estimate that the level of compliance across MSs in establishments with employee representatives is good quantitative compliance, while it is likely to be somewhat lower in establishments without safety and health representation.

On the subject of the CPM related to the training of workers, an aggregated assessment of the collected evidence, reveals moderate quantitative compliance with training of workers across MSs and all sizes of establishments. According to national data sources from some MSs, compliance tends to be lower in micro and small establishments, while ESENER data suggests the opposite, namely that more employee representative in smaller establishments receive training while also being more satisfied with the training they receive, than those working in larger establishments. Evidence also suggest that so-called indirect compliance through training of safety and health representatives (as opposed to workers themselves) on traditional OSH risk, such as accident prevention and fire safety seems to be quite high. Contrarily, training on prevention and measures related to psychosocial risks and risks associated with exposure to chemical and biological agents, radiation or dust hazards has been provided to less than half of the surveyed ERs. Of these, a total of 5 % of safety and health representatives report that they have received a sufficient amount of training. Generally, additional training is desired amongst ERs on all surveyed OSH issues apart from fire prevention.

In the context of health surveillance, little may be derived from the Directive-specific Reports, which were challenged by a lack of Directive-specific data on health surveillance. Based on national and EU data, we may conclude that quantitative compliance with the CPM seems to be poor across all establishment sizes in those establishments without a safety and health representative, while it seems to be moderate in establishments with an employee representative (cf. Evidence Table 4-19). Furthermore, quantitative compliance with the health surveillance requirement increases with the number of employees employed in the establishment. An aggregated assessment of the collected evidence, reveals a moderate quantitative compliance with health surveillance services on average across MSs and all sizes of establishments.

In the context of worker consultation, on the EU-level across MSs and establishment sizes, data on compliance with consultation of workers seems to yield varying results. The main reason for this is that consultation of workers to a large extent is achieved by means of safety and health employee representation wherefore those establishments that have employee representatives generally have good quantitative compliance. On the other hand, we cannot assess the extent to which safety and health representatives include the workers they represent, nor the extent to which establishments without employee representatives are in compliance. Furthermore, employee representatives are consulted to a slightly higher extent in small establishments (84.3 % in establishments with 10 to 19 employees) compared to large establishments (80.6 % in establishments with +500 employees). However, as small establishments are much less inclined to have an employee representative, quantitative compliance with consultation of workers generally increases from poor compliance to moderate or good quantitative compliance as the number of employees in the establishment increases. As a result, we may simply deduct from the collected findings that quantitative compliance is lower than reported by unadjusted ESENER data, and we therefore cautiously conclude that compliance with consultation of workers ranges from poor to moderate/good quantitative compliance.
4.4 Accompanying actions (MQ4)

**MQ4:** What accompanying actions to OSH legislation have been undertaken by different actors (the Commission, the national authorities, social partners, EU-OSHA, Eurofound, etc.) to improve the level of protection of safety and health at work, and to what extent are they actually used by companies and establishments to pursue the objective of protecting safety and health of workers? Are there any information needs that are not met?

When answering the fourth mapping question (MQ4), we distinguish between accompanying actions taken at Member State level – mainly based on information presented in the Country Summary Reports prepared as part of the present evaluation – and accompanying actions taken at the EU level – mainly based on information obtained through desk research and interviews with EU-level stakeholders.

The analysis focused on key documents and actions. Many Member States have developed, additional items, such as leaflets and posters, but these have not been taken into account in this mapping question. The scope of the enquiry was restricted to 2007-2012 in line with the timeline of the evaluation. Some (important) material might predate or postdate this period and has therefore not been reported.

4.4.1 Accompanying actions at Member State level

With regard to the accompanying actions at Member State level, three sub-questions were considered, as follows:

› What accompanying actions to OSH legislation have been undertaken by different actors to improve the level of protection of health and safety at work (by national authorities, by social partners, etc.)?

› Are there gaps identified in accompanying measures?

› To what extent are the accompanying actions actually used by establishments to pursue the objective of protecting health and safety of workers?

These three questions are answered, on the basis of research and national stakeholder interviews, in the Country Summary Reports.

The accompanying measures identified cover the following categories:

› Guidance documents (through decisions and other soft measures, guidelines)

› Awareness-raising campaigns

› Support tools (possibly IT based)

› Education and training actions

› Financial incentives (i.e. tax benefits or the possibility to offer reduction of insurance premium to reward organisations for going beyond the legal requirements).
Most accompanying actions and strategies aim at influencing behavioural changes, improving sector- and risk-specific knowledge and implementing legislation. According to the NIRs, the actions are, generally, not only aimed at the relevant social partners, at employers, or at workers, but also at the general public. It of course also depends on the type of accompanying actions, namely from supporting employers in their efforts (guidelines, national studies, online learning tools) to more concrete initiatives (consultations, informational campaigns, conferences and information days, networking events, sharing of best practice).

In all Member States, with no exceptions, guidance documents are by far the most common action undertaken in respect of supporting the implementation of the national legislation transposing the individual Directives, including the Framework Directive.

Awareness-raising campaigns and support tools are the next most common actions undertaken, while education and training actions are less often used. This trend applies to all directives and to all Member States.

The NIRs corroborate this conclusion, as Member States reported on a significant number of publications developed to support the implementation of the health and safety Directives, e.g. guides, information material, brochures and websites (section 2.1.2 NIR). The role of websites and online tools in disseminating information appears to increase. France especially has been very active in developing a wide range of support tools. They include a DVD on the field of prevention, a database gathering more than 18,000 reports of serious occupational accidents since 1999, the French version of the OIRA tool for risk assessment, and an online platform which gathers and makes available all information related to occupational health and safety (including targeted approaches to risk assessment and prevention).

A number of Member States also make use of financial incentives to encourage establishments to comply with safety and health provisions. For example, different types of financial incentives for enterprises are in place in Germany. None of these financial incentives can be attributed to a specific Directive as they are of a more general nature and aim at improving prevention measures in a company as a whole. Most common are insurance premium variations and tax incentives. Another example is Luxembourg, where one particular financial incentive is highly praised by stakeholders and especially in relation to SMEs. This is a programme led by the AAA (Accident Insurance Association), which targets enterprises using certain security management systems: under the programme, partial reimbursements of costs related to safety and health investments and to the acquisition of material (DVD, posters, etc.) related to promoting safety and health at work are provided for. Finally, France has also set a combination of various financial incentives, in particular, a) the Fund for the Improvement of Working Conditions (FACT) – managed by the Ministry of Labour, Employment, Vocational Training and Social Dialogue – which provides financial support for improving working conditions; b) the National Agreement of Prevention Objectives (CNOP) which supports enterprises with less than 200 workers to implement preventive measures; and c) the Simplified Financial Support targeting SMEs.

The number of accompanying actions varies greatly from Directive to Directive. The Framework Directive is covered extensively through guidance documents, support tools, campaigns and education and training activities. For the individual directives, the total number of accompanying actions across all Member States varies between approximately 240 (in relation to the Workplace Directive) to approximately nine (in relation to the Medical treatment on board vessels Directive). Other individual directives for which the highest number of accompanying actions has been
identified are Directive 89/656/EEC (Use of PPE), Directive 98/24/EC (chemical agents) and Directive 2009/104/EC (work equipment).


The Commission report on the implementation of the vessels-related directives already underlined the lack of available guidance documents, support tools and awareness-raising activities. The Commission noted: ‘To a large extent, the fishing sector’s small numerical and economic scale in some Member States justifies or explains the lack of attention given to developing instruments to publicise the provisions. In other Member States with bigger fishing sectors, the authorities responsible for publicising the provisions need to invest more resources and show more commitment’.

National stakeholders also mentioned other gaps, not related to a specific Directive but mainly to the need for more targeted guidance and information documents whereby the action is specifically directed towards certain sectors and, especially, SMEs. Stakeholders in nine Member States have highlighted the lack of accompanying actions targeting SMEs. Stakeholders indeed often call for the development of additional practical documents per sector, especially for SMEs, guiding them through the drafting of, notably, risk assessments. In that respect, some stakeholders stressed that it is more efficient to highlight and target one topic (risk) per year than to publish extensive reports and brochures. Given the overall lack of targeted accompanying documents on risk assessments across all sectors and groups of workers, stakeholders consider as a priority the development of information actions especially aim at supporting companies in conducting risk assessment and integrating them in a global OSH policy. Accordingly, the interviews at the national level led to the conclusion that, on one hand, stakeholders would like national authorities, both national and European, to provide more financial incentives. On the other hand, some stakeholders representing employers have stressed that there is no need to develop a checklist and strategy for each sector.

Further, many stakeholders have mentioned that, even though information is available, it is often uncoordinated and unsystematic. Dutch stakeholders suggest that the best accompanying assistance would be a ‘solution-oriented’ website that can be accessed with a search engine on the basis of the right keywords. It must be easy to use and provide a straight response to the question at hand – preferably based on a scan of the applicable OSH catalogues.

Finally, gaps were identified on particular issues such as the ageing workforce and psychosocial issues. This is corroborated by the relatively low number of accompanying actions identified for the directives which target vulnerable groups of workers.

With regard to the actual use of accompanying actions, the ESENER survey contains a question on whether establishments have used health and safety information from various institutions. The table below shows the average results (including the minimum and maximum of all results) of the responses to this question.

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(44) COM(2009)599 final
Table 4-28  Share of establishments using information from different sources (%)

<table>
<thead>
<tr>
<th>Source</th>
<th>Official OSH institutes</th>
<th>EU-OSHA</th>
<th>In-house health and safety services</th>
<th>The labour inspectorate</th>
<th>Employers' organisations</th>
<th>Trade unions</th>
<th>Contracted health and safety experts</th>
<th>Insurance providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average %</td>
<td>52.78</td>
<td>13.34</td>
<td>54.89</td>
<td>60.18</td>
<td>30.88</td>
<td>23.2</td>
<td>59.52</td>
<td>40.3</td>
</tr>
<tr>
<td>Min. %</td>
<td>12.70 (AT)</td>
<td>3.05 (AT)</td>
<td>36.81 (EL)</td>
<td>33.34 (EL)</td>
<td>12.83 (EL)</td>
<td>7.18 (EE)</td>
<td>33 (EE)</td>
<td>10.34 (DK)</td>
</tr>
<tr>
<td>Max. %</td>
<td>84.49 (DE)</td>
<td>34.92 (MT)</td>
<td>77.13 (RO)</td>
<td>86.12 (RO)</td>
<td>58.93 (IE)</td>
<td>62.92 (SE)</td>
<td>86.8 (ES)</td>
<td>72.84 (IE)</td>
</tr>
</tbody>
</table>

Source: ESENER, question MM173: Has your establishment used health and safety information from any of the following bodies or institutions?

Note: Only the responses from EU MS have been considered in relation to minimum and maximum scores.

The data indicate that the establishments use information materials and sources from a broad range of bodies. The data also show that establishments rely quite substantially on their in-house health and safety services and contracted health and safety experts. It can be noted that these services may very well rely on the materials and guidance produced at national and EU-level. Establishments also use regularly the accompanying actions (in particular health and safety information) produced by official institutions for health and safety at work.

National experts in the context of the Country Summary Reports have generally commented on the fact that, overall, sectoral tools, checklists, trainings, expertise and financial incentives are more effective than brochures aimed at raising awareness. National stakeholders have observed that various actors (national authorities, workers’ representatives, employers’ representatives, funds, association of prevention services, prevention services, etc.) publish brochures, but most of these fail to reach establishments other than large companies.

Practical tools, forms and check-lists that enable employers to comply with OSH obligations are considered by stakeholders as the most useful accompanying actions. The practical approach that aims at providing sectoral templates for risk assessment (e.g. OIRA) is welcomed by all stakeholders that recognise the potential for simplification and gain of time when using such tools.

Finally, with regard to awareness-raising campaigns, national stakeholders seemed to agree that long-term campaigns usually have a better impact than punctual ones.

4.4.2 Accompanying actions at the EU level

The European Union has initiated a number of accompanying actions to support the implementation of the Framework Directive and the OSH acquis as a whole. Apart from the Commission Guidance document on risk assessment at work (1996), there are also numerous other EU documents that provide guidance or guidelines on specific topics or risks. Notably, the

EU-OSHA has developed a number of accompanying actions, but as implied in Table 4-6 above, EU-OSHA information is the least used from all of the different types of information sources cited. Nevertheless, the Online interactive Risk Assessment (OiRA) IT tool has especially been mentioned by different Member States in their National Implementation Reports and pointed out during several Member State interviews as reported in the Country Summary Reports, as being very useful and well-regarded. It is a web-based platform specifically targeted at micro and small organisations to support them in the implementation of step-by-step risk assessment process. Cyprus has, for example, completed the implementation of this tool for hairdressers/barbers and office workers, and it is currently being expanded to cover butchers, catering and primary and secondary education sectors. Furthermore, the Department of Labour Inspection or other official OSH authorities seem to actively promote the OiRA, providing information on the operation of the tool to companies.

In addition, the ‘E-facts’ series of EU-OSHA contains online articles aimed at workers, employers and occupational safety and health professionals. They are intended to give a straightforward and practical overview on specific topics in OSH. Further, EU-OSHA has also established, for example, an e-learning module on the ‘manual handling of loads’ intended for all labour inspectors and keeps on publishing various guidance documents for workers, employers and safety and health professions on specific risks, such as MSD. Finally, and as already mentioned above, the Healthy Workplaces Campaigns organised by EU-OSHA aim at raising awareness of occupational safety and health related issues. Many Member States have actively supported these campaigns by using the opportunity to generate national level events to promote safety and health focusing on specific themes. However, as described below in the same section, there may be room for raising awareness as to the existence of such events amongst stakeholders at the national level.

Other European institutions have developed accompanying actions to support the implementation of individual OSH directives in specific sectors. The European Chemicals Agency (ECHA), for example, has published on its website guidance documents that are framed around REACH and that provide a useful source of information when implementing the Chemical Agents at Work Directive and the other chemical related OSH directives. Also, the European Maritime Safety Agency (EMSA) provides technical and scientific assistance to ensure proper application of EU legislation in the field of maritime safety, monitor its implementation, evaluate its effectiveness, organise training etc. EMSA has, for instance, published materials supporting good practice measures in regard to the training of personnel at sea.

It can therefore be concluded that a number of accompanying actions have been taken at the EU level to encourage the achievement of the safety and health targets of the OSH acquis as a whole.

Outside of the OSH acquis, there is also a non-binding guide to good practice for implementing Directive 2001/45/EC (work at a height) available.
There is a lack of guidance documents at the EU level in relation to particular individual directives, namely Directive 92/58/EEC (OSH signs), Directive 92/91/EEC (drilling) and the two vessel-related directives.

With respect to the implementation of Directive 92/58/EEC (OSH signs), no EU-level guidance documents have been identified. However, international standards organisations such as ISO (International Organization for Standardization) and CEN (European Committee for Standardization) have published a considerable amount of accompanying actions.

Similarly, no accompanying actions have been developed at the EU level in relation to Directive 92/91/EEC (drilling) covering mostly oil and gas activities. A possible reason might be that other global actors such as the International Council on Mining and Metals (ICMM), which is not covering oil and gas but metals and minerals, are developing international guides to good practice in the industry \(^{(46)}\). The 2013 evaluation of the Directive did conclude that additional guidance is needed. It also emphasised that more sharing and learning from experience across EU and EEA countries would be beneficial and lead to a more rapid implementation of the Directive and hence, better protection of the safety of workers (see, e.g., executive summary, p. 11).

Equally, a limited number of accompanying actions at the EU level was found for the two vessels directives (i.e. Directive 92/29/EEC (medical treatment on board vessels) and Directive 93/103/EC (fishing vessels)). This may be justified by the fact that global actors such as the International Labour Organisation (ILO) and the International Maritime Organisation (IMO) have developed influential guidelines. Also the World Health Organisation (WHO (2007)) has provided an international medical guide for ships targeted at first-aid providers to help them diagnose, treat, and prevent the health problems of seafarers on board vessels.

Although the sub-question on the use of the accompanying actions at the EU level has already been partly answered above, national stakeholder interviews have highlighted that the EU level guidance is unlikely to actually reach individual workers. Therefore, national guidance is seen as the actual catalyst for compliance – even though national guidance is often based upon EU-level guidance.

Of relevance as well is the level of awareness of the European Week for Safety and Health at Work in the different Member States. This awareness raising event is held each year in October and is a key focus of every Healthy Workplaces Campaigns. The ESENER1 survey included the following question: ‘Are you aware of the European Week for safety and health at work?’ (Question MM175). On average, 31.15 % of the respondents responded positively, although the results differ widely from one MS to another. Only 12.5 % of Swedish respondents are aware of this European Week, while, for the Czech Republic, this number climbed to 62.57 %. This overall rather low level of awareness suggests that further efforts should be made to promote this event.

### 4.5 Enforcement (MQ5)

**MQ5:** What are the enforcement (including sanctions) and other related activities of the competent authorities at the national level and how are the priorities set among the subjects covered by the Directives?

4.5.1 Enforcement authorities

The body competent for OSH inspections varies from one Member State to another depending on the institutional setting of the country. As a rule, the Labour Inspection is the main responsible authority (AT, BE, BG, CY, CZ, DE, EE, EL, ES, FR, HU, IT, LT, LU, LV, NL, PT, RO, SE, SI), or the main authority falls under the Ministry of Health (OSH inspectorates under the Ministry of Social Affairs and Health in Finland), or there is an autonomous authority dedicated to OSH (the Health and Safety Authority in Ireland and the Health and Safety Executive in the UK). In Poland, the enforcement responsibilities are shared between the labour and health authorities (the National State Labour Inspectorate and the State Sanitary Inspectorate). In Slovakia, while the National Labour Inspectorate is responsible primarily for safety aspects, the Public Health Authority is the main enforcement authority in relation to the chemical, biological and physical agents directives.

In two countries, the institutional setting is specific. Denmark has a rather atypical setting whereby responsibilities are distributed among the Danish Working Environment Authority, under the auspices of the Ministry of Employment, for work environment on land; the Danish Maritime Authority at sea; the Danish Energy Agency for offshore installations and the Danish Transport Authority for the civil aviation. In Malta, the main authority in charge of OHS legislation enforcement is the Occupational Health and Safety Authority OHSA under the authority of the Ministry for Social Dialogue, Consumer Affairs and Civil Liberties.

In most Member States, specific authorities are responsible for certain directives to varying degrees. This is typically the case with mineral-extracting industry directives, vessels directives, chemical agents directives and sometimes vulnerable workers directives. Other specific aspects, e.g. fire safety, may be covered by other inspection bodies.

For instance, in Slovenia, the Energy and Mining Inspectorate is in charge of mining operations and underground construction works using mining operation methods and the inspectorate competent for protection against natural and other disasters supervises the implementation of fire safety, rescue and evacuation measures. In Sweden, while the only authority in charge of OHS legislation enforcement is the Swedish Work Environment Authority, the Swedish Transport Agency supervises all shipping vessels, including working conditions on ships/vessels.

These authorities can be the only ones responsible for enforcement or share responsibility with the main authority in charge of the enforcement of OHS legislation. One example is the ATEX Directive in Finland, whereby the Finnish Safety and Chemical Agency is the enforcement authority while the OSH Inspectorates within the Regional State Administrative Agencies (Ministry of Social Affairs and Health), are responsible for all the other risks, workplaces and group of workers.

Even when there is no specialised inspection for certain sectors or issues, for several Member States, specialised units within the enforcement body deal with particular sectors, risks or groups of workers. For instance, Austria has labour inspectors dedicated to specific tasks or groups of workers, such as protection of young workers, construction sites, pregnant and breastfeeding workers and workers in the catering industry.

Most of the time, there is a combination of generic and specialised inspectorates. An illustration of this type of setting can be found in Belgium, where the main authority in charge of OHS legislation enforcement is the Directorate General for the Control of Well Being at Work under the Federal Public Service for Employment, Labour and Social Dialogue, and its eight regional directorates. Within the Directorate General for the Control of Well Being at Work, the Department for control on
chemical risks is specifically responsible for chemical risks, hence for the four chemical-related OSH directives. With regard to the two mineral-extracting directives, the competent authority for enforcement is the Federal Public Service Economy. For the two directives on vessels, it is the Federal Public Service Mobility who is responsible.

In most countries, inspection services operate at the regional or local level.

Three countries have different inspectorates for the public and the private sectors, which reflects the fact that they have implemented separate, distinct OSH legislation for the public and the private sector. There are: the Czech Republic (enforcement bodies subordinated to the Ministry of Interior and the Ministry of Defence), France (General Directorate of Administration and Public Services) and Luxembourg (the National Service for Occupational Safety of the Public Sector). Thus, Austria and Portugal, the remaining two MSs with distinct public sector legislation (ref. MQ1), do not also have separate enforcement inspectorates.

As shown in Table 4-29, there are significant variations between Member States regarding the number of labour inspectors and workers per labour inspectors. While the number of inspections remains constant and the number of workers per labour inspector has even slightly decreased, this general picture covers very diverse situations at the national level and there is no common trend across Member States. In some countries, it is clear that the resources devoted to inspections have been drastically cut. A significant decrease in the number of inspectors is accompanied by a substantial increase in the number of workers per labour inspector. This is the case in Sweden, where from 2007 to 2012, the number of inspectors has decreased sharply, from 359 full time inspectors to 250 full time inspectors. As a result, the number of workers per labour inspector has seen an impressive increase and employers are, on average, inspected once every 17.7 years (being once every 13.5 years in 2007). The sharply decreased budget of the Swedish enforcement agency, the Swedish Work Environment Authority, is probably the main reason. In contrast, countries as Malta or France have seen a considerable increase in the number of inspectors (respectively 56 % and 46 %), while the number of workers per labour inspector has decreased accordingly.
Table 4-29  Number of labour inspectors and workers per labour inspector

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of labour inspectors</td>
<td>Number of workers per labour inspector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT</td>
<td>308</td>
<td>312</td>
<td>1 %</td>
<td>12,739</td>
<td>13,091</td>
<td>3 %</td>
</tr>
<tr>
<td>BE</td>
<td>145</td>
<td>145</td>
<td>0 %</td>
<td>30,209</td>
<td>31,199</td>
<td>3 %</td>
</tr>
<tr>
<td>BG</td>
<td>383</td>
<td>325</td>
<td>-15 %</td>
<td>8,492</td>
<td>9,028</td>
<td>6 %</td>
</tr>
<tr>
<td>CY</td>
<td>29</td>
<td>21</td>
<td>-28 %</td>
<td>13,031</td>
<td>18,343</td>
<td>41 %</td>
</tr>
<tr>
<td>CZ</td>
<td>216</td>
<td>199</td>
<td>-8 %</td>
<td>22,787</td>
<td>24,573</td>
<td>8 %</td>
</tr>
<tr>
<td>DE</td>
<td>6,336</td>
<td>5,809</td>
<td>-8 %</td>
<td>5,996</td>
<td>6,735</td>
<td>12 %</td>
</tr>
<tr>
<td>DK</td>
<td>636</td>
<td>471</td>
<td>-26 %</td>
<td>4,408</td>
<td>5,708</td>
<td>29 %</td>
</tr>
<tr>
<td>EE</td>
<td>51</td>
<td>38</td>
<td>-25 %</td>
<td>12,894</td>
<td>16,182</td>
<td>25 %</td>
</tr>
<tr>
<td>EL</td>
<td>262</td>
<td>222</td>
<td>-15 %</td>
<td>17,420</td>
<td>18,343</td>
<td>41 %</td>
</tr>
<tr>
<td>ES</td>
<td>814</td>
<td>571</td>
<td>-28 %</td>
<td>16,581</td>
<td>11,414</td>
<td>-31 %</td>
</tr>
<tr>
<td>FI</td>
<td>450</td>
<td>421</td>
<td>-6 %</td>
<td>15,348</td>
<td>11,414</td>
<td>-27 %</td>
</tr>
<tr>
<td>FR</td>
<td>1,541</td>
<td>2,256</td>
<td>-46 %</td>
<td>16,581</td>
<td>11,414</td>
<td>-31 %</td>
</tr>
<tr>
<td>HU</td>
<td>121</td>
<td>102</td>
<td>-16 %</td>
<td>32,248</td>
<td>37,522</td>
<td>16 %</td>
</tr>
<tr>
<td>IT</td>
<td>77</td>
<td>93</td>
<td>21 %</td>
<td>27,878</td>
<td>19,761</td>
<td>-29 %</td>
</tr>
<tr>
<td>LT</td>
<td>353</td>
<td>307</td>
<td>-13 %</td>
<td>64,857</td>
<td>73,505</td>
<td>13 %</td>
</tr>
<tr>
<td>LU</td>
<td>202</td>
<td>196</td>
<td>-3 %</td>
<td>7,186</td>
<td>6,509</td>
<td>-9 %</td>
</tr>
<tr>
<td>LV</td>
<td>134</td>
<td>112</td>
<td>-16 %</td>
<td>8,822</td>
<td>10,265</td>
<td>16 %</td>
</tr>
<tr>
<td>MT</td>
<td>9</td>
<td>14</td>
<td>56 %</td>
<td>12,648</td>
<td>18,287</td>
<td>47 %</td>
</tr>
<tr>
<td>NL</td>
<td>287</td>
<td>260</td>
<td>-9 %</td>
<td>29,490</td>
<td>32,401</td>
<td>10 %</td>
</tr>
<tr>
<td>PL</td>
<td>1,416</td>
<td>1,634</td>
<td>15 %</td>
<td>10,763</td>
<td>9,541</td>
<td>-11 %</td>
</tr>
<tr>
<td>PT</td>
<td>283</td>
<td>391</td>
<td>38 %</td>
<td>17,995</td>
<td>11,629</td>
<td>-35 %</td>
</tr>
<tr>
<td>RO</td>
<td>526</td>
<td>571</td>
<td>9 %</td>
<td>17,782</td>
<td>15,070</td>
<td>-15 %</td>
</tr>
<tr>
<td>SE</td>
<td>359</td>
<td>250</td>
<td>-30 %</td>
<td>12,648</td>
<td>18,287</td>
<td>47 %</td>
</tr>
<tr>
<td>SI</td>
<td>36</td>
<td>33</td>
<td>-8 %</td>
<td>27,367</td>
<td>27,994</td>
<td>2 %</td>
</tr>
<tr>
<td>SK</td>
<td>260</td>
<td>298</td>
<td>15 %</td>
<td>9,068</td>
<td>7,815</td>
<td>-14 %</td>
</tr>
<tr>
<td>UK</td>
<td>2,610</td>
<td>2,420</td>
<td>-7 %</td>
<td>11,156</td>
<td>12,230</td>
<td>10 %</td>
</tr>
<tr>
<td>Total/average</td>
<td>17,867</td>
<td>17,882</td>
<td>0 %</td>
<td>12,226</td>
<td>11,982</td>
<td>-2 %</td>
</tr>
</tbody>
</table>

Source: The data on number of labour inspectors is from the NIRs except for Finland and Poland, where the data is from the Ministry of Social Affairs and Health (FI) and the report of Chief Labour Inspector on the activity of the National Labour Inspectorate (PL). The data on number of workers per labour inspector is calculated using Eurostat data on number of employed persons in the Member States (as the data presented by the Member States was in some cases inconsistent). By using the same source of data on number of employed persons, the indicator on number of workers per labour inspector is more comparable across the Member States.

4.5.2 Sanctions

Sanctions are a key element of the enforcement system. Sanctions are understood as administrative or criminal measures taken when an entity is in infringement with the law. Sanctions can be fines and imprisonment but also a range of other remedial and punitive measures, for example suspension of the activity or improvement notices. Table 4-30 depicts whether or not a Member State has set criminal sanctions (fines and imprisonment) and/or administrative sanctions (fines).
In most cases Member States have set both criminal and administrative sanctions, with a limited number of exceptions. Maximum sanctions vary significantly from one Member State to another. The highest imprisonment sanction identified is in the Portuguese legislation – 16 years in case of causing human death.

As a rule, the same sanctions apply across the whole OSH acquis. Traditional sanctions – fines and imprisonment – are complemented by a range of other sanctions or measures the inspectorate can take to ensure the breach of OSH requirements ceases as soon as possible. For example, in Luxembourg, the labour inspector can order the immediate cessation of work for the worker concerned in case of blatant breach of the rules on minimum age for work, working time and night work, compliance with the weekly rest, statutory holidays, or protective rules on the conditions of employment of pregnant/breastfeeding and young workers. When labour inspectors consider that a situation might constitute a threat to workers’ safety or health, they can require a technical check of machineries, changes to fix defects or work methods, stopping the activity of the workers at risk and evacuating the premises. These can be extremely effective sanctions.
However, when data is available (and this is rarely the case), case law on OSH matters seem rather limited. This can be partly due to a more pro-active policy of the enforcement authorities who, along their sanctioning functions, also privilege their preventive, advisory and support functions. A typical example of such an approach can be found in the UK where the enforcing authorities use a mixed intervention approach with duty-holders in which enforcement of the law is only one factor, alongside the provision of good practice advice, the use of awareness campaigns and work with stakeholders to influence behaviour change.

4.5.3 Setting of priorities for enforcement

The last part of the mapping question relates to the way priorities are set among the topics covered by the Directives. Priorities are not set according to Directives as such but rather according to the number of occupational accidents in specific sectors, i.e. where enforcement actions may bring effective results. For instance, the construction sector, which is characterized by a large number of work-related accidents, is often specifically targeted. The results of previous inspections or complaints are also often taken into account. Another criterion often featuring across Member States is the priorities set by strategic documents, both at national and EU-level, and sometimes also at regional level. Typically, the priorities will be set in annual inspection plans or instructions, often building upon overall strategic documents.

As a result, priorities are set per sector or sub-sector, group of workers, type of risks, and size of companies (e.g. several Member States focus on SMEs).

For example, in France, the Occupational Health Plans both at national and regional levels constitute the main strategic documents for enforcement. Another important strategic document is the National coordinated actions plan 2009-2012 for the Medical Insurance accidents at work/occupational diseases branch. Priorities are set in terms of the size of the companies targeted, the sectors, the groups of workers, and the type of equipment. Information and training, research and expertise, management and financing can also constitute priority areas for enforcement. The main criteria on the basis of which those priorities are established include risk assessment, the results of inspections, the national and regional Occupational Health Plans and the national coordinated action plan 2013-2016.

In Hungary, the National Labour Office issues annual inspection directives which set the main targets, areas and expectations for the year. Priorities are set in terms of sectors and groups of vulnerable workers. The selection of priorities is based on the European and national strategy on OSH and the annual reports of the labour inspections.

In some countries, priority setting builds upon overall targets. This is the case in Finland, where strategies for inspections are established by the Ministry of Social Affairs and Health through annual operational plans. These operational norms set objectives in terms of number of inspections and specific priorities. Each year, a reviewing report assesses the results obtained in application of the operational plan. Currently, the goals up to 2020 are: (1) decreasing the number of occupational diseases by 10 %; (2) decreasing the frequency of workplace accidents by 25 %; (3) decreasing perceived physical load due to work by 20 % and; (4) decrease perceived psychological load due to work by 20 %.
4.6 Vulnerable groups (MQ6)

MQ6: What are the differences of approach across Member States and across establishments with regard to potentially vulnerable groups of workers depending on gender, age, disability, employment status, migration status, etc., and to what extent are their specificities resulting in particular from their greater unfamiliarity, lack of experience, absence of awareness of existing or potential dangers or their immaturity, addressed by the arrangements under question?

4.6.1 Potentially vulnerable groups of workers

In order to answer MQ6, the scope of the question has been specified and is considered to cover the following vulnerable groups/specific groups of workers cover:

› Women
› Ageing workers
› Workers with disabilities
› Migrant workers
› Young workers
› Workers with a specific status: temporary workers, agency workers, self-employed working as employees.

4.6.2 Risk factors

Taking into account their specificities, the following risk factors are deemed relevant for these groups of workers and were considered during the mapping. These are the risk factors identified in the 2011 European Parliament Study on OSH risks for the most vulnerable workers\(^{47}\):

› Pregnancy; breastfeeding
› Menstrual disorders; Menopause
› Reduced physical capabilities
› Additional non-work activities e.g. childcare; house care
› Part-time jobs; precarious contract
› Natural deterioration of physical and mental capacities with age or infirmity
› Longer recovery time with age or infirmity
› Longer exposure to occupational hazards
› Increased risk of developing long-term or chronic illnesses or disabilities
› Different risks faced by disabled workers, related either to a decreased tolerance of the body part/function affected by the disability or an increased load on other body parts/functions
› Combined risks of occupational risk factors (e.g. standing and walking) on the effects of illness or disability (e.g. heart diseases)
› Less awareness of the risks amongst new (especially young) workers
› Lack of awareness of long-latency occupational diseases (e.g. asbestos-related disease)
› Work arrangements (temporary work, etc.)
› Language barriers

\(^{47}\) European Parliament Study on Occupational Health And Safety Risks For The Most Vulnerable Workers, carried out by Milieu and IOM (IP/A/EMPL/ST/2010-03).
Fear of authorities in migrant workers or other insecure groups leading to underreporting of OSH problems
Lack of OSH training, especially in temporary and migrant workers
Lack of familiarity with the working environment, especially for temporary, young and new workers

4.6.3 Coverage of vulnerable groups in legislation

The Country Summary Reports show that, as a rule, the national legislation does not go beyond the EU requirements – i.e. covering some groups in line with EU Directives, i.e. pregnant and breastfeeding workers, young people at work and temporary workers. In addition, the findings reveal that most Member States have general approaches to vulnerable groups, which are not targeted at specific Directives (except for the specific provisions of the following Directives, which are specifically designed to address vulnerable groups: Temporary workers Directive; Pregnant/breastfeeding workers Directive; Young People Directive). Other groups covered in line with EU legislation are women and workers with disabilities in line with Directive 2000/78/EC establishing a general framework for equal treatment in employment and occupation (the Employment Equality Directive). In addition, the OSH acquis itself includes provisions on workers with disabilities.

However, it seems that in some Member States, further requirements are set specifically in relation to OSH. For instance, the Finnish Gender Equality Act (as amended in 2005) promotes gender equality at workplaces, following a systematic approach through planning, monitoring and evaluation. It requires companies to develop an equality plan, with a particular focus on OSH issues. More specifically, sexual harassment, ergonomics and workplace design are considered the key issues to be addressed in the occupational equality plan. The Act also contains provisions on supervision and sanctions in case of violation of its dispositions. Furthermore, some specific projects have been funded by the Government, which focus on atypical employment contracts for women, sickness absence, work ability and return to work after maternal leave, as well as work/life balance and engagement of women who survived cancer.

Other categories of workers for which national legislation provides specific protection in terms of occupational health and safety are trainees (e.g. BE), part-time workers (e.g. BG), migrants (e.g. ES) and older workers (e.g. LU, where legislation on older workers is currently being considered).

4.6.4 Other initiatives targeting vulnerable groups

In most Member States, different strategies, programmes, guidance and initiatives target a number of vulnerable groups, as per the examples provided below.

The Austrian labour inspectorate has conducted campaigns on ageing workers/sustainable work at all ages, promoting guidance and tools available on the labour inspection website. It also provides special information and leaflets targeting young workers.

In Belgium, a series of guidance issued by the Federal Public Service for Employment, Labour and Social Dialogue targets different types of vulnerable workers (including older workers; young workers in their first job; part-time workers; temporary, high flexibility workers and agency workers; parents).
The Czech State Labour Inspection Office has implemented a national strategy on gender and OSH, aiming to include gender specific considerations in OSH work. Pragmatic actions include adaptation of PPE to physical characteristics and respect of ergonomic requirements; adaptation of working conditions, prevention of health risks and control of workloads for pregnant and breastfeeding women, and other sector-specific measures.

In France, the industry-wide agreement on the health and safety of temporary employees, which was signed on 26 September 2002 and is currently being renegotiated by the social partners, is designed to foster the development of occupational risk prevention with a view to protecting health and ensuring the safety of both permanent and temporary employees of temporary employment agencies. The French second Occupational Health Plan includes several actions targeting specific groups of vulnerable workers, namely ageing workers, temporary workers and the self-employed.

In the UK, the Health and Safety Executive’s website includes a section devoted to vulnerable workers (defined as workers who are at risk of having their workplace entitlements denied, and who lack the capacity or means to secure them) includes managing questions of race and migrant workers, disabled people, gender issues, older workers, and workers new to the job.

### 4.6.5 Mixed views on the need for specific action

While the need for specific action is recognised, some advocates a general approach, which would apply to all without targeting in particular vulnerable workers.

The European Parliament has concluded that attention to vulnerable groups is particularly important in light of the major social and economic changes underway in Europe, including an ageing workforce, higher employment rates for women, a greater number of migrant workers, and a greater use of temporary contracts. Furthermore, it emphasised that recent European policy initiatives provide additional impetus towards addressing vulnerable groups, e.g. the EU 2020 strategy which calls for an increase in workforce participation during this decade, including older workers and women. However, the European Parliament stated that there is scope for further EU action to reduce occupational safety and health risks for vulnerable workers. Possible actions include: the inclusion of domestic workers within the scope of the Framework Directive and other OSH Directives where relevant; promotion of age management in enterprises, e.g. the development of guidelines for SMEs; emphasising the importance of an integrated approach to disability, focusing on both prevention and reintegration; development of tools such as educational programmes targeting students; promotion of the translation of OSH documents into major languages used by migrant workers; greater attention to the long-term health surveillance of temporary workers; and the consideration of suggested means to encourage and track OSH training for temporary workers, such as ‘passports’ containing information on the training carried out by the worker in his or her previous positions.

Conversely, some stakeholders have expressed the opinion that specific actions targeting vulnerable workers are not needed as OSH management should be tailored to individual needs and circumstances. In the Netherlands, interviewed stakeholders agreed that it is not wise to make special arrangements for specific vulnerable groups, as OSH measures in general must always tailor-made and individual characteristics and requirements must always be considered. This is the

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(48) Ibid.
approach followed by the Danish Working Environment Authority and other European OSH actors in general, whereby the work environment should be designed and organised for everybody, considering there is no need for specific approaches to vulnerable groups apart from what is already included in the EU-legislation, as this would most likely lead to exclusion of the labour market.

4.7 SMEs and microenterprises (MQ7)

MQ7: What measures have been undertaken by the Member States to support SMEs and microenterprises (e.g. lighter regimes, exemptions, incentives, guidance, etc.)?

As stated in the Preamble to the Framework Directive, OSH-related Directives, especially in the working environment, must avoid imposing administrative, financial and legal constraints which would hold back the creation and development of small and medium-sized undertakings. As a result, the Framework Directive explicitly includes that the size of the undertaking and/or establishment should specifically be taken into account with regard to the CPMs preventive and protective services, risk assessment (in particular related to the drawing up of specific documents), and information for workers. Therefore, the mapping question focuses on the identification of measures adopted by Member States, i.e., the national authorities, in order to assist SMEs and micro-enterprises in the implementation of OSH requirements. Measures provided by other actors, such as social partners, are not included. The concept of ‘measures’ is considered covering national legislation and soft measures, i.e. incentives. Other measures such as guidance documents are included in MQ4.

The national experts of the Country Summary Reports were asked to check three elements for each Directive:

› Exemptions: are there thresholds of number of workers to be exempted from certain key requirements? If so, what are the thresholds? To what requirements does it apply?

› Lighter regime: are certain norms/regulatory standards provided by law differentiated for SMEs?

› Incentives: have financial measures/tax reductions been adopted to support SMEs?

These are important questions as the National Implementation Reports made clear that many Member States assess that SMEs in particular face difficulties implementing the Directive’s (and transposed national legislation’s) requirements in their establishments. In particular, as the Member States are widely differentiated, not only in terms of national legislation, but also with regard to key characteristics such as size, sectors, geography and organisational structures. The ‘one size fits all’ model presented in the Directives proves problematic or even irrelevant for many Member States. An additional difficulty relates to the lack of a coherent methodology for risk assessments and the lack of training of inspectorate officials in order to acquire the necessary knowledge and technical skills to support the SMEs in the implementation of the formal requirements set by the Directives. Although being general problems, the National Implementation Reports show that they are especially relevant to SMEs, which face heavy administrative burdens and a lack of financial and human resources – especially to record risk assessments.
The Belgian NIR states the following: ‘A large share of small, micro and medium-sized undertakings experience difficulties organising the management of safety and health at work and have insufficient or no knowledge about safety and health at work; the risks are inadequately distributed between large and small undertakings.’ This point has been corroborated in the Hungarian NIR, which says: ‘SMEs often misinterpret the provisions of legislation or Directives and only attend to their obligations as a result of an inspection or following an accident.’ The Polish NIR emphasises the lack of financial resources in SMEs: ‘Among reasons for irregularities identified during checks, employers often indicate the lack of sufficient financial resources necessary to meet all requirements concerning safety and health at work, as well as to introduce organisational measures.’ The Cyprus NIR summarises the point nicely: ‘The practical difficulties encountered in ensuring that the directives achieve their aims relate to the inability of small businesses to comply with the requirements of the directives, due to the lack of know-how, equipment, appropriate means, suitably qualified staff, and capital.’ Finally, in the Estonian NIR, the increase in the administrative burden and high costs associated with health and safety coordination are singled out.

Many national authorities acknowledge that they face particular problems in reaching micro-enterprises and SMEs about occupational safety and health issues; and especially those that are not part of a business federation.

Overall, the Country Summary Reports show that this contributes to a high degree of non-compliance among micro-enterprises and SMEs, notwithstanding the fact that evidence is rather limited. Besides, interviews with national stakeholders revealed that the exceptions to this are SMEs that are doing well financially and that are well aware of safety and health in the workplace, or are working in high-risk areas. Furthermore, SMEs that are subcontractors for large establishments with integrated quality systems under stricter control by inspectorates also tend to better observe safety and health regulations.

The table below shows that the Member States, to a varying degree, have made use of measures to support SMEs and microenterprises mainly in complying with the national legislation transposing the Framework Directive provisions. In particular, these provisions (lighter measures, etc.) primarily address general OSH provisions, largely adopted within the Framework Directive, but in practice extending across the whole OSH acquis. Member States tend to favour lighter regimes and financial incentives to support SMEs and microenterprises. Note in this context that the SMEs and microenterprises in many Member States make up the majority of the enterprises, and so they are in practice already targeted by the general key requirements.
### Table 4.31 Exemptions, lighter regimes and financial incentives for SMEs and micro-enterprises

<table>
<thead>
<tr>
<th>Directive</th>
<th>MSs who provide exemptions</th>
<th>MSs who provide lighter regimes</th>
<th>MSs who provide incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 89/654/EEC (workplace)</td>
<td>ES</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 2009/104/EC (work equipment)</td>
<td>-</td>
<td>-</td>
<td>FR, CY</td>
</tr>
<tr>
<td>Directive 89/656/EEC (Use of PPE)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 92/58/EEC (OSH signs)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 1999/92/EC (ATEX)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 90/269/EEC (manual handling)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 90/270/EEC (display screen equipment)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 2002/44/EC (vibration)</td>
<td>-</td>
<td>-</td>
<td>BE</td>
</tr>
<tr>
<td>Directive 2003/10/EC (noise)</td>
<td>-</td>
<td>-</td>
<td>BE</td>
</tr>
<tr>
<td>Directive 2004/40/EC (electromagnetic fields)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 2006/25/EC (artificial optical radiation)</td>
<td>-</td>
<td>-</td>
<td>BE</td>
</tr>
<tr>
<td>Directive 2004/37/EC (carcinogens or mutagens)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 98/24/EC (chemical agents)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 2009/148/EC (asbestos)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 2000/54/EC (biological agents)</td>
<td>DE</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 92/57/EEC (construction)</td>
<td>MT, SE</td>
<td>-</td>
<td>CY</td>
</tr>
<tr>
<td>Directive 92/104/EEC (mines and quarries)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 92/91/EEC (drilling)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 92/29/EEC (medical treatment on board vessels)</td>
<td>-</td>
<td>SE</td>
<td>-</td>
</tr>
<tr>
<td>Directive 93/103/EC (fishing vessels)</td>
<td>-</td>
<td>SE</td>
<td>BE</td>
</tr>
<tr>
<td>Directive 92/85/EEC (pregnant/breastfeeding workers)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 91/383/EEC (temporary workers)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Directive 94/33/EC (young people)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Austria and the UK have not provided any specific measures directed to SMEs and micro-enterprises. As an Austrian stakeholder has noted during the interview: ‘SMEs are naturally addressed within the measures taken and therefore special regimes are not common’. Also Cyprus did not take any specific measures, apart from establishing a financial incentive for building contractors.

Eleven Member States have introduced specific exemptions for SMEs and micro-enterprises to the key requirements laid down in the Framework Directive. The majority of these exemptions relate to:

- exemption from the obligation to have an OSH Committee or similar organisation (BG, DK, ES, FI, SK). Note this exemption may account for a small proportion of the lower number of micro establishments to have an OSH committee as discussed in MQ3 above.
- exemption from the obligation to have a health and safety representative (FI) or worker representative (FR)
- the non-obligatory nature to comply with the requirements on training of workers, consultation of workers and information for workers (CZ)
- (written) documentation of risk assessments (DE until 2013, SE) or OSH corporate policy (SK)

All of these exemptions are inherently connected to the number of workers in the establishment. On average, the exemptions will apply in those enterprises with less than 11 workers.\(^{(49)}\)

Fifteen Member States have established a lighter regime for SMEs and micro-enterprises. This lighter regime often relates to:

- different types of preventive and protective services are to be set up depending on the size of the enterprise (BE, DE, ES, LV, LT, LU, NL, PT, RO, SL). For example, the employer himself can be the safety expert if he employs fewer than 15 workers.
- the participation of workers in the OSH policy (BE, SL)
- setting up a standard risk assessment (IT)
- simplified procedures for compliance for SMEs operating in the agricultural sector (IT)
- simplified documentation (ES)

The lighter regimes mentioned above can generally only be applied provided that – where applicable – the appointed safety officers have received special training or have the necessary qualifications. In addition, lighter regimes are generally not applicable in establishments where there are high occupational (or other) risks.

\(^{(49)}\) Please note that a large majority of the data on SME compliance and employee representation, which was assessed above (ESENER) is based on a survey population which does not encompass establishments with less than 10 workers. These exemptions therefore do not affect the evaluation findings presented above to any noteworthy extent.
Almost half of the Member States make use of financial incentives for SMEs and micro-enterprises to comply with the Framework Directive. There is not really a ‘trend’ in the type of financial incentives offered and the following therefore gives a Member State specific overview:

- **BE**: reduced costs related to external preventive and protective services
- **BG**: financed programmes for risk assessment in certain sectors and extra financial compensation from health insurance
- **EE**: financial support for risk assessment
- **EL**: fund for training of workers and financial aid directed to certain sectors
- **ES**: financial incentives in reducing the contribution for companies that have improved the prevention of accidents at the workplace
- **FR**: fund for the modernisation of enterprises in order to improve working conditions, fund to implement risk prevention measures, support at local level to help implement preventive measures, as well as various funds for workers with disabilities
- **IT**: fund for training workers in the agricultural sector and fund for the adoption of organisational models and social responsibility (and related investment projects), and since 2013, a fund for the replacement or adjustment of work equipment
- **MT**: tax credits covering certain investments
- **NL**: external service should not check the risk assessment
- **PT**: health at work is to be ensured by the National Health Service and there is financial support for training of workers
- **RO**: *de minimis* aid scheme

No exemptions, lighter regimes or financial incentives are established by any of the Member States in the national legislation transposing Directives 89/656/EEC (PPE), 92/58/EEC (OSH signs), 1999/92/EC (ATEX), 90/269/EEC (manual handling), 90/270/EEC (display screen equipment), 2004/40/EC (electromagnetic fields), 2004/37/EC (carcinogens or mutagens), 98/24/EC (chemical agents), 2009/148/EC (asbestos), 92/104/EEC (mines and quarries), 92/91/EEC (drilling), Directive 92/85/EEC (pregnant/breastfeeding workers), Directive 91/383/EEC (temporary workers) and 94/33/EC (young people). It should, however, be noted that the particular measures to support SMEs and micro-enterprises in the implementation of their legislation transposing the Framework Directive are equally applicable, given that they relate to procedural aspects which apply to any SMEs whatever are the risks or types of workers involved. Also, several Member States have explained that they do not find additional support to be necessary, as practically all enterprises in these Member States are SMEs and there is hence no need to draw any distinctions (see, e.g. the Spanish NIR).

Specific financial incentives are established by BE, FR, CY to support SMEs and micro-enterprises in the implementation of their legislation transposing Directives 2002/44/EC (vibration), 2003/10/EC (noise), 2006/25/EC (artificial optical radiation) and 93/103/EC (fishing vessels) – for Belgium; and
Directive 2009/104/EC (work equipment) – for France and Cyprus; and Directive 92/57/EEC (construction) – for Cyprus. In Belgium, for example, the Funds for national diseases offers the services of technical experts for assessing physical agents such as noise, vibration and AOR, as part of a programme of preventive advice. In Cyprus, a 2008 grant scheme for building contractors in SMEs was introduced in order to improve the Cypriot metal scaffoldings industry.

SE provides a lighter regime for SMEs implementing the two vessels Directives, where Swedish legislation has introduced separate levels of medical competence on board ships, depending on their size, the available crew and the time away from land.

Finally, there are four extra exemptions foreseen for SMEs and micro-enterprises implementing the national legislation transposing individual Directives. They relate to Spain, with regard to Directive 89/654/EEC (workplace), as companies employing less than 50 people are not required to have a first-aid location; Germany, with regard to Directive 2000/54/EC (biological agents), as risk assessment documentation is only required when working with biological agents of risk group I; Malta in relation to Directive 92/57/EEC (construction), for which Malta foresees exemptions to the Prior Notice and Health and Safety Plan for short-duration construction works; and Sweden, with regard to Directive 92/57/EEC (construction), where a work environment plan is only required for certain sizes of construction works.

Apart from the above mentioned exemptions, lighter regimes and financial incentives, while there are very few additional accompanying actions addressed specifically to SMEs, most Member States and/or social partners strongly emphasise the considerable number of accompanying actions, organised awareness-raising events and training sessions (sometimes with the cooperation of inspectors), which can help SMEs better understand the legal requirements laid down in the Directives and ultimately comply with such requirements more easily and effectively. In general, the additional measure most commonly praised by SMEs were the development of publications, folders, brochures and circulars, websites and educational activities, training programmes and workshops, which all aim to expand the SMEs' knowledge of health and safety issues in the workplace, thus enabling preventive measures. However, these kind of measures are mostly applicable to all enterprises regardless of the size, but can be of particular relevance to SMEs with a view to facilitate the implementation of OSH requirements and reduce the burden of compliance.

Some examples illustrate the importance of accompanying actions for SMEs. In Spain, the National Institute of Hygiene and Safety at Work, in collaboration with the Autonomous Communities, launched ‘Prevención 10’, a free public advice service on prevention of occupational risks for micro-companies and the self-employed. It is considered to be an important tool to help employers and the self-employed learn the measures to be taken in order to prevent occupational risks and comply with the Law on Occupational Risks Prevention. Belgium has developed a particular tool for the management of occupational risks and for a dynamic and effective risk management, called SOBANE (Screening, Observation, Analysis and Expertise). The methods developed for SOBANE are being developed in function of the means and competences which are available in SMEs. The Polish Central Institute of Labour Protection-National Research Institute, on its turn, is the coordinator and main executor of the long-term ‘Programme for the improvement of work safety and work conditions’, under which several pieces of research were conducted and soft measures have been elaborated. The latter include, in particular, guidelines, control procedures, checklists, textbooks and IT applications. This programme was established in 2007 and is currently in the third phase of execution. The Institute has developed a website dedicated to micro-enterprises, providing access to information on safety and health in the working environment to the smallest
and most numerous companies in Poland. Further in Poland, the implementation of individual Directives across SMEs is supported under accident-prevention activities financed from a dedicated Accident Fund of the Social Insurance Institution. These activities include, for example, the organisation of training sessions on OSH and risk prevention. The courses are organized all over the country and they concern issues related to the prevention of risks in the working environment. On average, they gather around 1000 attendees.
5 Assessment of relevance

In accordance with the Task Specification, this chapter presents the extent to which the aims of the Directives are up-to-date in addressing the needs and issues related to the health and safety of workers (current relevance) and examines evidence relating to their relevance in the medium term to a horizon of around 2020 (future relevance). To some extent, the distinction between relevance and effectiveness (created within the ToR) is not always clear. Thus, a change to a Directive which, it is felt, will increase its relevance is also likely to improve its effectiveness. Similarly, changes to improve the future relevance of a Directive will probably also impact on current relevance (or vice versa).

**EQR1**: To what extent do the Directives adequately address current occupational risk factors and protect the safety and health of workers?

**EQR2**: Based on known trends (e.g. new and emerging risks and changes in the labour force and sectoral composition), how might the relevance of the Directives evolve in the future, and stay adapted to the workplaces of the future in light of the horizon of 2020? Does the need for EU-level action persist?

5.1 Summary of method adopted to establish relevance

The first task in establishing the relevance of any Directive was to determine how many of the MSs it was of relevance to. The fact of transposition into national legislation was not sufficient for this because, as is apparent from the NIRs, some MSs have transposed directives which are then stated as not being of relevance to them. The first criterion to be applied therefore is whether there are workers and /or sectors in each of the MSs where relevant hazards might be encountered. In doing this it is not necessary to identify all such sectors, simply that some at least exist in each MS.

Following this, the second criterion was to estimate the proportion of the EU-27 workforce to which the provisions of the Directive were potentially relevant. Some directives applied to all (or most) sectors whilst others were sector-specific. In other cases, especially for the hazard-specific directives, it was necessary to determine the main sectors (or sometimes sub-sectors) where that hazard might be encountered. There are often a variety of sectors and occupations where exposure to a specific hazard is possible, usually for small, select sub-groups of the workforce. In some cases, however, each of these represents a specialist sub-group within a sector making it difficult to establish the numbers of workers potentially exposed. In order to provide an approximate estimate of the proportion of the EU-27 workforce possibly exposed to a hazard, without estimating
numbers in such subsectors, a procedure was adopted whereby the whole employment figure was adopted for those sectors where the majority can be assumed to be at risk of exposure (not necessarily exposed) and to omit those in relatively small subsectors. This clearly resulted in, on the one hand, an overestimate of those potentially at risk by including all workers in largely relevant sectors and, on the other hand, an underestimate due to those sub-sectors omitted. However, it was considered that this provided a reasonably accurate overall estimate, where the intention was to provide a broad view of the proportion of the workforce covered, rather than any detailed calculation.

Where possible, LFS data was used as the basis for these estimates. For those Directives for which the LFS data did not provide a sufficiently detailed breakdown of sector or other information, other sources such as the SBS database were used to provide that breakdown, applying the proportion calculated from that to the figures from the LFS. In a few cases, other approaches were available. For example, in some instances, EWCS survey data was used to determine the proportion of the workforce reporting exposure to physical agents such as noise. The specific procedure adopted for each directive is presented in the relevant Directive report and summarised in the section on that Directive below.

Subsequent criteria related to indicators of the extent to which the hazards or risks addressed by a Directive remained a potential problem. This was explored by examining information relating to the occurrence of injuries or diseases which could be related to exposure to the hazard, or data giving some insight into ongoing exposure to the potential hazard in question. Again, multiple sources were explored in an attempt to identify appropriate data. Although in some instances, such as the Framework Directive, that was relatively straightforward because of the global applicability of its provisions, most presented more of a challenge.

An overarching theme to emerge from almost all of the individual Directive reports is the challenge presented by the inadequacies of the EU data sources for injuries and, in particular, for work-related illnesses. This creates serious difficulties in finding data which documents injuries and diseases specific to the provisions of the individual directives. Still harder is relating any such statistics to the causal factors addressed by the directives in order to establish any degree of attribution. In many cases, therefore, strong reliance is placed on the expressions of opinions regarding the current relevance of each Directive, collected during interviews with stakeholders and experts at both EU and MS level, together with any Directive-specific comments in the NIRs.

Establishing future relevance was, by its nature, based less on formal data and more on expert projections of what was anticipated to be the situation in the next five years. Some attention was directed towards the various published expert opinions on new and emerging risks. In respect of some directives, consideration was given to the extent to which changes to the existing provisions of directives were considered necessary in order to ensure that they remained relevant in the future. Again, sources are documented in detail in the individual Directive reports and summarised below.

### 5.2 Summary of the five relevance parameters across all Directives

**Error! Reference source not found.** presents a summary of the five main parameters used to assess current relevance, drawn from the individual directive reports. It lists each of the Directives and summarises the results for the main criteria. It will be noted that, for many directives, it has not
been possible to summarise some data into a single figure. Full details for these are presented in the report on that individual Directive and summarised in the section on that Directive below.

The table shows that most Directives are seen as relevant in all MSs and that the estimated proportion of the workforce to whom they are potentially relevant varies from less than 1 % to 100 %. Data on accidents and health problems are complex and are summarised in the directive-specific text below and presented in more detail in the individual Directive reports.

Table 5-1 Summary of the five relevance parameters across all Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Coverage of Workforce and MSs</th>
<th>Accidents and health problems</th>
<th>Work-related health problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of MS where the Directive is potentially relevant</td>
<td>Proportion of EU workforce to whom the Directive is potentially relevant</td>
<td>Fatal accidents at work (per 100,000 employed)</td>
</tr>
<tr>
<td>General Directives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>89/391/EEC (framework)</td>
<td>27</td>
<td>100 %</td>
<td>1.82</td>
</tr>
<tr>
<td>89/654/EEC (workplace)</td>
<td>27</td>
<td>99.6 %</td>
<td>n/a</td>
</tr>
<tr>
<td>2009/104/EC (work equipment)</td>
<td>27</td>
<td>100 %</td>
<td>n/a</td>
</tr>
<tr>
<td>89/656/EEC (Use of PPE)</td>
<td>27</td>
<td>38-40 %</td>
<td>n/a</td>
</tr>
<tr>
<td>92/58/EEC (OSH signs)</td>
<td>27</td>
<td>100 %</td>
<td>n/a</td>
</tr>
<tr>
<td>Type-of-worker Directives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92/85/EEC (pregnant/breastfeeding workers)</td>
<td>27</td>
<td>33 %</td>
<td>&lt;0.26</td>
</tr>
<tr>
<td>94/33/EC (young people)</td>
<td>27</td>
<td>0.5 %</td>
<td>0.93</td>
</tr>
<tr>
<td>Sector-specific</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(50) n/a – not applicable or not available – see text.

(51) All women of child-bearing age, not necessarily those who are pregnant.

(52) This percentage is based on data from responses to the relevant question in EWCS 2007 data; this differs from most of the Directives where the LFS data is used.

(53) In addition, the Directive is relevant to the 15.4 % of the EU-27 population under 15 years who are banned from working by the Directive.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>Directives</th>
<th>Count</th>
<th>Percentage</th>
<th>Risk Level</th>
<th>Number of Estimated Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>92/57/EEC (construction)</td>
<td>27</td>
<td>7.2%</td>
<td>6.18</td>
<td>3138.36</td>
</tr>
<tr>
<td>92/104/EEC (Mines and Quarries)</td>
<td>27</td>
<td>0.32%</td>
<td>10.6</td>
<td>1,601</td>
</tr>
<tr>
<td>92/91/EEC (drilling)</td>
<td>-26</td>
<td>0.05%</td>
<td>n/a</td>
<td>See Section 4.1</td>
</tr>
<tr>
<td>92/29/EEC (medical treatment on board vessels)</td>
<td>23</td>
<td>0.9%</td>
<td>1.82</td>
<td>926.86</td>
</tr>
<tr>
<td>93/103/EC (fishing vessels)</td>
<td>22</td>
<td>0.05% - 0.14%</td>
<td>16.87</td>
<td>2,767.18</td>
</tr>
<tr>
<td>Hazard-specific Directives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90/269/EEC (manual handling)</td>
<td>27</td>
<td>52.1%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>90/270/EEC (display screen equipment)</td>
<td>27</td>
<td>52.76%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>1999/92/EC (ATEX)</td>
<td>27</td>
<td>1.4%</td>
<td>4.6&lt;sup&gt;(55)&lt;/sup&gt;</td>
<td>120&lt;sup&gt;(56)&lt;/sup&gt;</td>
</tr>
<tr>
<td>2002/44/EC (vibration)</td>
<td>27</td>
<td>21% - 22%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2003/10/EC (noise)</td>
<td>27</td>
<td>25-30%</td>
<td>0</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2004/40/EC (electromagnetic fields)</td>
<td>27</td>
<td>3.7%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2006/25/EC (artificial optical radiation)</td>
<td>27</td>
<td>1.6% - 3.3%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2004/37/EC (carcinogens or mutagens)</td>
<td>27</td>
<td>12.3%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>98/24/EC (chemical agents)</td>
<td>27</td>
<td>50%</td>
<td>n/a</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2009/148/EC (asbestos)</td>
<td>27</td>
<td>7.2%</td>
<td>5,000&lt;sup&gt;(57)&lt;/sup&gt;</td>
<td>See Directive report</td>
</tr>
<tr>
<td>2000/54/EC</td>
<td>27</td>
<td>20.4%</td>
<td></td>
<td>See Directive report</td>
</tr>
</tbody>
</table>

<sup>(54)</sup> Few, if any of these health problems are directly addressed by the provisions of the Construction Directive.

<sup>(55)</sup> Estimated for relevant manufacturing subsectors only.

<sup>(56)</sup> Estimated for relevant manufacturing subsectors only.

<sup>(57)</sup> Estimated deaths in 1998.
5.3  General Directives

5.3.1  89/391/EEC Framework Directive

Number of MS where the Directive is potentially relevant
In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. The Framework Directive clearly falls into this category.

Proportion of EU workforce to whom the Directive is potentially relevant
Turning to the labour market, determination of the proportion of the labour market covered by the provisions of the Framework Directive is a matter of establishing the number of persons employed within relevant sectors. As the provisions of this directive apply in all sectors, they are therefore relevant to all EU workers in all sectors (100 %) which according to LFS data for 2012, amounts to 215,678,600 people (15-74 years) \(^{(58)}\).

Extent of current risks to health and safety
Across all sectors, 2012 statistics show that almost two workers (1.91) were killed at work for every 100,000 employed and over 1,500 injured. Incidence rates aren’t available that would permit these statistics to be broken down by size of enterprise although, as an indication, 169 fatalities were recorded in enterprises employing zero workers (presumably the self-employed) and over 500,000 injuries documented amongst enterprises employing 1-9 workers.

From the LFS, across all sectors, 3.0 % of respondents reported that they had experienced an accident at work whilst 12.8 % of respondents across all sectors reported one or more work-related health problems in the past 12 months. As an indicator of the severity and impact of ill health, 42.7 % of those having reported a work-related health problem indicated that they had required time off work as a result.

Current and future relevance
These statistics on fatal and non-fatal accidents, as well as work-related health problems, summarised above and described in more detail in the Directive report, clearly demonstrate the current relevance of the Framework Directive in helping to improve workplace safety and health. Hence, work-related injuries and ill-health have caused, and are still causing, burdens to individual workers, to their employers, and to the wider society.

On the basis of limited data on fatal accidents, there would also appear to be a relevance of the Directive to the self-employed, an issue which is discussed in more detail below (Section 5.1.7). Extension of the provisions of this Directive to cover the self-employed would, it seems, increase the reach and effectiveness of the Directive and help to improve the safety and health of this important subgroup. However, there is no great support for what might be seen as increasing the

\(^{(58)}\) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000  [Ifsa_egan2.]
relevance of the Directive further by widening the scope – for example, by removing the specific exclusion on the military or police where there is a possible conflict.

The Directive will remain relevant in the future, regardless of the developments in safety and health at work in the EU. Old risks will decline and new risks will emerge, with increasing attention to e.g. nanomaterials and psychosocial risks, as well as to an ageing workforce, increased use of green technologies and alternative energy sources, and the self-employed.

5.3.2 89/654/EEC Workplace Directive

Number of MS where the Directive is potentially relevant

In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. The Workplace Directive clearly falls into this category.

Proportion of EU workforce to whom the Directive is potentially relevant

Turning to the labour market, determination of the proportion of the labour market covered by the provisions of the Workplace Directive is a matter of establishing the number of persons employed within relevant sectors.

As the provisions of this directive apply in all sectors they are therefore relevant to all EU workers in all sectors (100 %) which according to LFS data for 2012, amounts to 215,678,600 people (15-74 years) (59).

For the Workplace Directive, there are exclusions. Most of these relate to subsectors or parts of different sectors for which no information on employment numbers is available. Additionally, although the main workplace of some individuals might be covered by one of these exclusions, (for example workplaces inside means of transport) they might still work in relevant workplaces at times. It was considered therefore that the only excluded group which can be determined with any certainty is the extraction industry sector, encompassing 0.37 % of the EU-27 workforce leaving approximately 99.6 % for whom this Directive is potentially relevant.

Extent of current risks to health and safety

The provisions of the Workplace Directive cannot readily be related to specific safety or health outcomes and these data cannot therefore be considered in establishing its current relevance. Few stakeholders expressed strong views regarding this Directive although comments in the NIRs seemed to suggest that the scope and application of the Directive are appropriate (and thus remained relevant). A small number of MS questioned the need for two Annexes, as that relating to existing workplaces should now be complied with throughout. However, repealing this would presumably cause problems with the accession of any new MS to the EU. Several comments were received relating to possible changes to the Directive. However, these have been interpreted as relating to enhancing the relevance of the Directive in the future and are addressed below.

Current and future relevance

One area of uncertainty in relation to occupational health and safety lies with those workers who are self-employed. As they are neither workers (any person employed by an employer) nor

(59) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2.
employers, they are not obviously covered by the provisions of the Framework Directive and, indeed, largely fall outside the scope of EU OSH legislation. Although this exclusion is not necessarily reflected in individual Member States, self-employment is nevertheless seen as an OSH challenge.

The difficulties encountered in identifying appropriate data to establish the scale of the problem are reflected in comments made in an EU-OSHA report on accidents and illnesses amongst the self-employed that ‘the available statistics present significant shortcomings’.

The report uses ESAW data which, it states, shows that, when taking all sectors together there is no great difference in the incidence rate of fatal accidents among workers, compared with the self-employed. However, this overall figure apparently masks sector differences. For example, in the agriculture, hunting and forestry sector, the fatal accident rate of self-employed and family workers is notably and consistently higher than that of workers in the same sectors. The headline fact that fatal accidents are no less common amongst the self-employed than other workers does call into question their exclusion from the protection provided by OSH legislation and suggests that consideration should be given to widening the scope of the Framework Directive to include them.

A sizeable minority of MSs commented at some point in their NIRs on concerns regarding the definition of a workplace. To some extent, this reflects new ways of working (e.g. teleworking and working from home) as well as issues regarding working elsewhere, away from their employer’s premises. Related topics include difficulties over shared premises, where multiple occupants and a further ‘building owner’ result in an unclear demarcation of responsibilities. Some MSs have accommodated these concerns by extending their national legislation, adopting a wider definition of a ‘workplace’. Although no specific changes are widely adopted, being restricted to one or two MSs, the general impression is that MSs have identified this as a deficiency in the Workplace Directive, which impacts on its future relevance.

5.3.3 2009/104/EC Work Equipment Directive

Number of MS where the Directive is potentially relevant

In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. The Work Equipment Directive clearly falls into this category.

Proportion of EU workforce to whom the Directive is potentially relevant

Turning to the labour market, determination of the proportion of the labour market covered by the provisions of the Work Equipment Directive is a matter of establishing the number of persons employed within relevant sectors. As the provisions of this directive apply in all sectors they are therefore relevant to all EU workers in all sectors (100 %) which according to LFS data for 2012, amounts to 215,678,600 people (15-74 years) \(^{(60)}\).

Extent of current risks to health and safety

Due to changes in the classification of injury causes, recent ESAW data does not enable any suitable analysis of accidents relating to causes relevant to the provisions of the Work Equipment Directive. Older data (from the ESAW Phase III 2005 survey) was therefore used, giving responses

\(^{(60)}\) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2.
from 16 of the 27 MSs. For these 16 MSs, a fatal accident incidence rate of 2.9 per 100,000 employed persons can be determined. In the same period (2005) there were 1,515 fatal accidents involving contact with a moving object (incidence rate 1.0). This suggests such a mechanism as being a significant cause of workplace fatalities at that time. ‘Moving objects’ are not defined and could include mobile plant or parts of equipment, both of which are covered by the Work Equipment Directive. It should be noted that commuting road traffic accidents are not included in these statistics. The data analysed appear to support the suggestion that fatalities relating to the use of work equipment make (or at least made at that time) a substantial contribution to occupational fatalities. For non-fatal accidents resulting in 3 or more days absence from work, a similar conclusion was drawn.

However, identifying work-related health problems which are attributable to the risks of work equipment was not possible using the data available.

**Current and future relevance**

The accident data does appear to suggest that, in general, the provisions of the Directive remain relevant although it was not possible to assess any of the specific provisions. In support of this conclusion two EU stakeholders expressed the view that the Work Equipment Directive was relevant and important for helping to safeguard the safety and health of workers.

The general form of the Directive, and the general nature of the requirements it contains, make it likely that new equipment developed as a result will remain within the (broad) scope of the Directive. However, any increase in complexity of equipment will make it even more important that the provisions within the Directive are followed, increasing the future relevance of the Directive.

There is some suggestion of a change to the Work Equipment Directive which would help in improving the consistency of its interpretation and application – or at least an area of change. In response to a specific question asked on this issue in the NIR template there is a reasonably clear impression that the concept of ‘specific risk’, as embodied in Article 6, needs to be more clearly defined and explained.

Although not all those MSs who commented on this issue specifically endorsed such a change, the apparent inconsistency and confusion over this issue makes it clear that such change is desirable.

Several stakeholders made references to possible ‘new and emerging risks’ and the possible need to amend the Directive to reflect these. These are perhaps best summarised in an EU-OSHA Risk Observatory report which identified a number of areas relating to machinery, work processes and technologies considered to constitute ‘emerging risks’:

What is not clear from this report, and the other comments, is the precise nature of these risks and whether or not any such risks are adequately addressed by the present Work Equipment Directive (or if it will require to be amended). Arguably, as the ‘General obligation’ (Article 3(1)) is not risk-specific, then no change should be necessary, although clearly there is likely to be a need for informative material to acquaint employers with what risks can (or do) arise from the use of such systems/equipment so that they can avoid or manage them appropriately.

Discussions with OSH experts suggest that suggestions for change to accommodate emerging risks perhaps reflect national differences in OSH management, where those MSs who adopt a
more goal-setting approach are more likely to be content with the existing provisions, whilst those MSs who tend to adopt relatively prescriptive legislation might need to make further prescriptions.

5.3.4 89/656/EEC Use of PPE Directive

Number of MS where the Directive is potentially relevant
In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. The Use of PPE Directive clearly falls into this category.

Proportion of EU workforce to whom the Directive is potentially relevant
Turning to the labour market, determination of the proportion of the labour market covered by the provisions of the Use of PPE Directive is a matter of establishing the number of persons employed within relevant sectors. For this Directive, the provisions apply to most sectors, with the exclusion of certain specific groups (equipment used by emergency and rescue services, the military, police and other public order agencies, and in road transport). However, each of these are encompassed within much wider sectors and it is not possible to objectively determine the proportion to exclude. As an added complication, not all MSs apply these exclusions. Although PPE might be used by any employer in any sector (e.g. the use of hi-vis jackets by fire officers in offices) significant use of PPE will generally be restricted in such sectors. Table 9-1 shows the NACE codes for those sectors where significant use of PPE is likely and where the provisions of the Use of PPE Directive are considered to apply. Based on these codes (with additional data from the SBS database) and using data for 15-74 year old workers to maximise the range covered it can be estimated that the Use of PPE Directive is of probable relevance to approximately 38 % of the EU-27 workforce. This estimate compares favourably with data from the EWCS, where 40 % of respondents indicated that they were required to use PPE as part of their job.

Extent of current risks to health and safety
The Use of PPE Directive protects against a wide variety of hazards that present possible risks to the safety and health of the workforce. Data on the extent of exposure to these hazards by the EU workforce is unhelpful in that PPE should only be used where the hazards and consequent risks cannot be avoided or sufficiently limited by other means and it is not possible to determine the proportion of circumstances where this applies.

Current and future relevance
EWCS statistics indicate that some 40 % of the EU workforce is required to use PPE as part of their work, suggesting that, in principle, the Use of PPE Directive is relevant to these workers.

Some indirect sources of data were considered to explore the relevance of the individual provisions of the Use of PPE Directive. This evidence ultimately seems to provide some support for the ongoing relevance of at least some of the provisions, in that the issues covered have been shown to have an impact on the use of PPE by individual workers.

Although a number of specific concerns were raised regarding the Use of PPE Directive these mainly related to technical performance issues and relate to Directive 89/686/EEC (the PPE Product Directive).

One significant occupational group who, at times, place considerable reliance on PPE are the emergency services. It appears to be a strange anomaly that this group, who potentially have the
most to gain by ensuring ergonomically well-designed PPE, are currently excluded from the provisions of the Directive. A sizeable minority of MSs have not transposed this exclusion, and one expert on the ergonomics of PPE, supported by published material, questioned the need for this exclusion. Removing this exclusion would increase the future relevance of the Use of PPE Directive amongst this subset of workers.

5.3.5 92/58/EEC OSH Signs Directive

Number of MS where the Directive is potentially relevant
In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. The OSH Signs Directive clearly falls into this category.

Proportion of EU workforce to whom the Directive is potentially relevant
Turning to the labour market, determination of the proportion of the labour market covered by the provisions of the OSH Signs Directive is a matter of establishing the number of persons employed within relevant sectors. As the provisions of this directive apply in all sectors they are therefore relevant to all EU workers in all sectors (100 %) which according to LFS data for 2012, amounts to 215,678,600 people (15-74 years) \(^{(61)}\).

Extent of current risks to health and safety
OSH signs can be used to warn or advise workers of a wide variety of hazards. They are therefore potentially influential in respect of many accidents and health problems. However, it is not possible to determine the extent to which recorded accidents or incidents of health problems were influenced by the absence of OSH signs or any other sign-related factor.

Current and future relevance
OSH signs can be seen as an integral part of the safety milieu. They can be used to warn or advise workers of a wide variety of hazards, courses of action, etc., and, as such hazards remain present, safety signs remain relevant. The OSH Signs Directive therefore remains highly relevant to all MSs.

In support of this view, comments in the NIRs reveal that 21 of 27 MSs consider that the current scope of the OSH Signs Directive remains relevant, although some did express reservations. In particular, the comments concerned reservations regarding coherence issues (discussed in Chapter 8). To ensure the future relevance of the Directive, it would be beneficial to review and resolve the coherence issues identified.

5.4 Type-of-worker Directives

Determination of the proportion of the labour market covered by the provisions of the type-of-worker Directives is a matter of establishing the number of employees in the EU-27 labour force exposed to the risks compared to the total workforce of 215,678,600 people, as established above. There are a number of approaches and data sources which can be used to establish these numbers. No single source provided data suitable for each Directive. Therefore, for each Directive, the most appropriate approach or source was adopted and is documented below.

\(^{(61)}\) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2.
5.4.1 92/85/EEC Pregnant/breastfeeding workers Directive

Number of MS where the Directive is potentially relevant

The Pregnant/breastfeeding workers Directive is unquestionably relevant to all 27 MS.

Proportion of EU workforce to whom the Directive is potentially relevant

To determine what age range of female workers fit within a child-bearing age range, Eurostat data on demographic fertility rate by age was consulted (62). This identified that the child-bearing age of females in the EU-27 in 2012 ranged from 15-49 years. For this age range in the LFS data, 71,355,000 female workers were employed in the EU. As any employer who has female workers of child-bearing age should consider this in any risk assessment, the Pregnant/breastfeeding workers Directive can therefore be regarded as potentially relevant to 33% of the EU workforce. In addition, the Pregnant/breastfeeding workers Directive has direct relevance to a target group outside of the labour market, because it aims at protecting the health and safety of both the mother and the child. This effectively extends the relevance of the directive to beyond the immediate workforce. The proportion of workers pregnant at any one time (and therefore to whose unborn child(ren) this applies) is not known.

Extent of current risks to health and safety

EU-27 statistics do not provide any insight into the extent of injuries or ill-health amongst pregnant (or recently pregnant) workers or neonates which might have been influenced by the provisions of this Directive. Published studies relating to the effects of occupational factors in pregnant and breastfeeding workers sometimes give contradictory results. For example, recent scientific evidence shows that working conditions like shift work, heavy lifting, etc. are not likely to have a high impact on adverse pregnancy-related outcomes in the foetus, although these working conditions might have an impact on the health and well-being of the mother (and possibly greater effects on a particularly high-risk group who would be expected to have been identified as high-risk by virtue of their previous history of stillbirth). In contrast, there is strong evidence that certain chemical agents can have negative effects on the foetus and the child. One complication is that many of these risk factors are especially detrimental during the first trimester of the pregnancy, often before the employer is made aware of the pregnancy. Moreover, childhood cancers are also affected by paternal exposure, for instance to certain chemical substances. Thus, in this respect the Directive might be inadequate, because the Directive only applies to women and only women with a recognised pregnancy.

Current and future relevance

The absence of any meaningful data makes it difficult to establish the ongoing relevance (or otherwise) of this Directive. However, it must be acknowledged that this analysis only relates to those provisions pertaining to workplace health and safety, and takes no account of the social and other non-occupational provisions.

The NIRs of only two countries included responses to the specific question: ‘In the light of practical experience, knowledge, technological, social and cultural developments, are the provisions of the Directive still appropriate?’ That from France concentrated in particular on issues such as a need to update the annexes (which is discussed below under future relevance) and the response from the other MS (Hungary) was limited to documenting actions they had taken rather than providing a

(62) http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
response to the question. Given that this was a direct question in the NIR template, the low level of responses does not suggest a strong degree of support for the relevance of this Directive.

Looking to the future, it appears possible that the relevance (and effectiveness) of the Directive could be improved by including risks to men, and by widening the focus to fertility in general (that is to not only focus primarily on the period after a pregnancy is recognised).

5.4.2 91/383/EEC Temporary Workers Directive

Number of MS where the Directive is potentially relevant

The Temporary Workers Directive is not sector- or risk-specific and is unquestionably relevant to all 27 MS.

Proportion of EU workforce to whom the Directive is potentially relevant

To determine the proportion of workers in temporary employment, EWCS data for 2007 was consulted as the most recent available material (63). Clearly, this only provides a guide as the figure might be expected to have changed in the period since then.

In the responses to the EWCS 2007 survey, the number of participants who responded to question Q3B ‘What kind of employment contract do you have?’ was 29,296. Of those respondents 3,300 workers were in a fixed term contract or 11.26 %; 449 respondents were in a temporary employment agency contract or 1.53 %; and 156 respondents were in an apprenticeship or training scheme or 0.53 %.

A further 1,826, or 6.23 %, of the respondents reported themselves as having no contract; however, due to the ambiguity of what ‘no contract’ means in the questionnaire it cannot be determined whether this proportion of the respondents are in temporary or permanent employment as either are possible. The proportion of the EU-27 workforce in temporary employment is therefore based on the proportion of respondents who responded positively to one of the first three options. This yielded a total of 13.33 % of the workforce (as shown by the EWCS) being considered to be in temporary employment.

Extent of current risks to health and safety

The ESAW database, which provides collated EU-27 data for fatal and non-fatal accidents, does not include employment status. It is not therefore possible from this source to establish the extent to which temporary workers are more or less at risk of injury than those in permanent employment.

Temporary workers represent a heterogeneous group. Scientific studies suggest that temporary workers are at higher risk for experiencing work-related accidents, although the evidence is not unequivocal. For example, a review by Virtanen and co-workers (64) found seven of 13 papers reporting an increased risk – meaning that six did not. Some available data, for example from the Construction sector, does suggest a higher risk, which supports the relevance of the Temporary Workers Directive. However, it is unclear whether this risk is due to the employment contract or

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(63) Fourth European Working Conditions Survey, 2007
(64) Virtanen et al. (2005)
other factors such as unfamiliarity with the workplace (which they would share with other new recruits).

**Current and future relevance**

Some questions have been raised over the evidence-base which justifies the need for specific directives on temporary workers.

Although the overall assessment was positive, the review of this directive identified some doubts over its relevance. However, no specific changes were identified which would increase this relevance in the future. Temporary workers are one of a number of vulnerable groups and there are some suggestions, discussed elsewhere in this report, that the needs of such groups might be better addressed collectively rather than though individual (group-specific) provisions.

Some stakeholders foresee an increase in the number of temporary workers in the future and, in turn, a growing need for this Directive. The oshwiki website \(^{(65)}\) observes that the number of employees with temporary contracts is currently declining, although it speculates that this might reflect the economic crisis rather than a fundamental trend. It also suggests that this might be because migrant workers and illegal work is not covered. Two NIRs, draw attention to the limited information available on health and risks (reported above) and question the necessity for the Directive.

### 5.4.3 94/33/EC Young People Directive

**Number of MS where the Directive is potentially relevant**

In many cases, the provisions of the Directives are sufficiently broad to be unquestionably relevant to all 27 MS. Thus, the Young People Directive clearly falls into this category.

**Proportion of EU workforce to whom the Directive is potentially relevant**

Determination of the proportion of the labour market covered by the provisions of this Directive is therefore a matter of establishing the number of young persons employed within the EU-27 workforce. In the context of the Young People Directive, a young person is defined as a worker under the age of 18 years.

To determine the proportion of young persons in employment EWCS data for 2010 was consulted. The number of participants who responded as being younger than 18 years, was 162 of a total of 35,372 respondents. Therefore, the Young People Directive could be estimated as relevant to approximately 0.5 % of the EU-27 workforce. However, the Directive, in prohibiting child labour, is also relevant for all young people under 15 who are not in employment, amounting to a further 15.4 % of the EU population.

**Extent of current risks to health and safety**

Data for accidents and ill-health amongst young people present differing pictures. Accident statistics show that young people (<18 years) are less than half as likely to experience a fatal injury but around 30 % more likely to experience a non-fatal injury. It is not known (but possible) whether this reflects the exclusion of young people from certain high-risk occupations. Alternatively it might

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\(^{(65)}\) [http://oshwiki.eu/wiki/Temporary_Workers](http://oshwiki.eu/wiki/Temporary_Workers)
reflect factors recognised in the published literature as not necessarily unique to younger workers such as limited time in job (and therefore job-specific experience).

According to health data, young people are less likely to report the majority of different types of health problem than those over the age of 18, although they do report more injuries (which mirrors the accident statistics) and more skin problems. The reporting of skin problems can be seen as supporting the relevance of the Young People Directive, as they are often employed in jobs where there is skin irritation and diseases. However, it could be argued that all workers in those sectors, regardless of age, require protection.

The lower levels of other reported health problems should not be seen as necessarily indicating a lack of relevance for the Young People Directive because there are many other non-work factors which could have contributed to these figures, such as aging and musculoskeletal disorders (the same caveat can of course be applied to the skin problems data, although there is at least a plausible rationale for this apparent effect being genuinely work-related).

Current and future relevance
In general, the available statistics do not unequivocally support the need for and therefore the relevance of the Young People Directive. Some support, others do not. However, it is important to recognise that this statement is based solely on consideration of the OSH aspects of the Directive and do not take into account the wider (social, human rights, etc.) provisions of the Directive, which are of undoubted importance. For example, it can be assumed that, by prohibiting child labour, the Directive has removed the risk of injury and ill-health amongst this sub-group, as well as providing other sociological and developmental safeguards.

The current relevance of the Young People Directive was supported by EU stakeholders in relation to working and workplace exposures, due to the level of young people employed in industry, although employers from one MS gave a differing view. In addition, the NIRs from two MSs (UK & FI) reported concerns that employers were avoiding employing young people in order to avoid what they saw as the additional administration involved.

In general, no substantive additional measures were identified from any sources for measures necessary to ensure or safeguard the future relevance of the Young People Directive. Although there was a suggestion in one NIR for changes to reflect a rise in self-employment, it is not apparent that this is an issue of particular relevance to younger workers. However, as with temporary workers, there are some suggestions that the OSH requirements for young persons would be best addressed as one of a number of vulnerable groups (including older workers), rather than as a separate group.

5.5 Sector-specific Directives

5.5.1 92/57/EEC Construction Directive

Number of MS where the Directive is potentially relevant
It is clear that all MSs have construction activities in some form and that the provisions of this Directive are therefore potentially applicable.
Proportion of EU workforce to whom the Directive is potentially relevant

Determination of the proportion of the labour market covered by the provisions of this Directive is a matter of establishing the number of persons employed within the Construction sector. LFS data documents that, for 2012; 15,438,900 were employed within the construction sector. The Construction Directive can therefore be regarded as relevant to 7.2 % of the EU workforce.

A slightly lower figure can be obtained from FIEC data (European Construction Industry Federation) which suggests that 6.4 % of the population of the EU-28 were employed in the sector in 2013. However, given the addition of Croatia and the possible year-on-year variation a difference of 0.6 % is of little importance.

However, it is not clear to what extent this includes workers in the public sector to whom this Directive would be relevant. In many MSs the situation appears to be relatively complex, with local variations in the distribution of employment between the public and private sectors, making it very difficult to establish any form of estimate. Similarly, there are differences in practices between MSs in the extent to which construction work is performed by public sector workers. This makes extrapolation of data from individual MSs to the entire EU subject to considerable potential error.

Extent of current risks to health and safety

Data in the ESAW shows that, for 2012, the rate of fatal accidents in the construction sector was more than three times that for workplaces as a whole (including that same sector) with that for non-fatal accidents almost double.

The focus of the Construction Directive is primarily on construction site planning and infrastructure. Although some reference is made to workplace health issues such risks are therefore primarily addressed by other, risk-specific Directives. It is difficult therefore to attribute any specific health effects to the provisions contained within this Directive. Data from the EWCS survey (2007) identified the construction sector as having the highest incidence of reported exposures to physical risk factors (chemical, biological, ergonomic, noise, temperature; etc.) of all sectors.

Evidence from the UK suggests that forms of work-related ill-health are higher in the construction sector than elsewhere. A scientific paper reporting on the UK industry found that, in comparison to all other employment sectors combined, male UK construction industry workers aged under 65 years had significantly raised SRRs (Standardised Risk Ratios) for respiratory (3.8, 95 % CI 3.5 to 4.2), skin (1.6, 1.4 to 1.8) and musculoskeletal disorders (MSD; 1.9, 1.6 to 2.2). Despite this, LFS AHM data (2007) suggests that workers in the construction sector consider themselves to be no more or less healthy than the wider EU-27 workforce.

On balance, it would seem that though there are surveys that point out that workers in the construction sectors consider themselves to be no more or less healthy than the EU-27 workforce as a whole, there are also statistics that suggest that the construction sector remains a high risk sector for both injuries and health risks.

(66) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2
Current and future relevance

It would seem that exposure to potential risks to health continue to be high within the construction sector and that a need therefore remains to ensure that they are properly and effectively managed, suggesting the continued relevance of this Directive.

Looking to the future, construction activities around the existing level are expected to continue throughout the EU, and the incidence rates of occupational injuries are expected to remain relatively high. Hence, it is considered that a specific need for regulatory control will remain within the construction sector, ensuring the future relevance of this Directive.

Although very many MSs provided extensive comments on the Construction Directive in their NIRs, few of these impact directly on the issue of relevance. However, one aspect addressed in the NIRs which does potentially impact on its relevance related to a fairly widespread concern about the interpretation of the scope of the Directive, suggesting a need for clarification to ensure a consistent approach. Although conventional construction works are not seen as problematic, the degree to which the Directive applies to works such as maintenance and cleaning appears to vary between MSs, and impacts on the perceived relevance of the Directive. There would seem to be a need to explore these different elements and to develop a shared understanding and interpretation of this fundamental aspect of the Directive to ensure its consistent application across MSs.

5.5.2 92/104/EEC Mines and Quarries Directive

Number of MSs where the Directive is potentially relevant

The provisions of the Mines and Quarries Directive have been transposed into the national legislation in all MS according to the NIRs. Eurostat data shows enterprises in industries categorised under NACE Code B in almost all MSs except Malta (67). However, the absence of detailed data from some MSs prevents checking whether this is restricted to drilling (NACE Code B06), which is covered by the Drilling Directive, or encompasses surface and underground mineral extraction as covered by this Directive. The reports from the 4th and 5th EWCS studies merge this sector into the larger industrial sector and therefore also do not provide separate information.

The 2012 Minerals Yearbook (68) records that several small stone quarries operate on the islands of Gozo and Malta, with limestone the main mineral product, confirming that they have industrial activity in this sector. Exploration of the National Implementation Reports identified that all MS have industrial activity in the relevant sector, although in a number of MSs, this is limited to surface extraction (quarries, opencast mines) with no underground mining activities (ref. NIRs). This Directive therefore remains relevant to workers in all 27 MS.

Proportion of EU workforce to whom the Directive is potentially relevant

Consultation with OSH experts the following sub-sectors within mining and quarrying were considered to be relevant: mining of coal and ignite (NACE B05); mining of metal ores (NACE B07); other mining and quarrying (NACE B08); mining support service activities (NACE B09). The Directive is relevant to all such workers.

(67) Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2) [sbs_sc_sca_r2] http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
841,000 were employed within the mining and quarrying sector. To calculate the proportion of workers in the mining and quarrying sector for whom the Mines and Quarries Directive is relevant the SBS data set was consulted. In the SBS database the most up to date data was used, which was recorded in 2010. The estimated population of workers in the mining and quarrying sector was 615,000. The relevant sectors described above were estimated to include the following number of workers:

- Mining of coal and lignite (NACE B05) = 233,000
- Mining of metal ores (NACE B07) = 4,909
- Other mining and quarrying (NACE B08) = 213,900
- Mining support service activities (NACE B09) = 52,500

Therefore, the Mines and Quarries Directive is relevant to 82% of the workers in the mining and quarrying sector (NACE B). By applying this percentage to the number of workers in the mining and quarrying sector from the LFS data the Mines and Quarries Directive can be regarded as relevant to 689,620 workers in the EU, which amounts to approximately 0.32% of the EU workforce.

Extent of current risks to health and safety

The rate of fatal accidents in the mines and quarries sector is approximately six times the EU-wide average. Although not so dramatically different, the incidence rate for non-fatal accidents is also higher in the sector than the industry-wide figure. As for the data on accidents, when compared to the whole EU-27 workforce, a slightly higher percentage of workers in the mines and quarries sectors reported work-related health problems. Additionally, the EU-27 average number of persons within the mining and quarrying sector reporting exposure to hazardous factors is relatively high, and is higher than the overall figure for each MS although the proportion varies substantially between MSs.

Current and future relevance

The limited literature-based, accident and ill-health data identified, together with opinions from stakeholder interviews, support the suggestion that the Directive continues to address current occupational health and safety risk factors for workers in this sector, and that the directive remains relevant.

However, this Directive was enacted at a time when there was a strong deep coal mining sector within the EU, which has now been considerably reduced (and, in some MSs, no longer exists). There are some suggestions that the Directive could be ‘streamlined’ to reflect a stronger emphasis on surface mining (quarries). However, this would not necessarily entail any alternative or different provisions and can perhaps be seen more as a shift in how the requirements are presented (e.g. in guidance) rather than a need to change any of the legal requirements.

Looking to the future, apart from the suggestion above of adjusting the emphasis of the requirements, EU and National stakeholders mainly felt that the Directive will remain relevant over the period through 2020. New and emerging risks such as changing workplace demographics (for example increasing numbers of ageing workers); the potential for cybercrime attacks on plant operating systems; the use of nanomaterials in materials processing; and an increasing prevalence of undersea mining were also considered relevant for this Directive and might influence its future relevance. Some stakeholders expressed the view that the more target-orientated nature of the directive (rather than adopting a prescriptive approach) was of value in helping to ‘future-proof’ the Directive and maintain its relevance in respect of future risks.
There was no clear view on whether such risks should be addressed by additional Directives, amendments to existing Directives, or the provision of more and/or better consultation, communication and guidance.

5.5.3 92/91/EEC Drilling Directive

Number of MS where the Directive is potentially relevant

In terms of employment, extraction of minerals through drilling is generally smaller-scale than extraction through mines and quarries. Nevertheless, the provisions of the Drilling Directive have been transposed into national legislation in all MSs (ref. NIRs). Eurostat data\(^{69}\) shows either a zero entry or no data for various reasons for BE, IE, EE, CY, LU, MT, SK, FI, SE for activities relating to the extraction of crude petroleum or natural gas.

Of these, IE, EE, CY, MT, SK, and SE all appear however to have some form of oil and gas exploration activity. LU and FI have no indications of any such activity, although Finland is believed to be associated with some Arctic exploration activities, possibly providing support expertise.

Further exploration of the National Implementation Reports identified that not all MSs have relevant industrial activity, with some, such as Luxembourg, Malta and Portugal indicating none whatsoever and others, such as Latvia and Estonia, reporting only limited relevance. In fact, Estonia appears to have extended the scope of the Directive to cover the extraction of water by drilling, which constitutes their only relevant industry (ref. NIR-EE). Thus, the question of relevance of the Directive to some MSs presents a confusing and sometimes contradictory picture depending on the source of information. It appears to not be relevant to Luxembourg, and may be of little relevance in several other MSs, although the fact that they have transposed the Directive into national legislation could suggest that the possibility of relevant activity in the future cannot be ruled out.

Proportion of EU workforce to whom the Directive is potentially relevant

Determination of the proportion of the labour market covered by the provisions of this Directive is a matter of establishing the number of persons employed within the extraction of crude petroleum and natural gas sector (NACE B6).

LFS data\(^{70}\) documents that, for 2012; 841,000 were employed within the mining and quarrying sector. By applying the percentage of the workers in the relevant manufacturing sub-sector from the LFS data, the ATEX Directive can be regarded as relevant to 100,920 workers in the EU, which amounts to approximately 0.05 % of the EU workforce.

Extent of current risks to health and safety

The rate of fatal accidents in the drilling sector is approximately twice that for workplaces as a whole. In contrast, the non-fatal injury rate in the drilling sector is more than four times lower than that for the whole EU workforce. Data on health issues from the LFS AHM and EWCS only provide data for the whole mineral extraction sector, including the much larger mines and quarries component.

\(^{69}\) Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) [sbs_na_ind_r2]

\(^{70}\) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000  [lfsa_egan2]
Gardner (2003) provided an overview of occupational exposures and health risks with specific reference to the offshore oil and gas industry (a substantial element of the drilling sector). This indicated that: ‘Virtually all the health hazards common to industry are present offshore’. Other European (non-EU) studies suggest, for example, that the commonly encountered health issues of musculoskeletal disorders, skin problems and noise-induced hearing loss are equally common in offshore mineral extraction.

Current and future relevance
Although the drilling sector appears to have a good safety record (as shown by the limited statistics available) it remains an industry often functioning in highly challenging environments (especially offshore) where the risks to safety are ever-present. Similarly, work technologies and working practices mean that there are a wide variety of hazards to health present within the sector (again especially but not exclusively offshore) and it appears from the limited information available that the Drilling Directive is and will remain relevant.

A recent (2013) independent evaluation of the implementation of the Drilling Directive found a need to update it to improve its current and future relevance. It was found that current good practice in both industry and regulation has moved on since 1992, and therefore, is not fully echoed in the provisions of the Directive. Furthermore, several specific areas of the Directive or actual provisions of the Directive were regarded as limited; and thus the success of the Directive in offering protection to workers was restricted. The evaluation report defines a number of specific recommendations, including the addition of current good practice which is missing in the Directive; being more explicit regarding the management of drilling activities and well control; and outlining the structure/functions to be undertaken by the regulator.

5.5.4 92/29/EEC Medical treatment on board vessels Directive

Number of MS where the Directive is potentially relevant
It appears that provisions have been made for the transposition of this Directive in almost all MSs (ref. NIRs). The exceptions, according to the NIRs, are the Czech Republic and Hungary. Eurostat data published in 2010 shows enterprises in the water transport sector (NACE Code H50) in almost all MSs, with the exception of BE, LU, MT. As discussed above, it is unclear whether this represents an absence of data or a genuine zero return, although the entries for Belgium (listed as confidential) and Luxembourg (low reliability) suggests that there are some data.

In the case of Belgium, there is a ship registry which implies that there are Belgian registered vessels. Similarly there are Luxembourg and Malta registered vessels. In fact, Malta is claimed to have the largest ship register in Europe. It would seem, therefore, that this Directive is potentially relevant in every MS.

It should be noted that this includes freshwater and coastal transport, and might not therefore represent the accurate extent of relevance of the particular provisions of this Directive. To explore this further, the 27 National Implementation Reports were interrogated. This revealed that four MSs

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(71) Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2) [sbs_sc_sca_r2]
http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
(72) http://www.maritime.lu/luxembourg-merchant-fleet
(73) http://www.flagport.com/
(AT, CZ, HU, & SK) do not consider this Directive to be relevant to them (Slovakia described it as ‘less than marginal’), with two not having implemented its provisions as noted earlier.

However, it remains relevant in all other MSs (ref. NIRs).

Proportion of EU workforce to whom the Directive is potentially relevant

Determination of the proportion of the labour market covered by the provisions of this Directive is best achieved through establishing the number of persons employed within the Maritime sector. The Directive is potentially relevant to all such workers although clearly not all will work on qualifying vessels.

LFS data\(^{(74)}\) documents that, for 2012, 10,948,400 were employed within the transport and storage sector (including water transport). SBS data\(^{(75)}\) for 2011 (the most recent available) indicates that 10,594,400 workers are employed in transport, of whom 217,000 are employed in ‘water transport’, although this will include shore-based workers in that sector and also those working in fresh water or small coastal vessels, to whom the provisions of this Directive do not apply. Using these data to adjust the LFS data suggests 216,881 workers are covered by this Directive.

According to other Eurostat statistics\(^{(76)}\) a total of 170,200 workers are employed in the sea and coastal water transport (passenger and freight) sectors. However, this figure is again likely to include shore-based personnel working for appropriate employers.

In 2011, a Commission Task Force on maritime employment and competitiveness\(^{(77)}\) reported that it was ‘difficult to find accurate, complete and reliable figures on seafarers’. It found it necessary to recruit an external consultant to collate estimated data on its behalf. As a result of these deliberations, it concluded that the estimated numbers of active seafarers in maritime EU Member States in 2010, plus Norway, (as extracted from ISF/BIMCO Manpower up-date study 2010) were 143,967 officers and 110,152 ratings, for a total of 254,119 seafarers. Although including Norway (SBS data indicate 25,134 workers), this appears to be the highest estimate, despite the fact that it seems to be restricted just to those actually working on vessels. Deducting the SBS value for Norway leaves 191,747, or 0.9 % of the EU workforce, to whom this Directive is potentially relevant.\(^{(78)}\)

A further factor not formally considered here, but to be borne in mind, is that the provisions have implications for those travelling as passengers, not just crew, thus widening the potential relevance of this Directive.

Extent of current risks to health and safety

Seafaring is generally considered to be a high-risk occupation, and the incidence of fatal-accidents is higher than in the water transport sector. However, formal statistics covering fatal and non-fatal

\(^{(74)}\) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2
\(^{(75)}\) Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2)
\(^{(78)}\) A further factor not formally considered here, but to be borne in mind, is that the provisions have implications for those travelling as passengers, not just crew, thus widening the potential relevance of this Directive.
accidents problems are aggregated to the transport, storage and communication sector as a whole, with no way of determining the health problems associated with work on board sea-going vessels. Similarly, data from the EWCS survey (2007) is aggregated to the transport and storage sector (or transport, storage and communication) as a whole, with no way of determining the health problems associated with work on board sea-going vessels.

The Medical treatment on board vessels Directive differs from most others, because it does not seek to prevent or eliminate exposure to potentially dangerous working conditions. In contrast, it aims to ensure adequate health care in case of an accident and illness. Thus, the potential of the Directive is to mitigate the effects of serious accidents and disease. Such diseases are not restricted to occupational diseases. For instance, CVDs are one of the most common reasons for serious medical emergencies (apart from accidents) at sea. Serious and potentially life threatening accidents and diseases, like CVDs, require a fast diagnosis and initiation of proper treatment. This is clearly a challenge in a workplace characterized by geographical isolation.

Current and future relevance
Based on these sources, it would appear that a need remains for the provision of medical treatment on board vessels.

Concerns have been expressed that some of the provisions of this Directive are inconsistent with provisions made under International Maritime agreements. Additionally, some of the requirements for medicines are seen as excessive, with concerns about the fundamental need for them with changes in communications systems (resulting in considerable waste of medicines with relatively short shelf-lives), problems over storage on some (smaller) vessels, and concerns over competencies to administer some of them, again particularly on some smaller vessels.

Few EU and national stakeholders had strong opinions regarding the general future relevance of the Medical treatment on board vessels Directive. However, some NIRs indicated a need to review and align medicine lists and other provisions of the Directive, and its scope, in order to improve its ongoing relevance. In this context, several references were made to the MLC (or ILO) in terms of inconsistencies between their agreement and the Directive. Rectifying these, and establishing a more effective means of ensuring consistency in the future, would help to ensure its ongoing relevance. It is noted that a small number of Member States have already updated national requirements to reflect these differences, aligning their legislation with the MLC rather than the Directive.

5.5.5 92/29/EEC Fishing vessels Directive

Number of MS where the Directive is potentially relevant
22 Member States (AT, CZ, LU, HU and SK are excluded) have transposed the Fishing Directive into national legislation. All 22 MSs are affected by the Directive, although its relevance varies significantly, *inter alia* due to the large differences in fishery employment figures across MSs.
Statistics on fishing are not always available as this code is omitted from some Eurostat sources or merged with others. A report on the Common Fisheries Policy from 2014 documents fishing vessels in 22 of the EU-27 (excluding the same five as above) (79).

Confirmation of the position was sought from the NIRs. This confirmed that these five MSs did not regard this Directive as being of relevance to them. In one further MS (CY) the relevance was described as ‘very limited’, a description which could also perhaps be applied to Romania, which recorded that there were just two qualifying fishing vessels operating under their jurisdiction (ref. NIRs).

A further point to note from the NIRs is that most noted an ongoing trend for a reduction in the number of registered fishing vessels, in accordance with common fishery policies. This point is explored further in the Directive-specific report.

Proportion of EU workforce to whom the Directive is potentially relevant

An analysis of the proportion of the EU to whom this Directive is potentially relevant is complicated by the fact that the sources usually used are unsuitable. The LFS data (80) merges the fishing sector with those of agriculture and forestry (NACE Code A) whilst the SBS database does not include this NACE Code at all. Alternative sources of information on employment therefore had to be consulted.

Data from the EWCS 2010 survey indicated that less than 0.1 % of respondents (34 individuals) reported working in the Fisheries sector – and this presumably includes those working onshore for companies operating within this sector.

The most accurate employment figures for the fisheries sector are likely to be those presented in the 2014 edition of the booklet ‘Facts and figures on the Common Fisheries Policy’ (81), although these figures include workers employed onshore or on small vessels operating inshore. Even though these workers are not covered by the Fishing Directive, it is our estimation that the figures provide a good overview of sector employment.

As detailed in the individual Directive report, the number of fishermen varies significantly between MSs with one MS (ES) accounting for 28 % of the workers employed in the fisheries sector (without regard to the vessel sizes covered by the Directive), and the top five (ES, IT, PT, EL and UK) accounting for 80 % of the total fishing workforce. Of the 22 MSs, 10 had less than a thousand Full Time Equivalents (FTE) employed in the sector in 2011. The total employment figure of EU-27 in the corresponding year (2011) was 215,581,400 employed persons (15 years or older) (LFS data) (82). If we compare the total figure of 116,094 FTE to EU-27, we thus find that fishermen accounted for 0.05 % of the EU workforce in 2011.

However, it should be noted that, as the employment figures of the Fishing sector are calculated in FTEs and as the fisheries sector is characterised by seasonal and temporary workers, the number of individual workers covered by the Directive is likely to be somewhat higher. While this figure is not presented in the 2014a publication, it states that approximately 85,000 workers (including part-

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(80) Employment by sex, age and economic activity (from 2008 onwards, NACE Rev. 2) - 1 000 [lfsa_egan2
(81) European Commission, 2014a
(82) EU figures are not available in FTE.
time workers) are employed in the aquaculture sector, which represents 33,019 FTEs. If we apply the same factor (2.57) to the fisheries sector, we would get approximately 298,858 individual workers corresponding to 0.14 % of the EU workforce. Yet, these figures are pure estimations and strictly serve the purpose of illustrating the limited workforce of the fisheries sector, even without accounting for the limitations to workforce coverage induced by the limited scope of the Fishing Directive.

Data from the EU Fishing Fleet Register suggest that less than 10 % of the EU fishing fleet is covered by the provisions of the Directive.

**Extent of current risks to health and safety**

The ESAW database only includes fatal accidents data from 11 MSs for the fishing (and aquaculture) sector for 2012. According to these entries, the rate of fatal accidents in the fishing and aquaculture sector is almost ten times (9.27) that for EU workplaces as a whole (including that same sector). In the same reporting period, the rate for non-fatal accidents was almost double the workforce average.

In contrast to these accident figures, LFS AHM (2007) data appears to suggest that, in general, workers in the fishing and aquaculture sector consider themselves to have only slightly more health problems (<1 % difference) than the wider EU-27 workforce. Statistics on exposure to risks from the same survey indicate that 64.8 % of workers in the fishing and aquaculture sector report exposure to factors which could affect their physical well-being, compared with the overall reporting rate of 39.8 % across all sectors, whilst risks to mental well-being appear to be lower, as only 20.6 % of workers in the fishing and aquaculture sector report exposure to factors which could affect their mental well-being (compared to 26.5 % overall).

Data from the EWCS (2010) found that 61.8 % of those who worked in the fisheries sector considered that their health or safety were at risk because of their work. However, because of the very small sample, each individual effectively accounts for 3 % of the total figure.

**Current and future relevance**

One caveat for all these figures is that they reflect those working in the industry, and not necessarily those working on fishing vessels of a qualifying size. Despite this, the accident statistics seem to suggest that there is little doubt about the continued existence of the risk factors, which the Directive aims to alleviate, a conclusion which is also confirmed in NIRs and stakeholder interviews. This indicates a high continued relevance of the Fishing vessels Directive.

This is one of the few Directives not transposed into national legislation in all MSs and not fully implemented in others due to the lack of any qualifying fishing vessels. However, although clearly not relevant to these MSs, there have not been any doubts expressed over its current relevance in the remaining MSs.

Although the size of the EU fishing fleet is decreasing, due to the continued existence of risk factors on board fishing vessels, there is no evidence to suggest that the future relevance of the Fishing vessels Directive will decrease. No specific amendments or additions to the Directive were identified which would impact on this.
5.6 Hazard-specific Directives

With some hazard-specific Directives, estimates of the proportion of the workforce to whom the Directives are potentially relevant have been made on the basis of the proportion of workers in those sectors (or sub-sectors) where exposure to the hazard is most likely to occur. These sectors have been selected on the basis of expert OSH advice. It is recognised that there will be workers in other sectors who will be potentially exposed to the risk. Similarly, there will be workers in the sectors selected who are not exposed. However, it was not considered appropriate to assign ‘estimated fractions’ to these proportions which, it was hoped, would to some extent be balanced.

5.6.1 90/269/EEC Manual Handling Directive

Number of MS where the Directive is potentially relevant

Although risk-specific, the risks associated with manual handling are considered to be virtually ubiquitous and no verification of the relevance of this Directive to every MS was considered to be required.

Proportion of EU workforce to whom the Directive is potentially relevant

One source of evidence of coverage of the workforce is the EWCS 2010 data (83), documenting the proportion of respondents who reported that their job involves carrying or moving heavy loads. Across the EU-27, 52.1% of those questioned responded positively to this. Thus, to the extent that the EWCS can be regarded as genuinely representative, this provides a guide to the proportion of the EU workforce to whom the Manual Handling Directive is currently relevant.

In the same survey, a second question asked about lifting and handling people. Only 16.5 % of the respondents replied positively to this. It is not clear to what extent the two samples overlap, but it would seem likely that those reporting handling people would also have acknowledged handling heavy loads, implying a total overlap. This figure is therefore assumed to be included within the 52.1 % reported above.

An alternative approach to estimating the proportion of the EU workforce to whom the Manual Handling Directive is relevant is to compute the proportion of the workforce in those occupational sectors where manual handling might be regarded as a common activity. Some, such as construction, mining and agriculture, can be selected with reasonable confidence, with the assumption that most of those employed in these sectors will be required to manually handle loads at times. However, the proportion of those in other sectors, such as manufacturing and retail, who are also required to perform manual handling is harder to predict and, even in more business service sectors, there will be some employees who perform such tasks. This approach is therefore unlikely to provide a reliable estimate.

Manual handling is also common in the healthcare sector (not just for handling people) although, again, the proportion of those employed in this sectors who carry out such activities (handling patients or materials) is not easy to derive from the data available.

In the absence of a clear criterion based on sectors, it is suggested that the estimate from the EWCS 2010 of 52.1% provides the most reliable indication available for defining the proportion of the EU-27 workforce for which this Directive is relevant.

**Extent of current risks to health and safety**

Although the focus of the provisions of the Manual handling Directive is injuries to the back, ESAW statistics relating to such injuries are unhelpful in that the database does not record the apparent cause of such injuries and it is therefore not possible to determine the proportion of these which were manual handling injuries. LFS AHM data is even more unhelpful in that it records ‘musculoskeletal injuries’ and does not differentiate these by the site of injury or the apparent cause.

EWCS data includes ‘backache’, although, again, the perceived cause of such pain or discomfort is not recorded. However, the data does show an apparent dose-response relationship with the proportion reporting backache increasing with the proportion of the day spent involved in handling heavy loads. It is not clear whether this relationship is indicative of causing injury (leading to the symptom of back pain) or whether it indicates that those with back pain are more likely to experience symptoms if they have a job which requires manual handling for much of the day. Clearly, however, it would appear that managing the risks associated with manually handling heavy loads (and therefore the Manual Handling Directive) remains relevant.

**Current and future relevance**

It is widely recognised that the manual handling (and DSE) directives do not address all workplace risks for MSDs. There has been extensive debate regarding the best solution to resolve this as MSDs remain a significant cause of sickness absence.

Some doubts have been raised regarding the implementation of the provisions of this Directive (therefore impacting its effectiveness as well as its perceived relevance) with concerns that insufficient emphasis is placed on reducing risks through improving the design of workplaces. As part (but by no means all) of this, questions have been raised regarding the scientific evidence questioning the value of manual handling training as a risk control measure.

Despite these concerns, there would seem to be a widely held view from a variety of stakeholder sources that the Manual Handling Directive is likely to remain relevant in the future. Occupational risks associated with manual handling activities are expected to persist and it is expected that the aging nature of the workforce will lead to an increased susceptibility to such risks.

Overall, it would seem that the provisions of the Manual Handling Directive are correctly addressing the risks relevant specifically to manual handling activities, although there are general doubts over the quality of their implementation.

One exception to this however is the widely perceived need for manual handling training (Article 6) which, in some MSs at least, there is evidence for this having become the main (possibly sole) risk management method. Given the evidence from the scientific literature for the ineffectiveness of such training, supported by the views from NIRs and stakeholders, it would seem appropriate for Article 6(2) to be revised (a measure which would improve both the future relevance and effectiveness of the Directive). Whilst education to raise awareness of the risks arising from handling activities remains of value, amendment of the text to diminish the perceived requirement for training in manual handling techniques would appear to be of value.
To accompany this ‘downgrading’ of the ‘requirement’ for training in manual handling techniques it would seem advisable to clarify the risk-based approach embodied in Article 3 to emphasise the hierarchy of:

- Risk prevention;
- Risk reduction;
- Risk (personal) protection.

In this hierarchy, manual handling training could correctly be seen as a potential adjunct to workplace design improvements (prevention & reduction of risks) as a personal protection approach.

One of the criticisms of the Manual Handling Directive from some stakeholders is that it does not adequately address all MSD risks. This is perhaps not surprising given that its subject (scope) is to lay down safety and health requirements for the manual handling of loads. It is clear from any examination of the wealth of published scientific literature that many risks of MSDs do not arise from the manual handling of loads (or from the use of DSE).

In the 2010 EWCS survey, 46 % responded that they had suffered from backache over the last 12 months. It should not be assumed that this backache was necessarily associated with manual handling. As data in the Manual Handling Directive reports shows, not all of those who experience backache are engaged in manual handling. Thus approximately 40 % of those with backache report never carrying or moving heavy loads and a slightly higher percentage (47 %) report never working with computers. In total, 13.6 % report never doing either.

In the same survey, approximately 45 % of respondents indicated that, over the last 12 months, they had suffered from muscular pains in their shoulders, neck and/or upper limbs. More than a third of these (38 %) indicate that their work never involves carrying or moving heavy loads whilst only 16 % indicate that their job never involves repetitive hand or arm movements. Further analyses show that just under a half (46 %) report that their main work never involves working with computers.

Clearly, there are many complex factors at play and these figures only give a relatively crude and imprecise picture with no direct indication of causation. However, it is clear that there will be many workers who experience MSDs whose work does not entail either handling heavy loads or working with computers.

A further complication is that not all MSDs are necessarily caused by work. In generic terms, workplace risks of MSDs can arise from repeating or sustaining awkward body postures; repetitive or sustained actions or movements; or the application of excessive force (where the concept of excessive also accommodates the frequency and/or duration of force application). Amongst these generic risks, those arising from the use of computers (DSE) and those associated with manual handling activities are addressed through the two existing Directives. This leaves those activities, especially in industrial tasks, which do not involve either of these.

Given the importance of MSDs in terms of overall EU sickness absence, these considerations reflect a clear ‘gap’ in terms of workplace risks for which no specific legislative provision exists at
present and therefore for which no existing Directive (with the exception of the Framework Directive) provides protection to workers.

5.6.2 90/270/EEC DSE Directive

Number of MS where the Directive is potentially relevant

Although risk-specific, the risks associated with the use of Display Screen Equipment (DSE) are considered to be virtually ubiquitous and that no verification of the relevance of this Directive to every MS was considered to be required.

Proportion of EU workforce to whom the Directive is potentially relevant

Establishing the proportions of DSE users in different economic sectors is not straightforward, as computers are widely used in offices and virtually every employer will include some form of office function.

The EWCS 2010 survey included the questions: ‘Does your main paid job involve - working with computers: PCs, network, mainframe?’ and ‘Does your main paid job involve - Using internet/email for professional purposes’. Of the respondents, 52.76 % indicated that they did so for a quarter of their time or more to one or both questions (curiously, some individuals responded that they never worked with computers, despite indicating that their main job involved using the internet/email). Thus, to the extent that the EWCS can be regarded as genuinely representative, this provides a guide to the proportion of the EU workforce to whom the DSE Directive is currently relevant.

As an alternative approach, data was obtained from the LFS 2012 data, to calculate the number of employees in relevant sectors likely to be users of computers in some form. The database showed a total of 215,678,600 employed persons (15-74 years) in total across the EU-27 for 2012. Within this, the following sectors were selected as predominantly employing workers likely to be DSE users:

- J: Information and communication
- K: Financial and insurance activities
- L: Real estate activities
- M: Professional, scientific and technical activities
- N: Administrative and support service activities
- O: Public administration and defence; compulsory social security
- U: Activities of extraterritorial organisations and bodies.

This yielded a total of 49,613,300 workers, or 23 % of the total workforce, well short of the percentage provided from the EWCS database. Not all workers in the selected sectors will use computers, with no means of determining an accurate figure. Additionally, there will undoubtedly be workers in other sectors for whom the Directive is relevant, such as office staff in the manufacturing sector. This makes a sector-based approach particularly problematic and prone to error.

In the absence of a clear criterion based on sectors, it is suggested that the estimate from the EWCS of 52.76 % provides the most reliable indication available for defining the proportion of the EU-27 workforce for which the DSE Directive is relevant.
Extent of current risks to health and safety

MSDs such as back or upper limb problems are recorded in some instances as ‘accidents’ although it is not clear to what extent such a designation truly captures what, in some instances, will be problems with a gradual, almost insidious onset. For example, data from the ESAW database yields totals of 79,329 accidents to the neck and 1,242,203 accidents to the upper limb (not further specified). These values yield approximate incidence rates of 37 and 583 per 100,000 employed respectively. However, the database gives no indication of apparent causes. It can be calculated that approximately 14,444 (12.5 %) and 155,624 (18 %) of these were to workers in the main DSE-relevant sectors suggesting a lower than expected incidence in these sectors.

Data from the EWCS 2010 survey shows that approximately a fifth of those who worked with computers (at least 25 % of the time) reported experiencing backache, muscular pains in shoulders, neck and/or upper limbs, or headache or eyestrain. However, far fewer reported symptoms potentially related to stress (depression or anxiety) reinforcing the view from other published sources that stress and other problems related to psychosocial risks are not a major risk with computer work.

Current and future relevance

The data on MSDs summarised above support the view that the DSE Directive remains relevant. However, strong concerns have been expressed over the requirements for workstations specified in the Annex to the Directive which is very dated and has not been amended to reflect changes in technology and ways of working. The Annex largely reflects the state of computer technology of the 1980s. Not only does this mean that the Directive is partially out of date at present (thereby impacting its current relevance), but also that it is likely to become more so as further developments in technologies are introduced into the workplace (future relevance). One difficulty is that, in its present form, any amendment upon similar lines is going to become out of date with developments in technology in the same way as the present one has done so. Consideration should therefore be given to preparing a less prescriptive text, and one which does not preclude alternative approaches. For example, the current requirements for the chair to be provided broadly assume a conventional seated posture and could be considered to have a negative impact on the concept of a standing workstation.

However, one of the difficulties with a prescriptive approach such as this is that, as practical experience with employers has demonstrated, it tends to encourage employers to consider that compliance with these requirements is all that is required. As a result, practical experience in the implementation of the Directive indicates that often, no actual assessment of the working posture of the worker is carried out. There might be some merit in considering a more ‘enabling’ approach that required employers to provide furniture and equipment ‘sufficient to enable the worker to adopt a good working posture’, supported with authoritative information and guidance as to what constituted a good posture.

Doubts have also been expressed over the requirement for eyesight testing (Article 9) as a means of protecting eyes and eyesight as there is no evidence that use of DSE causes any such damage. One specific concern is that Article 9 of the Directive is factually misleading in that the title ‘Protection of workers’ eyes and eyesight’ implies that use of DSE presents a risk. This is contrary to scientific and medical evidence. There is however, some experience to suggest that workers might experience problems such as visual symptoms, or might adopt compensatory (adverse) physical postures if they cannot see the display clearly due to visual defects. This appears to be
tacitly recognised in a number of MSs where testing is made available to those who report problems rather than prior to starting work. As written, the Article is misleading and inappropriate and amending it to reflect the current evidence base would enhance the future relevance of the Directive.

Many MSs also reported in their NIR the need to review the exemptions in the Directive (Article 1(3)) due to the technological advances which have occurred since the Directive entered into force.

5.6.3 1999/92/EC ATEX Directive

Number of MS where the Directive is potentially relevant
Entries in the NIRs indicate that this Directive has been transposed into national law in each MS (ref. NIRs). The non-binding guide to the provisions of the Directive \(^{(84)}\) includes a table (Table 1.1) of examples of potential explosion hazards. This covers such a wide variety of situations that it serves to illustrate the relevance of this Directive across all Member States.

Proportion of EU workforce to whom the Directive is potentially relevant
Consultation with expert practitioners suggested that the Directive is most relevant to specialised sectors within the main sectors. However, employment data do not extend to these more detailed classifications. Therefore the following sectors were selected as likely to have a reasonable proportion of workers to whom the provisions of this Directive could be relevant:

- C10 - Manufacture of food products
- C16 - Manufacture of wood and of products of wood and cork, except furniture
- C20 - Manufacture of chemicals and chemical products
- C21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations
- H49 - Land transport and transport via pipelines.

By applying the percentages to the number of workers in the two sectors from the LFS data, the ATEX Directive can be regarded as relevant to 168,162 manufacturing workers and 2,846,584 transport workers in the EU, which amounts to approximately 1.4 % of the EU workforce in total.

Extent of current risks to health and safety
It is not possible to use accident or injury statistics to assess the extent to which the Directive is still relevant, because there is no data on the prevalence/number of fatal or non-fatal accidents caused by explosive atmospheres. Likewise, there is no data on the health consequences of such accidents. However, it would seem just a matter of chance whether such an event as an uncontrolled explosion leads to loss of life or minor injury – and all such events present the potential for the most serious outcome.

Current and future relevance
While workplace environments with the potential for explosion if correct precautions are not taken can still be found, then the need for some form of regulatory management remains and the Directive can be considered to remain relevant.

There are no indications of any significant developments in industry which would markedly reduce or enhance the future relevance of this Directive. However, researchers have strongly criticised the fact that the Directive does not adequately differentiate between dust clouds and gases/vapours and revising this would serve to increase the current and future relevance of the Directive.

5.6.4 2002/44/EC Vibration Directive

Number of MS where the Directive is potentially relevant

Entries in the NIRs indicate that this Directive has been transposed into national law in all MS (ref. NIRs). The Fourth European Working Conditions Survey (85), reported in 2007, indicated that exposure to vibration was reported across all MSs. Data from the Fifth Survey (2010 reported in 2012) shows respondents from all MSs reporting exposure to vibration at work for at least 25 % of their shift, which confirms that this remains the case and that the Directive remains relevant in all MSs (86).

Proportion of EU workforce to whom the Directive is potentially relevant

The EWCS data provides self-reported data from individual workers who report themselves as exposed to vibration at work for at least 25 % of the time. This has limitations in that exposure to vibration for less than 25 % of a working shift can present a risk of injury. It also does not differentiate between whole-body and hand-arm sources although, as both are covered by the Directive, this is of limited importance. Nevertheless, it provides one approach to estimating the proportion of the EU workforce exposed to vibration at work and to whom therefore the Directive is relevant. From the Fifth Survey EWCS data it can be established therefore that 22.1 % of respondents reported themselves as exposed to vibration for at least 25 % of the time. For the purpose of this analysis, it is assumed that ‘almost never’ reflects negligible exposure for which the Directive would not be relevant. Based on a sample of over 35,000 individuals across the EU-27 these data are not weighted or adjusted for the representativeness of the different sectors represented.

A second approach to establishing relevance entails taking data for relevant sectors and estimating the proportion of the EU-27 workforce employed within those sectors and therefore potentially covered by the provisions of this Directive. In addition to the agricultural (NACE Code A) and construction (NACE Code F) sectors, subject experts advised that vibration exposure was common in the mines and quarries sector (NACE Code B) as well as in some subsectors of manufacturing (e.g. NACE Codes C16 – manufacture of wood products, and C25 – manufacture of fabricated metal products). The Directive can also be relevant to workers in some other specialist applications, such as landscape services (N81). From LFS data for 2012, using the widest available age range (15-75 years), it can be determined that a total of 26,811,600 workers are employed within the three codes A, B and F. To these can be added data from the SBS database for the relevant manufacturing (and other) subsectors (C25, 26, 27, 28, 29, 30, 31, N81) which results in a total workforce of 44,985,600. Based on total employed persons figures (LFS 2012) this yields an estimate that 20.9 % of the EU-27 workforce is employed in sectors where they are

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(86) http://www.eurofound.europa.eu/surveys/smt/ewcs/ewcs2010_04_02.htm
potentially exposed to vibration and for whom the Vibration Directive can be considered to be relevant.

Given the uncertainties over the various sets of data involved, these two estimates appear to be remarkably similar and give a clear indication of the proportion of the workforce to whom the Vibration Directive is relevant.

**Extent of current risks to health and safety**

From the EWCS 2010 data, 23% of respondents indicated that they were exposed at work to vibrations from hand tools, machinery, etc. at least 25% of the time. This gives some insight into the current relevance of this directive. In addition, 46.84% of all respondents indicated that they had suffered from ‘backache’ in the last 12 months. Of these, 21.98% were also exposed to vibration for at least 25% of the time and 13.11% reported both backache and vibration exposure.

**Current and future relevance**

With 25-30% of the EU-27 workforce work in sectors where they are potentially exposed to vibration, and based on the views of different stakeholders, it is concluded that the Vibration Directive has been relevant to date.

Although there are many different causes of backache, and a causal relationship cannot be assumed in these cases, these figures do appear to provide some indication of the proportion of the EU workforce for whom vibration exposure might be of relevance adding further support to the ongoing relevance of this directive. No collated data are available regarding the EU incidence of vibration-specific diseases such as HAVS.

Although some stakeholders in the EU and at the national level expressed concerns over the technical nature of the Directive, none of those discussed in the directive report appeared to be shared across other MSs, and none would seem to indicate any need to reconsider the content of this Directive to maintain current relevance or increase its future relevance. There appears to be a general view that, since many production processes are being automated, workers are interacting less and less with equipment that vibrates, and it has been suggested that the relevance of the Vibration Directive will reduce over time, although it will remain relevant over the 2020 timeframe.

### 5.6.5 2003/10/EC Noise Directive

**Number of MS where the Directive is potentially relevant**

As with the Vibration Directive, entries in the NIRs indicate that the Noise Directive has been transposed into national legislation in all MSs (ref. NIRs). Data from the most recent EWCS confirms that some workers report exposure to noise at work at least 25% of the time across all MSs confirming the ongoing relevance of this Directive.

**Proportion of EU workforce to whom the Directive is potentially relevant**

Consideration of NACE coding of economic sectors by OSH experts identified the following sectors as ones where the proportion of workers who might potentially be exposed to noise justified inclusion of the entire sector (or subsector). Although other sector subdivisions were identified

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these were either at a level of division where separate statistics were not available or the proportion potentially exposed was not considered to warrant inclusion. On this basis, the following sectors: Forestry and logging (NACE Code A2), Mining and quarrying (Code B), Manufacturing (Code C), Electricity, gas, steam and air conditioning supply (Code D), Water supply; sewerage; waste management and remediation activities (Code E), Construction (Code F), Air transport (Code H51), and Creative, arts and entertainment (Code R90) were selected for inclusion.

By calculating the sum of the workers in all these sectors, the Noise Directive can be regarded as relevant to 54,846,108 of the total number of workers in the LFS data, which amounts to 25.4 % of the EU workforce.

As an alternative, the EWCS, 2010 survey asked respondents ‘Are you exposed at work to - Noise so loud that you would have to raise your voice to talk to people?’ This criterion is often used as a rough guide to whether or not noise is sufficiently loud to present a risk of injury. From this survey, 29.9 % reported exposure at least 25 % of the time, a reasonably similar figure to that estimated above, suggesting that 25-30 % of the EU workforce is potentially at risk from noise exposure.

Extent of current risks to health and safety
As noted earlier, from the EWCS 2010 data, 29.9 % of respondents indicated that they were exposed at work to ‘Noise so loud that you would have to raise your voice to talk to people’ at least 25 % of the time. While these figures give no indication of the extent of actual risk, this criterion is often used as a practical guideline to noise levels being sufficient to warrant action and therefore gives some insight into the current relevance of this directive.

Additionally, the same survey includes statistics relating to those who report having had ‘hearing problems’ within the last 12 months. According to these statistics, 6.5 % of all respondents indicated positively. Whilst there are other work-related causes of hearing problems, and these cases will of course relate to historic exposure, this data gives some further indication of the possible extent of noise at work as a problem and therefore of the noise directive being of relevance.

Current and future relevance
Although technological change will possibly reduce noise emissions in some circumstances, and economic changes means that many traditionally noisy industries are declining within the EU, it seems likely that exposure to noise will continue for some workers and the Noise Directive will therefore remain relevant for the immediate future. However, some consideration should be given to exploring the possible implications for the provisions of the Directive of an aging workforce, both in terms of ‘older ears’ being exposed and of workers working for longer and therefore being exposed to noise for a longer period.

5.6.6 2004/40/EC EMF Directive

Number of MS where the Directive is potentially relevant
Directive 2004/40/EC relating to exposure to electromagnetic fields (EMFs) has been subject to a number of revisions. Directive 2013/35/EU of 26 June 2013 repeals the earlier Directive and revisions and establishes (ref. Article 16) that Member States have to enact the laws, regulations and administrative provisions necessary to comply with this Directive by 1 July 2016. At present therefore, the criterion of adoption into national legislation cannot be applied to this Directive. This
view is confirmed by reference to the NIRs, which indicate that most MSs have not implemented the provisions of either Directive, have repealed their transposition of the earlier Directive or do not actively enforce the provisions made (ref. NIRs).

Electromagnetic fields are produced by a wide range of sources that workers may encounter in the workplace. They are generated and used in many work activities. However, two of the main common industrial sectors where EMFs will be encountered include electrical power generation (low frequencies) and telecommunications (high and very high frequencies). It would appear that all MS have workers in these two main industrial sectors where exposure to EMFs might occur and therefore the Directive is potentially applicable to all MS.

Proportion of EU workforce to whom the Directive is potentially relevant

As noted earlier, there are a variety of sectors and occupations where exposure to EMFs is possible. They are generated and used in many work activities, including manufacturing processes, research, communication, medical applications, power generation, transmission and distribution, broadcasting, aeronautical and marine navigation, and security. However, with the exception of incidental exposures, which are difficult to estimate, each of these tends to represent a specialist sub-group within a sector making it difficult to establish the numbers of workers potentially exposed.

Consultation with OSH experts highlighted the main sectors within which the EMF Directive is relevant:

› C24 (Manufacture of basic metals)
› C25 (Manufacture of fabricated metal products, except machinery and equipment)
› D (Electricity, gas, steam and air conditioning supply)
› J61 (Telecommunications)
› Q86 - Human health activities

A combination of LFS and SBS data was used to determine the level of employment in each of these sectors. By using the available data it was estimated that the EMF Directive can be regarded as relevant to 7,994,934 workers in the EU-27 workforce, or 3.71 % of the total.

On the specific issues of welders (who are seen as a group at particular risk), a report financed by German Welding Society (DVS) and by European Federation for Welding, Joining and Cutting (EWF) states that, in 2007, there were nearly 837,000 welders, although the origins of this figure are not given. This would increase the above figure by less than 0.01 %.

Extent of current risks to health and safety

The ESAW data for 2008 (onwards) does not contain any category of injury appropriate to EMF exposure and the LFS AHM data is not sufficiently specific to allow data relating to EMF exposures to be extracted. The EWCS (2010) contains materials relating to the employment environment and employment health. However, neither of these sections includes any material from which data relating to current EMF exposure can be derived.

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\(^{88}\) Middeldorf K (2009) The economic importance of welding and joining in Europe: Production values, values added and employees. DVS - Deutscher Verband für Schweißen und verwandte Verfahren e.V. (German Welding Society)
Current and future relevance

Research by Franco et al. (2010) suggests that the use of MRI scanners in hospitals can have acute cardiovascular and memory effects. However, the authors concluded that they are uncertain whether the data on effects of EMF exposure are sufficient to assess whether the evidence is enough to act on.

This view with regard to MRI-related exposures was mirrored by EU-OSHA (89) in concluding that the health effects of static magnetic fields have not been thoroughly explored, and supported by the WHO, which noted more scientific data are needed to establish what the health risks from static magnetic fields are. Similar views have been reached in other published reviews of the field.

It would seem therefore that, given published doubts over the nature and extent of any risks, evidence of the extent to which these risks are a significant problem warranting legislative control in the form of an EU Directive is unclear and the whole rationale for this Directive can be questioned.

There appear to be considerable scientific doubts over the value and validity of the EMF Directive. The authoritative reviews by WHO and EU-OSHA have questioned aspects of the evidence-base for the EMF Directive (at least in respect of exposures from MRI) and have called for more scientific data to establish what the health risks are. Given the uncertainty over the nature and extent of any risks therefore, requiring employers to assess and manage them seems premature.

One EU stakeholder interviewed questioned whether the requirements (and resultant costs) the Directive imposes are proportionate to the extent of any risk to health or safety. In addition, possibly reflecting the scientific doubts, the NIR of one MS (UK) specifically recommends the repeal of this Directive.

In essence, therefore, there are strong concerns regarding the current (and future) relevance of the EMF Directive.

5.6.7 2006/25/EC Artificial Optical Radiation (AOR) Directive

Number of MS where the Directive is potentially relevant

The Artificial Optical Radiation (AOR) Directive has been transposed into national legislation in all MSs according to findings from the NIRs. Commonly encountered sources of infra-red radiation include industries where red-hot (molten) materials are utilised, such as glass-making (and glass products) and primary metal production (metal smelting and casting). Eurostat data shows relevant employment in these industries in all MSs with the exception of Luxembourg and Malta (90). A more detailed specific search of the Eurostat database, combined with further investigations, revealed relevant industrial activity in both of these MSs. On this basis, it was concluded that occupational risks relevant to the AOR Directive are potentially experienced by workers in all MS and the Directive can be regarded as relevant in all MS.

(89) Current and emerging issues in the healthcare sector, including home and community care. EU-OSHA, 2014
Proportion of EU workforce to whom the Directive is potentially relevant

As with EMF, there are a variety of sectors and occupations where exposure to AOR is possible, usually for small, select sub-groups of the workforce. For example, discrete UV light sources are used in pharmaceutical and research (e.g. fluorescence and sterilisation systems); motor vehicle repairs (e.g. curing of paints); and printing (curing of inks) as well as medical and cosmetic treatments (e.g. laser surgery, blue light and UV therapies). Again however, each of these tends to represent a specialist sub-group within a sector making it difficult to establish the numbers of workers potentially exposed.

Commonly encountered sources of infra-red radiation include industries where red-hot (molten) materials are utilised such as glass-making (and glass products) and primary metal production (metal smelting and casting). EU employment statistics indicate that employment in these sectors accounts for 2,489,526 workers, which amounts to approximately 1.2 % of the EU workforce. Adding welders as a specific group at risk would increase the above figure to approximately 1.6 % of the EU workforce (although some of these might be employed in the sectors already listed).

As an alternative source of data, EWCS data was examined. Earlier surveys (most recently 2005) used a more detailed level of classification of occupation than the 2010 data. Based on this material, a total of 3.31 % of EWCS respondents indicated that they were exposed to ‘Radiation such as X-rays, radioactive radiation, welding light, laser beams’ for some of the time as part of their job and that they worked in an occupation where such exposures were likely to be of a nature falling within the provisions of the AOR. Thus it can be suggested that the actual proportion of the EU-27 workforce to which the AOR Directive is potentially relevant is between 1.6-3.3 %.

Extent of current risks to health and safety

In terms of injury caused by AOR exposure there is very little evidence appropriate to use but, what little there is appears to suggest a very low level of actual injury. Across the EU-15, the ESAW database for 2007 records just 70 injuries entailing four or more days off work, and no fatalities across the EU-15 for ‘effects of temperature extremes, light and radiation’ whilst for ‘effects of radiation (non-thermal)’ there were again no fatalities and a total of 1,481 injuries. It is not possible to separate ionising and non-ionising radiation from these figures or determine in any other way the proportion of these attributable to exposure to AOR. Care should be taken in concluding that these figures indicate that AOR exposure is of only limited relevance to the EU workforce, because there are a number of longer-term consequences, such as cataracts and skin cancer, which are not captured by these figures.

Other statistics, documenting less specific ‘health problems’, give a slightly different picture. EWCS 2005 statistics indicate that those who report working most of the time exposed to ‘Radiation such as X-rays, radioactive radiation, welding light, laser beams’ (again restricted to those industrial sectors where such exposures are likely to be AOR) are more likely than those less exposed to report that their work gives them problems with their vision. The nature of the problems experienced is not known. To the extent that these problems relate to AOR exposure (which is not known) these figures might provide some limited justification for the ongoing relevance of the AOR Directive in terms of workers possibly at risk. However, given the tenuous nature of any presumed connection, there must be at least some doubt over the current relevance of the AOR Directive.

Current and future relevance

Opinions, drawn from interviews with stakeholder and expert groups from a number of MSs, together with material and recommendations from NIRs and representations by expert research
groups as to the future relevance of the Directive are mixed. Some evidence suggests that the AOR Directive is not at all relevant at present (including one MS providing objective evidence that AOR exposure did not appear to have contributed to any workplace accidents), with some stakeholders suggesting that technological changes would reduce its relevance still further. One stakeholder went so far as to recommend that the AOR Directive should be repealed in its entirety. This recommendation was also formally made by one MS in its NIR.

In contrast, another stakeholder felt that the AOR Directive had great relevance, in particular for the health sector, whilst a number of national stakeholders indicated that the AOR Directive was insufficient in that it did not cover outdoor work and the associated increased risk of skin cancer. This latter view was endorsed by representations from a scientific and medical research group concerned with skin cancers, although the views of this group were again countered by other evidence. One very recent study which estimates that, in the UK at least, approximately 2% of deaths from cutaneous malignant melanoma are attributable to occupational exposures to solar radiation, suggesting that these are deaths which are avoidable with appropriate control measures.

The AOR Directive is a little unusual in that, on the one hand, there is some doubt over its current (or future) relevance, but there are also suggestions that its scope should be extended to cover natural (solar) radiation, with evidence submitted to reflect this. However, it should be noted that there have also been counter-suggestions not to adopt such an extension, again supported by published evidence.

It has not been possible within the resources available for this review to carry out a comprehensive evaluation and weighing of the relative arguments for these two positions. There is very little evidence of reported injuries possibly arising from AOR exposure, although this does not encompass chronic exposure effects. This raises the issue of whether the burden placed on employers in complying with the Directive is proportionate to the benefits derived in terms of any reduction in injury and ill-health as a result. Such arguments could call into question the future need for this Directive. In contrast, it is widely accepted that exposure to natural light (sunlight) carries a risk to the safety and health of those exposed and some evidence to support the suggestion that the effects of work-related exposures can be differentiated from other non-work exposures and should therefore be regulated. Again, if accepted, such arguments could suggest a need for maintaining the Directive with an enlarged scope.

It is therefore suggested that there is a need for the Commission to open debate on the future of this Directive.

5.6.8 98/24/EC Chemical Agents Directive (CAD)

Number of MS where the Directive is potentially relevant
The Chemical Agents Directive has been transposed into national legislation in all MSs according to evidence from the NIRs. The use of chemicals in some form can be identified in each of the MSs. On this basis, the Directive can be regarded as relevant in all MS.

Proportion of EU workforce to whom the Directive is potentially relevant
As with some other Directives, there are a variety of sectors and occupations where exposure to chemicals is possible. Many of these represent specialist sub-groups. Professional OSH expert consideration of NACE coding of economic sectors suggests that the following sectors are relevant
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

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To this Directive: agriculture, forestry and fishing (NACE A); mining and quarrying (NACE B); manufacturing (NACE C); electricity, gas, steam and air conditioning supply (NACE E); construction (NACE F); transporting and storage (NACE H); and human health and social work activities (NACE Q).

Combining the total workers from each relevant sector gives a total of 97,546,200 workers or 45.2 % of the EU workforce to whom this Directive is relevant. As noted above, it is not assumed that all workers in these sectors are necessarily exposed to chemicals but it is assumed that this over-counting will be at least to some extent compensated for by the exclusion of workers from other sectors or sub-sectors not included. In addition to this estimate, Eurostat statistics (91) indicate that around 9-10 % of persons are employed in ‘size zero’ businesses (self-employed). Including these would increase this proportion to around 50 % of the ‘economically active’ population. Although this seems a large proportion it should be recognised that the Chemical Agents Directive does not just apply to those actively ‘working with’ chemicals in the sense of being involved in their manufacture. Some corroboration of this figure can be derived from EWCS data which shows that approximately 50 % of respondents reported ‘never’ working with chemicals (meaning presumably that the other 50 % do so at least from time to time).

Extent of current risks to health and safety

ESAW statistics on fatal accidents at work do not give any indications as to whether any of the fatal injuries recorded arose from exposure to chemicals. Similarly, the collated statistics on non-fatal accidents do not permit those arising from chemical exposures generally to be identified. However, statistics are recorded for accidents arising from contact with ‘chemical, explosive, radioactive, biological substances - not specified’. Although not exclusively concerning chemicals, this database records that in 2005 there were 40,411 such accidents (representing an incidence rate of 36.9 injuries resulting in more than three days lost per 100,000 employed), or 0.6 % of the total.

According to EU LFS AHM (2007) data, 3.6 % of respondents reported experiencing work-related pulmonary disorders in the last 12 months whilst 1.8 % reported skin problems. Whilst chemical agents were not necessarily responsible for these problems they are common causes of such problems and give some insight into health problems possibly related to exposure to chemicals.

EWCS 2010 data shows that 16.5 % of respondents reported breathing in smoke, fumes, powder or dust, doing so at least a quarter of the time. For breathing in vapours such as solvents and thinners, and handling or being in skin contact with chemical products or substances the equivalent values were 10.4 % and 14.7 % respectively. Plotting the reported duration of such factors against those reporting breathing difficulties and skin problems shows a trend for increasing likelihood of reporting such problems with increasing daily duration of exposure. These sets of data appear to indicate the ongoing need for risk management and the relevance of the Chemical Agents Directive.

Support for this can be derived from the research literature which shows continuing respiratory health problems such as occupational asthma and COPD.

There is evidence of other health problems as well. For example, research studies suggest that the most important risk factor for Occupational Contact Dermatitis (OCD) is exposure to ‘irritants’, a term which encompasses many chemicals and other agents. From such material, it is clear that

(91) Key figures on European business with a special feature on SMEs. Eurostat 2011
exposure to chemicals makes a significant contribution to respiratory health issues, reinforcing the view that the Chemical Agents Directive is of considerable relevance.

As further evidence of the need for managing occupational risks associated with chemicals, the 2009 ESENER survey asked managers and employees about their concerns regarding dangerous substances (including dusts, chemical, biological or radioactive agents). Almost 70% of both groups indicated some or major concerns.

Current and future relevance
Clearly therefore, these various sets of data and opinions indicate that there is an ongoing need for control of risks to health and safety arising from exposure to chemicals in the workplace and therefore an ongoing relevance of the Chemical Agents Directive.

Whilst the need for the protection provided by the Chemical Agents Directive (and Carcinogens or Mutagens Directive) is not in doubt, a need to improve the manner through which changes to Limit Values are agreed and enacted is seen, as the current approach is slow and unwieldy, and tends therefore to lag behind developments in scientific knowledge (see below).

It is difficult to separate discussions over the current and future relevance of these two directives because many of the comments can apply to both. One such example are the comments relating to what are seen as the emerging risks associated with nanoparticles and nanomaterials. Although these are chemical agents, and therefore addressed by the Chemical Agents Directive (and possibly also the Carcinogens or Mutagens Directive where some substances are regarded as potentially carcinogenic), some concerns have been expressed that existing legislation is not sufficient to ensure management of any risks arising, thereby impacting its relevance (and potential effectiveness).

Nanoparticles
Member States were specifically asked through the NIR template whether the Chemical Agents Directive adequately addresses the risks from nanomaterials. Most did not provide an unequivocal answer although the majority appear to indicate that the provisions of the Chemical Agents Directive should be adequate. Nevertheless, some other MSs gave a clear response that they considered a new Directive to be required. The general view appeared to be that the framework for assessing and managing risks from chemicals, outlined in the Chemical Agents Directive, should be sufficient but that, in reality, the lack of clear knowledge and understanding of what those risks were made this problematic.

As suggested earlier regarding the Work Equipment Directive, suggestions for change to accommodate emerging risks perhaps to some extent reflect national differences in OSH management, where those MSs who adopt a more goal-setting approach are more likely to regard existing provisions as sufficient, whilst those MSs who tend to adopt relatively prescriptive legislation might need to make further prescriptions to clarify the most appropriate methods for controlling the risks associated with working with nanoparticles.

This issue was discussed at the seminar held with stakeholders to discuss some of the issues emerging from the study (‘validation seminar’). It was clear from this, together with earlier consultations, interviews and discussions, that there was no consensus as to whether or not a new Directive was required or whether existing provisions would suffice.
Scientific opinion, expressed by subject-matter experts, is that the broad provisions of the Chemical Agents Directive can be applied to managing any risk from nanoparticles. Certainly, the recently published (2014) guidance from the European Commission on potential risks related to nanomaterials, referenced in the Chemical Agents Directive report, makes this clear. It remains to be seen whether this and related materials serve to assuage the concerns of those stakeholders who have expressed the view that a revision of the Chemical Agents Directive (or a new Directive) was necessary to counter these risks.

Merging the Chemical Agents Directive and Carcinogens or Mutagens Directive

Although the nanomaterials guidance referred to above provides guidance in the context of the Chemical Agents Directive, it does defer at times to the more stringent requirements of the Carcinogens or Mutagens Directive. There are suggestions, at least from a legal perspective, that merging the two (Carcinogens or Mutagens Directive and Chemical Agents Directive) in the future would provide for a more coherent approach, enhancing the relevance of control in this important field. This view is consistent with that expressed by Germany in their NIR, which ‘urgently’ recommended a reduction in the number of Directives.

Discussions amongst stakeholders at the seminar held with them to discuss some of the issues emerging from the study (‘validation seminar’) revealed that there was no clear consensus amongst the stakeholders present, with some favouring a merger but others preferring to retain the two Directives. There was a suggestion that merging the two might make compliance and risk management easier for SMEs and it was argued that merging of directives would be beneficial, reducing duplication and removing confusion amongst employers. Others argued that there is no need to merge the directives as it is open to MSs to implement their provisions within a single legislative instrument; and that any such changes would be burdensome for MS in having to alter legislation.

Limit values

The subject of OELs was mentioned by several stakeholders. Some questioned the evidence-base for some OELs, especially those in the Carcinogens or Mutagens Directive where the relationship between the Carcinogens or Mutagens Directive OELs and the Binding OELs in the Chemical Agents Directive also attracted comment. It was suggested by some that the rate of introduction of new chemicals into the workplace tended to move faster than the level of knowledge and awareness of those in authority (such as Inspectors – and the development of OELs) could keep pace with.

Also, one explicit recommendation for amendment was offered by the UK NIR, to ‘Review the limits for exposure to lead set out in Annex I and II, in the light of current scientific evidence.’

Many MSs have implemented additional Limit Values for chemicals not covered by the Chemical Agents Directive and those supplementary lists issued since. Some have also implemented lower limits than those established under the Directive. Although in some cases this reflects a divergence of opinion between national experts and those advising the EU as to what the limit should be it more usually reflects the relatively slow rate with which limits for new substances can be incorporated into legislation at an EU-level. A concern expressed relating to this was that variations in national exposure limits (provide for under the Chemical Agents Directive) would lead to work being directed towards other countries where higher or no limits existed.
An EU worker representative stakeholder comment expressed concern that no further Binding OELs have been published since those included in the initial Carcinogens or Mutagens Directive. In this context it is noted that the ACSH has published an opinion (Doc. 2011/12) on a proposed amendment of the Carcinogens or Mutagens Directive to introduce further Binding OELs, although it is not known what progress has been made in this regard since that time.

The need to review and revise the system of agreeing limit values for chemicals to ensure the ongoing relevance of these two directives is clear and is discussed further, alongside issues such as other exposure classification systems such as DNELs (REACH), in the Chemical Agents Directive report.

One Directive-specific issue relating to the Carcinogens or Mutagens Directive is the question of whether or not the scope of this Directive should be extended to include reprotoxins. It was noted that over a third of MSs already accommodate them within their equivalent legislation suggesting a degree of tacit support for such a measure. However, it is suggested that including consideration of reprotoxins and how best to control the risks they present within a wider debate over the future of the Chemical Agents Directive and the Carcinogens or Mutagens Directive provides the best option given the current lack of detailed data.

As a further issue, the prospect of identifying some carcinogens or mutagens for which an evidence-based safe threshold can be established would generate additional pressures to revise the Carcinogens or Mutagens Directive, with its assumption that such thresholds cannot be identified and its focus on measures such as substitution and the use of closed systems (as well as an explicit requirement for exposure levels to be reduced as low as technically possible).

### 5.6.9 2004/37/EC Carcinogens or Mutagens Directive (CMD)

#### Number of MS where the Directive is potentially relevant
The Carcinogens or Mutagens Directive has been transposed into national legislation in all MSs according to evidence from the NIRs. The possibility of exposure to potential carcinogenic substances covered by the Carcinogens or Mutagens Directive can be identified in each of the MSs. On this basis, the Directive can be regarded as relevant in all MS.

#### Proportion of EU workforce to whom the Directive is potentially relevant
Professional OSH expert consideration of NACE coding of economic sectors suggests that the following sectors are relevant to this Directive: mining and quarrying (NACE B); Construction (NACE F); selected subcategories of manufacturing (NACE C); manufacture of wood and of products of wood and cork, except furniture (NACE C16); manufacture of coke and refined petroleum products (NACE 19); manufacture of chemicals and chemical products (NACE C20); and manufacture of other non-metallic mineral products (NACE C23). Finally, a selected sector within the transporting and storage sector (NACE H) and within land transport and transport via pipelines (NACE H49).

Combining the total workers from each relevant sector gives a total of 26,547,801 workers, or 12.3 % of the EU workforce to whom this Directive is relevant. To provide some cross-reference, the
SHEcan report (92) included estimates that there were probably in excess of a million workers currently exposed to each of six of the 25 substances studied.

It is recognised that there are other sectors (e.g. workers in industries involving the processing of leather, textiles, etc.) where some workers might be exposed to carcinogens or mutagens. However, any inclusion of these would entail a guess as the proportion from the sector involved. This potential underestimate will be balanced to some extent by the fact that many workers in the sectors utilised above will not be exposed.

Extent of current risks to health and safety

No comprehensive data on current exposure to carcinogenic and mutagenic substances across the EU-27 are available. However, despite the shortcomings in the data, it is clear from a variety of sources that workers in the EU-27 continue to be potentially at risk from exposures to carcinogenic and mutagenic substances, and that there is therefore an ongoing need to control such exposures to remove or reduce the risks.

It is difficult to gain a clear picture of the current health impacts of such exposures. The long period of latency of many cancers and the delay before many mutagenic changes become manifest makes it difficult to establish the current level of problems in terms of registered cases or deaths. However, published data from the UK estimates that, in Britain in 2005 and 2004, 8010 (5.3 %) of all cancer deaths (6,073 excluding mesothelioma) and 13,598 of cancer registrations (11,661 excluding mesothelioma) were attributable to occupation.

Data from the individual NIRs show varying levels of occupational cancer (deaths and incident cases) with much missing data and suggestions of under-recording.

Current and future relevance

This material, as well as the substance specific studies identified in the Directive report, gives a strong indication that this Directive remains relevant at present.

Clearly, these deaths and cancer registrations reflect the legacy of historical exposures and, because of the lengthy disease latency, deaths and illness arising from occupational exposures to carcinogens will continue for some years. As epidemiological evidence continues to be accumulated and our knowledge of the aetiology of different forms of cancer grows, it is likely that the Chemical Agents Directive will continue to be relevant. However, it must be borne in mind that there are significant occupational factors which contribute to that aetiology (such as shift work) which are not encompassed by the provisions of the Chemical Agents Directive.

The issues of merging the Chemical Agents Directive and Carcinogens or Mutagens Directive, together with the shortcomings of the current system for establishing limit values as discussed above, are also applicable here.

(92) Cherrie et al. (2011) Health, socio-economic and environmental aspects of possible amendments to the EU Directive on the protection of workers from the risks related to exposure to carcinogens or mutagens at work: Summary report.
5.6.10 2009/148/EC Asbestos Directive

Number of MS where the Directive is potentially relevant

All MS have transposed the provisions of this or the earlier Asbestos Directive (Directive 83/477/EEC) (ref. NIRs). EU-OSHA has indicated that all construction, maintenance and cleaning workers are potentially at risk from exposure to asbestos (93). Trades at risk include: plumbers; heating engineers; electricians; joiners; carpet fitters, and fitters of other floor finishes; shop fitters; maintenance staff, including contract staff and janitors; roofers; and cleaners. No MS is known where asbestos has not been used in the past. As such, it is clear that there will be workers in all MSs potentially at risk from asbestos exposure and for whom therefore the provisions of this Directive are relevant.

Proportion of EU workforce to whom the Directive is potentially relevant

Turning to the labour market, the potential for exposure to asbestos is most marked in the construction sector. Though new uses of asbestos are banned under the Directive and no construction workers involved in new-build projects will be at risk, it is not possible to differentiate this subgroup within general employment statistics. Rushton et al. (2010) provide a useful indication of the occupational groups where cancer registrations are recorded, together with potential exposures to carcinogens including asbestos. This identifies construction workers as the main group at risk.

A UK-based study, specifically of mesothelioma (94), again identified construction trades (especially carpenters) as being at particular risk. Other high-risk occupations included lagging and shipyard work, though in these cases, many will probably reflect historical exposures when asbestos was still used for insulation and fire protection. On this basis, data on employment in the construction sector (NACE Code F) was obtained from the LFS database as in indicator of the proportion of the EU-27 workforce potentially covered by the provisions of this Directive. Although this probably constitutes an over-estimate, it was considered that this would, in some way, compensate for the omission of other small sectorial sub-groups not included.

Of these, 15,438,900 were employed within the construction sector. The Asbestos Directive can therefore be regarded as relevant to 7.2 % of the EU workforce.

Extent of current risks to health and safety

Despite the well-recognised impact of asbestos exposure, there is very little data regarding the actual current level of disease resulting from such exposures. One challenge in determining current relevance is the long latency of asbestos-related disease and the fact that symptoms are not specific and do not emerge until the cancer is well-advanced. One estimate suggests approximately 5,000 male deaths (in 1998) from mesothelioma in Western Europe. More recently, another study has suggested 4,738 deaths from asbestosis and 1260 from mesothelioma across the study period (8-13 years up to around 2013) in a group of six Central and East European countries for whom data were available.

Although the use of asbestos is now banned, it is understood that asbestos can still be found in a considerable number of locations. In 1997, it was estimated that some 75% of commercial buildings in the UK still contained some asbestos. Although relatively old data, it is clear that residual asbestos remains a problem. A recent (2015) opinion of the European Economic and Social Committee (EESC) stated: ‘The total removal of all used asbestos and all asbestos-containing products has to be a priority target of the European Union’ (95).

Current and future relevance

It is clear from the statistics above, therefore, that the Asbestos Directive remains relevant and is likely to remain so whilst significant quantities of asbestos remains in buildings and other work locations.

In relation to clarifying aspects of the Asbestos Directive and therefore enhancing its future relevance, some comments from stakeholders and NIRs have been collated advocating improving the definition of some terms. Thus one EU stakeholder commented that there is no criterion within the directive to define sporadic and low intensity. This is clearly important because of the possible exemption within Article 3(3) from certain duties ‘Provided that worker exposure is sporadic and of low intensity,...’. It is understood that the concept of sporadic and low-intensity exposure is subject to different interpretations within individual MSs, where each MS defines it in different ways. This could become of increasing importance with the growing attention to locations such as schools and offices, in accordance with the European Parliament resolution of 14 March 2013, where exposures might normally be expected to be sporadic and low intensity.

The NIR from one MS (UK) comments on other aspects of the same article, with the use of terms such as ‘non-friable’ and ‘deterioration of non-degraded materials’ that are not defined.

The question has been raised of introducing a lower limit value for exposure (as already implemented in two MSs with a third adopting a slightly different approach). It would seem that there is some epidemiological evidence to support a lowering of the limit, which would serve to increase the ongoing relevance (and effectiveness) of the Asbestos Directive.

5.6.11 2000/54/EC Biological Agents Directive

Number of MS where the Directive is potentially relevant

The Biological Agents Directive has been transposed into national legislation in all MS according to evidence from the NIRs. According to EU-OSHA, exposure to biological agents can occur whenever people are in contact at work with natural or organic materials such as: soil, clay, plant materials (hay, straw, cotton, etc.), substances of animal origin (wool, hair, etc.), food, organic dust (e.g. flour, paper dust, animal dander), waste, wastewater, blood and other body fluids. They are therefore potentially encountered in a wide variety of occupational groups represented in all MS and so the Directive remains relevant in all MS.

Proportion of EU workforce to whom the Directive is potentially relevant

Consideration of NACE coding of economic sectors suggests that primary code A (Agriculture, forestry and fishing) is an obviously category for inclusion. Selected subcategories of

(95) EESC. Opinion of the European Economic and Social Committee on Freeing the EU from asbestos. CCMI/130 Asbestos.
manufacturing (NACE Code C), involving the handling of plant or animal products were also selected (C10, C11, C12, C13, C14, C15) as were pharmaceutical products (C21). Finally, NACE Codes E (Water supply; sewerage; waste management and remediation activities) and Q (Human health and social work activities) were also selected for inclusion. The Biological Agents Directive can therefore be regarded as potentially relevant to at least 20.4% of the EU workforce.

Extent of current risks to health and safety

No suitable data can be identified at the EU level relating to injuries or diseases associated with biological agents. The Eurostat ESAW database includes accidents at work resulting in more than three days at work arising from ‘poisonings and infections’, so it is not possible to separate out these two very different causes. LFS AHM data provides a breakdown of health problems by type of problem, including an entry ‘infectious diseases’. From this, 1.8% of respondents indicated that their most serious work-related problem over the preceding 12 months had been an infectious disease. However, it is not possible to restrict the data to those reports originating from those workers likely to have been exposed to biological agents as part of their work and so the possibility that such problems were acquired through other avenues (e.g. an infection acquired from a work colleague) cannot be excluded.

An EU-OSHA Risk Observatory report from 2009 alluded to this problem stating: ‘There are only limited data on occupational exposure to infectious biological agents in the EU’.

The Health Council of the Netherlands cite estimates that 5,000 workers in the European Union die each year as a result of occupational exposure to biological agents. They suggest that the number of workers who fall ill due to occupational exposure to biological agents is probably much higher, but is difficult to estimate because there is no specific monitoring in this field and the reported data are insufficient.

Data from the EWCS survey (2007) identifies reported exposures in the responses to the question ‘Are you exposed at work to - Handling or being in direct contact with materials which can be infectious?’. Given the fact that even transient exposures to infectious agents can result in illness it seems appropriate to consider all those who consider that they might be exposed to such potentially infectious materials at some time. The database records that 78.8% of respondents stated that they never encountered such exposures. By default therefore, it is assumed that 21.2% might, at some time, be exposed. Clearly however this only includes overtly infectious materials.

Despite the shortcomings of the data, the cumulative evidence from ill-health associated with infection from biological agents is that biological agents remain a significant potential cause of work-related ill-health and that the Biological Agents Directive therefore remains relevant.

Current and future relevance

A number of Member States regarded the classified list of infectious agents to be out of date. This was the most frequent response to a specific question in the NIR template regarding whether or not the Directive needed adaptation to take account of the pattern of accidents or ill health. Updating the classification (and lists) of pathogens would clearly improve the current relevance of the Directive. However, to maintain its future relevance it would seem that an efficient mechanism needs to be devised, to enable this list to be updated regularly and easily.

Clearly, in order to retain its relevance, the Directive needs to respond to emerging risks (and others which might develop) which should be within the scope of the Biological Agents Directive.
However, the emergence of such new risks means that the Directive is likely to remain relevant against a horizon of 2020.

Overview
In addition to the issue of nanoparticles discussed above, two areas of particular concern have been identified relating to ongoing or emerging risks. These are MSD risks not currently addressed; and psychosocial risks. To help ensure the ongoing relevance of the overall OSH acquis, these issues need to be addressed in the period up to 2020. These issues are discussed in greater detail in the appropriate Directive reports (for psychosocial risks see that on the Framework Directive whilst MSD risks are discussed in the report on the Manual handling Directive), and will be discussed at an OSH-acquis level in the subsequent chapter on effectiveness, but the issues are summarised below.

In addition, some questions have been raised regarding the Agriculture sector and whether there is any justification for a sector-specific Directive.

Psychosocial risks
The second emerging issue from the evidence considered was that of psychosocial risks. In addition to the views expressed by stakeholder at the EU and MS level, quantitative evidence shows that psychosocial risks are a considerable work-related risk. In the ESENER 2009 survey, 37 % of respondents across the EU-27 indicated that work-related stress was of major concern whilst, in the 2007 LFS AHM responses, 20 % indicated ‘stress, depression, anxiety’ as a work-related health problem. Equivalent data for the 2013 survey is incomplete (DE, AU & NL missing). However, for the majority of MSs for whom data are available (12 out of 21) the percentage reporting such problems appears to have increased, suggesting that the problem is no better and, overall, be worse.

Psychosocial risk factors, which interact and combine in a complex fashion, include:

› Excessive demands or exposure to physical hazards
› Having inadequate say over how work is done
› Having inadequate support from managers or co-workers
› Being subjected to unacceptable behaviours - including harassment or violence
› Not understanding roles and responsibilities
› Not being involved and informed in organisational changes
› Verbal or physical violence, or the threat of violence.

As with MSD risks, a complication is that not all episodes of ‘stress, depression, anxiety’ are necessarily caused by work. Nevertheless, there is an extensive body of research evidence to establish these as work-related risk factors and no existing Directive (with the exception of the Framework Directive) addresses them, reflecting another clear ‘gap’ in terms of workplace risks for which no specific legislative provision exists at present and therefore for which no legislation provides protection to workers.

5.6.12 High risk sectors not specifically addressed
The agriculture sector is widely regarded as one of the most hazardous sectors in the EU. According to EU-OSHA: ‘The fatal accident rate, for the old EU 15 Member States, in 2000, was 12.6 per 100 000 workers, and for accidents with more than 3 days absence the rate is over 6000
per 100,000 workers. These rates are some of the highest for any industry (96). More recent data (ESAW) for the EU-27 do not support this view (2012 figures for non-fatal accidents show an incidence rate of 1,234.3 for ‘Crop and animal production, hunting and related service activities’ compared to an industry-wide average of 1,558.52 per 100,000 workers for all NACE activities), although it is generally believed that there is widespread underreporting of such accidents within the sector. It is interesting to note that the 2012 figure for the EU-15 is higher at 2,249.55 (cf. 1,831.51 overall).

A paper presented to the European Parliament on Safety and Health in Agriculture (2012) refers to ‘the characteristics of the Agriculture sector with its persistently high and disproportionate levels of fatal and non-fatal injuries and ill-health’ (97).

Other high-risk industrial sectors such as mineral extraction (two Directives), construction, and fishing have sector-specific directives. As the Parliament paper notes: ‘OSH in Agriculture is not covered by a specific EU Directive’.

The Framework Directive provides for such a directive. Article 16(1) refers to the Council adopting individual directives ‘in the areas listed in the Annex’. The annex lists seven ‘areas’ of which the last is ‘Fisheries and agriculture’. Although individual directives have been adopted for all the other six areas, and fishing (rather than fisheries), agriculture remains.

Although not raised as an issue by any stakeholders interviewed about gaps in provisions, discussions have raised the question of whether this is a legislative gap which should be filled.

In general, these sector-specific directives do not in general seek to provide broad protection against the risks encountered in those sectors. For example, although it is widely recognised that there are many chemical hazards in the construction sector, as well as physical hazards such as noise and vibration, the Construction Directive (92/57/EEC) does not seek to address these. Rather, as described in its preamble, it seeks to address issues such as ‘unsatisfactory architectural and/or organizational options or poor planning of the works at the project preparation stage have played a role in more than half of the occupational accidents occurring on construction sites in the Community’; or ‘Whereas, when a project is being carried out, a large number of occupational accidents may be caused by inadequate coordination, particularly where various undertakings work simultaneously or in succession at the same temporary or mobile construction site.’ Similar considerations relate to the mineral extraction directives. Thus, such directives do not seek to address OSH in general within the sector but rather to make provision for what are regarded as factors unique to that sector.

The question to be asked therefore is not, ‘Is the agriculture sector a high-risk sector?’ but ‘Are there risks, unique to this sector, which are not otherwise addressed?’ According to EU-OSHA, ‘most common cause of serious and fatal injuries in agriculture involves moving and overturning vehicles. Other causes of accidents include:

› falling from a height (through fragile roofs, trees etc.)
› struck by moving or falling objects (bales, trees etc.)

trapped by something collapsing or overturning
livestock-related fatalities
asphyxiation/drowning.'

However, according to the paper to Parliament the unique aspect of agriculture is not these (which are probably addressed to some extent at least by existing provisions), but the nature of its workforce. Thus: ‘agriculture is unique in terms of workplaces, the vast majority of farmers across Europe are self-employed, self-supervised individuals largely reliant on family labour’ and, following on from this, ‘while various EU Directives do address certain health and safety issues, self-employed workers are not well covered.’ The report concludes: ‘The challenges in Agriculture cannot be solved with the same approach as in other sectors, such as construction, as Agriculture is predominately made up of self-employed individuals.’

The issue of extending OSH provisions to the self-employed has been raised earlier in relation to the Framework Directive. It would seem that the challenges of the agriculture sector should provide a particular impetus to such considerations.

5.6.13 Vulnerable groups

It could be argued that self-employed workers, identified as a particular challenge to ensure the future relevance of OSH Directives in the agriculture sector, are a form of vulnerable group – although they are not usually regarded as such. OSH Directives include three aimed at specific vulnerable groups: the Pregnant/breastfeeding workers, Young People and Temporary workers Directives. However, a consistent theme to emerge in discussions with stakeholders and in reviewing published work on OSH and vulnerable groups is that of ageing workers. There is a clear recognition that the age profile of the EU workforce is changing, with a gradual increase in the proportion of older workers (and consequently in the average age) within the workforce. This is not a Directive-specific issue although there is scientific evidence that some potential consequences include:

Greater cumulative exposure to risks such as chemicals, and physical agents such as noise and vibration
Increased susceptibility to MSDs
Longer periods of recovery post-illness (such as MSDs)
Lower resilience to psychosocial risks
Possible increased susceptibility to injury due to deteriorations in eyesight, reaction time, etc.

There have been no specific recommendations or suggestions from MSs or stakeholders for an ‘Older Workers Directive,’ and it is possible that any increased risk is best assessed, and appropriate action taken, within the existing framework of provisions. Nevertheless, it is clear that such workers do face additional or enhanced risks and that consideration should be given to these to ensure the future relevance of the OSH Directives in meeting the needs of the EU workforce.

5.7 General discussion of current and future relevance

5.7.1 Overview

Two issues can be identified and need to be addressed when considering the current relevance of each of the 24 Directives. The first is the question of whether or not the need for each Directive remains, i.e. whether the risks which they are intended to address are still present. The second concerns the specific content of each Directive and asks whether that content is still relevant. A secondary question to this issue is whether Directives are the best approach. However, this question overlaps to a degree with that of the effectiveness of the Directives, and will be addressed later.

Following on from this consideration of the risks covered by the Directives there is the related issue of those risks not covered (with the exception of the overall provisions of the Framework Directive). Here, the reviews have identified three areas of widespread concern. Firstly, it is widely recognised that some of the hazards giving rise to risks of musculoskeletal disorders are not explicitly addressed by any of the existing individual Directives. This issue has been extensively debated and documented within the EU, with Impact Assessments of alternative approaches and other exploratory actions taken. In particular, industrial repetitive work activities, which may or may not include the application of force, do not fall within the scope of the Manual Handling Directive.

A second area of widespread concern is that of psychosocial risks. Apart from a specific reference to stress as a consequence of work with display screen equipment (which may not actually be justified given the available evidence), none of the individual Directives specifically address these risks, despite clear evidence that ill-health attributable to such risks is a significant problem.

Thirdly, and possibly less unequivocally, concerns have been expressed regarding the risks associated with nanoparticles or nanomaterials. In this case, it is less clear whether they are already addressed, as some take the view that they are adequately encompassed by the provisions of the Chemical Agents Directive whilst others advocate a new Directive (as discussed above in respect of the Chemical Agents Directive).

5.7.2 General Relevance of Directives

Turning to the relevance of the Directives in terms of the risks addressed, the individual Directive reports provide extensive documentation (where available) of quantitative and qualitative material (briefly summarised above) of the extent to which the risks encompassed by each Directive are still present and still appear to give rise to injuries and ill-health. Although in some cases, material is highly specific (e.g. data on Hand Arm Vibration Syndrome can only relate to hand-arm vibration exposure, and data on asbestos to asbestos exposure), in many cases the association is more tenuous.

A good example of this is back pain, where there are many work and non-work factors which can cause or contribute to the incidence of back problems. For example, scientific evidence (99) has suggested that degeneration of the lumbar intervertebral discs (a significant contributory factor in

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some back pain) is 43% attributable to familial (genetic) factors. Despite such influences however, others have concluded on the basis of evaluation of the cumulative scientific evidence that there was strong epidemiological evidence that the physical demands of work can be associated with increased reports of back symptoms or aggravation of symptoms; as well as for the physical demands of work being a risk factor for the onset of back pain (100). In the workplace, poor sitting postures (DSE Directive), manual handling (Manual Handling Directive), and whole-body vibration have all been associated with back problems. So, even where an injury is work-related, attributing any injury to a specific causal factor and therefore to a specific Directive is often difficult.

From a combination of examining available sources of data (subject to the caveats outlined above); the combined opinions of stakeholders at both EU and national level; and the NIRs, supplemented where appropriate by evidence from published sources, it can be determined that the risks addressed by most Directives still remain and that most of the Directives (but not all) are therefore largely still relevant. Given the inadequacies of available data sources this conclusion is less easily formed for some Directives than others, and the report contains details of where there are doubts at least over specific provisions of individual Directives if not the Directive itself.

Some Directives, such as the Framework and Workplace Directives, as well as those relating to vulnerable groups such as young people, are potentially applicable to almost any workplaces and, where industrial sectors are concerned, the provisions of the Work Equipment Directive will often also be applicable. As a result, determining which provision of which Directive is applicable in respect of any specific risk (and therefore relevant) is often difficult if not impossible, especially where injury and ill-health data do not identify the causal agent or mechanism. As a result, it can be difficult to determine which provisions of which Directives are applicable and therefore remain relevant.

With few exceptions, the limitations of available data rarely permit the quantitative appraisal of the relevance of individual Directive provisions. Any assessment must therefore, of necessity, be based to some extent at least on the qualitative views and opinions expressed by the wide range of stakeholders and experts interviewed as part of the project.

At a general, pan-Directive level, few it seems would disagree with the broad approach to managing risks to health and safety embodied in the Framework Directive and further expressed in the various individual directives. The concept of reducing risk by removing hazards (for example in banning the use of asbestos) in preference to managing exposure to those hazards does not meet with many objections (especially amongst professional health and safety practitioners).

To a degree, this consistency of approach is reflected in the CPMs, although some concerns have been expressed regarding the extent to which the CPMs within individual Directives are recognised as part of this overall concept, as opposed to imposing separate duties. For example, the CPM relating to risk assessment is seen by some as generating a multiplicity of such assessments, one for each Directive in which the CPM occurs.

Differing opinions over the requirement for risk assessments to some extent reflect variations in the national (cultural) approach to workplace health and safety and its enforcement. In some MSs, the risk assessment is seen as tangible evidence of compliance while, in others, the explicit emphasis

on risk assessment is seen as diverting attention away from actually controlling or managing the risks identified.

Despite these specific concerns, the ongoing relevance of most Directives appears to be generally accepted by most stakeholders and, where suitable objective evidence is available, this generally supports this view. However, a wider cross-cutting question can be raised regarding future evolution of the Directives concept. In essence, the question must be asked as to whether or not directives provide the best way of regulating (or rather standardising the regulation of) workplace health and safety.

The paucity of direct data means that it is not possible to directly answer the question as to whether or not directives provide the most appropriate vehicle for such measures. Evidence from ESENER-2, cited below (6.2.3), does indicate that the legal obligation to do so is the most often cited reason for addressing health and safety. This would appear to give strong support for arguments that guidance alone is not sufficient – but does not allow the determination of whether or not there is an alternative legal vehicle for introducing such provisions as are currently adopted via directives.

5.7.3 Current and future relevance: conclusions

As summarised above, most of the Directives can be seen to remain relevant in all MSs. With the exception of those few instances described where a MS does not have economic activity in a particular sector covered by a Directive, all MSs have some workers potentially at risk from all of the hazards and risks of injury or ill-health covered by the Directives. However, evidence has been summarised, particularly in respect of the EMF Directive, which questions the need to retain this directive and there are doubts and concerns about others, or at least about specific provisions within certain directives. These are summarised above on a directive-by-directive basis and addressed further below in regard to ensuring the future relevance of the Directives.

In summary, there have been no consistent views expressed to suggest that any of the Directives would cease to be relevant in their entirety in the period up to 2020. Concerns have been expressed regarding two directives which, particularly in respect of the EMF Directive, question the need to retain these directives. The second Directive (AOR) presents a strange situation. On the one hand, the weight of the evidence for the risks currently addressed would suggest that there might not be a need for this Directive. On the other hand, there is at least a plausible case for considering providing protection to workers exposed at work to solar radiation, thereby extending the scope of the Directive.

However, a number of specific issues have been identified regarding some of the provisions of individual Directives which potentially influence their future relevance. These are summarised above and will not be repeated here. They include clarifications, extensions, deletions, etc., as considered necessary to improve or maintain the future relevance of the existing directives.

As well as recommendations or suggestions relating to existing Directives, consideration has also been given to additional provisions to address workplace hazards not already covered (other than implicitly by the Framework Directive which covers any risks). Two areas which have been identified, for which there is a clear need for action, are the introduction of measures to control:

› Workplace hazards which present a risk of MSDs which are not addressed by existing provisions
Workplace hazards which create risks to psychosocial health (known as ‘psychosocial risks’).

Evidence is summarised relating to each of these topics and suggestions made for further initiatives.

As well as hazards not already covered, consideration has been given to whether or not there was any need for further sector-specific measures to address risks not already covered in what might be regarded as high-risk sectors. This discussion has focussed on the agriculture sector which, despite having been specifically referred to in the Framework Directive as warranting action, has yet to be the subject of any specific legislation. Again, evidence regarding this is summarised above and won’t be repeated here. However, it would seem to be recognised that the problems in the sector stem more from the nature of employment in the sector rather than in respect of any unique hazards not otherwise addressed. It is possible therefore that any need for action in relation to the agriculture sector would best be regarded as part of a wider need to consider extending OSH provisions to the self-employed and to others, such as family businesses where the usual employer-worker relationship doesn’t hold.

Finally, it is widely recognised that, in common with many other parts of the world employment market, the EU is facing a progressively aging workforce. Many actions and initiatives are underway which recognise that, as a group, older workers have special needs and vulnerabilities in respect of their younger colleagues. However, at present, unlike some other vulnerable groups (such as young people), they are afforded no specific protection. It is suggested that their needs might best be seen in the context of a wider appraisal of how the OSH needs of different vulnerable groups are addressed in the future.
6 Assessment of effectiveness

6.1 Introduction

The overall objective of the OSH acquis is ‘to introduce measures to encourage improvements in the safety and health of workers at work’ (ref. Framework Directive (89/391/EEC) article 1.1). In order to assess the extent to which the OSH acquis has been successful in doing so, this evaluation has examined a number of key determinants of the effectiveness of the 24 OSH Directives.

Up until this point, the evaluation of the OSH acquis has assessed the recent trends within the EU labour markets in order to establish the framework conditions for the overall implementation of the 24 OSH Directives (Chapter 3: Labour Market Overview). The rationale behind this assessment is that changes to the labour market influence the prevalence of specific hazards, risks and challenges faced by the workforce and which are thus sought remedied by means of the implementation of the OSH acquis.

Subsequently, in Chapter 4: Implementation in Member States, we have presented the conclusions drawn from mapping the national transpositions of the OSH Directives and assessing their practical implementation in the Member States. This extensive mapping exercise has revealed significant variations across MSs in the regulatory approaches to OSH implementation, including on factors such as enforcement, vulnerable groups and SMEs, all of which affect the conditions under which the OSH acquis operates within the MSs. One key purpose of the mapping exercise was to examine the levels of, and conditions for, OSH compliance in establishments seeing as compliance with the OSH legislation is a prerequisite for affecting establishments’ behaviour and thus achieving workplace impacts (such as the performance of a risk assessment upon changes to the workplace). As explained in the OSH acquis intervention logic, illustrated in full size in Figure 2-3 and revisited below, the rationale behind this assessment of national implementation and compliance is the assumption that workplace impacts result in improved OSH management and consequential risk reduction at workplaces. Ideally, this chain of events ultimately impacts the safety and health of workers, measurable through reduced incidences of occupational accidents, work-related diseases etc.
However, while implementation is pivotal, it is not the only prerequisite for safety and health impacts. In the previous chapter (Chapter 0), we assessed the relevance of the OSH acquis by examining whether the risks which Directives are intended to address are present in the current (and future) labour market and whether the specific content of the individual Directives is in fact relevant for addressing these risks. The assessment confirmed a high level of relevance across a large majority of Directives, and also identified other highly relevant risks that are insufficiently covered by means of the current design and content of the OSH acquis (e.g. some MSDs and psychosocial risks).

In the present Chapter, we thus build on the combined findings of the Labour Market Overview (Chapter 3), the mapping of national implementation (Chapter 4) and the assessment of relevance (Chapter 0) in order to assess the overall effectiveness of the OSH acquis in improving the safety and health of workers. We examine the effectiveness of the OSH Directives by addressing the following seven evaluation questions:

- **EQE1:** To what extent has the Directive influenced workers' safety and health, the activities of workers' representatives, and the behaviour of establishments?
- **EQE2:** What are the effects on the protection of workers' safety and health of the various derogations and transitional periods foreseen in several of the Directives concerned?
- **EQE3:** How and to what extent do the different Common Processes and Mechanisms that were mapped contribute to the effectiveness of the Directives?
- **EQE4:** To what extent do sanctions and other related enforcement activities contribute to the effectiveness of the Directives?
- **EQE5:** What benefits and costs arise for society and employers as a result of fulfilling the requirements of the Directives? (Addressed in Chapter 0)
- **EQE6:** To what extent do the Directives generate broader impacts (including side effects) in society and the economy? (Addressed in Chapter 0)
- **EQE7:** To what extent are the Directives achieving their aims and what factors have particularly contributed to the achievement of the objectives?

These evaluation questions on effectiveness (EQE) all cover different aspects that contribute to the realisation of the intervention logic. However, as evaluation questions 5 and 6 can be said to extend beyond the effectiveness of the OSH acquis, by touching upon broader impacts and on those costs and benefits that are associated with implementation of the OSH acquis (rather than...
contributing to its effectiveness), these evaluation questions have been merged and are addressed separately in a subsequent chapter (Chapter 0). Thus by examining evaluation questions 1-4 and 7, we incrementally expand on the assessment of the effectiveness of the OSH acquis, based on the national implementation of the Directives mapped in Chapter 4. As such, we do so by tracking the intervention logic and evaluating the impacts of the national implementations on establishment behaviour to identify whether the OSH acquis has resulted in workplace impacts which, in turn, have reduced occupational risks and ultimately improved the safety and health of workers.

6.2 Overall effect on occupational safety and health (EQE1)

6.2.1 Introduction and methodology

EQE1: To what extent has the Directive influenced workers’ safety and health, the activities of workers’ representatives, and the behaviour of establishments?

The first step in the assessment of effectiveness is to establish the extent to which the OSH acquis has in fact improved the safety and health of workers. In accordance with the intervention logic, this assessment is conducted in two stages. First, we examine the actual changes and improvements which have occurred at workplaces over the investigation period (2007-2012) in terms of the behaviour of establishments, exposures to potential hazards, and consequential injuries and ill-health. Secondly, we consider the extent to which these can be attributed to the implementation of the OSH Directives, both collectively and individually.

It should be mentioned that several national stakeholders have highlighted the absence of proper national monitoring instruments apart from official statistics on occupational accidents and diseases. During our data collection processes, we thus experienced a general request across Member States for more information, to enable the formation of a robust answer to the challenges associated with assessment of safety and health impacts. The issue of the inadequacies and limitations of existing data sets is mentioned on a number of occasions in the Directive-specific reports (including, in some cases, specific suggestions for improving this situation) and is returned to later in the report.

Analysis of the effectiveness of the OSH Directives utilises two main types of data. Objectively, trends in OSH data over time can be analysed to determine any changes that have occurred over the period in which the Directives have been in place. As noted elsewhere in this report, the challenge is then to explore the extent to which any changes (or lack of change) can be attributed to the effect of the Directives rather than the many other potential influences over the same period.

The reports on each of the individual Directives present findings specific to that Directive. In this section, we take an overview of overall trends in safety and health to gauge what effect (if any) the suite of OSH Directives might have had on these outcomes. This therefore complements the more specific analyses and, in doing so, by addressing the issue across all 24 Directives, removes one area of uncertainty (where those measures adopted in more than one Directive can affect the same outcome measure).

Broadly, the approach adopted has been to seek objective material relating to the effectiveness of the Directives. This has presented a number of serious challenges. The first, as alluded to above,
relates to the inadequacies of the data available, especially in terms of health consequences. Even for those Directives where specific consequences can be identified and related to the hazards addressed (such as the physical agents of vibration and noise), no collated data can be found. Even in the field of accidents and injuries, difficulties arise, especially due to national differences in definition. For example, even the definition of a work-related fatality differs between MSs.

Even where suitable (or even tenuously suitable) data exists, further challenges arise in respect of attribution – both in terms of establishing the causal agent and/or mechanism and in attributing changes to the effects of the provisions of the specific Directive.

As a result of these challenges, instead of subjective views being used as corroborative evidence to support objective material, such views often become the sole evidence-base. It is of course recognised that such a situation is unsatisfactory. Where possible, data from studies published in the peer-reviewed literature is used to support such findings. However, the issue of the paucity and inadequacy of available data, referred to in a number of the individual directive reports and elsewhere in this Main Report, is one of the significant obstacles to any objective assessment of the EU OSH acquis and one which needs to be addressed if future evaluations are to be effective.

6.2.2 Data on trends in health and safety at work in the period 2007-2012

Behaviour of establishments

The assessment of establishment behaviour is essentially an analysis of how the level of compliance has changed over time; and particularly from 2007 to 2012. The assessment is pivotal because it establishes a foundation from which to assess the safety and health developments and link potential improvements in the health and safety of workers to the implementation of the OSH acquis. Any improvement to the safety and health of workers which occur in line with the implementation of the OSH acquis (taking account of potential delays of effects) underpins the deduction that improvements occur as a direct result of the Directives’ implementation. In this subsection, we thus seek to establish the compliance trend from 2007 to 2012.

In doing so, this analysis builds on the mapping of compliance presented in mapping question 3 (Section 4.3). Introductory to that chapter, we identified the data that could contribute to an assessment of compliance, cf. Table 4-7 Variables and data sources available for a quantitative assessment of compliance. The Table contains relevant questions from the NIRs, ESENER variables and individual variables from other data sources (Eurobarometer 398 and European Working Conditions Surveys).

As concluded in the chapter on compliance, the National Implementation Reports proved unsuitable for comparison across MSs, even within the same year, due to a lack of homogeneity of responses, at least in part caused by a lack of centrally defined common reporting formats and requirements to content. The reports provided by each MS are, therefore, of such varying magnitude, scope and content that cross-MS comparison and quantifications cannot be made. Most reports simply do not hold any material pertaining to a quantification or assessment of national compliance. The NIRs therefore do not qualify as a data source for assessment of compliance trends. Likewise, the sporadic variables of the Eurobarometer are not available for more than one year, and therefore cannot inform on developments in establishment behaviour.
The one identified EWCS variable analysed in Figure 4-24 Quality of safety and health information, trend 1991-2010 shows that 89.6% of respondents in 2010 felt well or very well informed of safety and health risks related to their work. This assessment has remained fairly constant over the years despite e.g. EU enlargements and slight alterations to the wording of the survey question. In other words, according to this one variable, compliance has remained at the same level from 1991 to 2010, which theoretically would entail that – provided that all other influences remained constant – the incidence rates of accidents at work and work-related ill health would remain constant as well.

Finally, the most valuable data source for assessment of compliance is currently the ESENER surveys. A few variables of the ESENER (2009) were repeated in ESENER-2 (2013), thus providing a potential basis for trend analysis.

For example, in 2009, 67% of all surveyed establishments had an OSH employee representative. In comparison, according to ESENER-2, health and safety representation was the most frequently reported form of employee representation in 2013 used in 58% of establishments in the EU-28, compared to other forms of employee representation, such as trade unions. Likewise, the 2009 ESENER survey reveals that 88% of interviewed EU-27 enterprises perform risk assessments on a regular basis, while ESENER-2 indicates that 76% of establishments in the EU-28 carry out risk assessments regularly. However, *inter alia* due to the increased survey population in ESENER-2 (i.e. the inclusion of micro establishments with 5-9 employees), it is not possible to establish a trend based on this data.

Furthermore, where survey questions from 2009 were repeated in 2013, they were often slightly rephrased on account of an evaluation of the 2009 ESENER survey and extensive testing of ESENER-2. Table 6-1 lists the identified repeated survey questions and compares the wordings used in 2009 to 2013.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Survey question</th>
<th>EU-OSHA comments on the change from 2009 to 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESENER 2009, MM155</td>
<td>Is there a documented policy, established management system or action plan on health and safety in your establishment?</td>
<td>The use of the word ‘policy’ was found to be problematic in the formulation of MM155 and so the question was re-phrased in Q155.</td>
</tr>
<tr>
<td>ESENER 2013, Q155</td>
<td>Is a document that explains responsibilities and procedures on health and safety available to the people working in the establishment?</td>
<td></td>
</tr>
<tr>
<td>ESENER 2009, MM154</td>
<td>Is the health of employees monitored through regular medical examinations?</td>
<td>Wording was changed to ensure that only regular health checks organised by the employer were measured, rather than those that the employee might undergo under other arrangements.</td>
</tr>
<tr>
<td>ESENER 2013, Q157</td>
<td>Does your establishment arrange regular medical examinations to monitor the health of employees?</td>
<td></td>
</tr>
<tr>
<td>ESENER 2009, MM152</td>
<td>Does your establishment routinely analyse the causes of sickness absence?</td>
<td>Question was changed to clarify the purpose of the sickness absence analysis.</td>
</tr>
<tr>
<td>ESENER</td>
<td>Are sickness absences routinely analysed with a view</td>
<td></td>
</tr>
<tr>
<td>2013, Q160</td>
<td>to improving the working conditions?</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>ESENER 2009, MM161 and ER207</td>
<td>Are workplaces in your establishment regularly checked for safety and health as part of a risk assessment or similar measure?</td>
<td></td>
</tr>
<tr>
<td>The phrase ‘or similar measure’ was deleted from the question and follow-up questions added to explore these other measures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESENER 2013, Q250</td>
<td>Does your establishment regularly carry out workplace risk assessments?</td>
<td></td>
</tr>
<tr>
<td>ESENER 2009, MM162</td>
<td>Are these risk assessments or workplace checks mostly conducted by your own staff or are they normally contracted to external service providers?</td>
<td></td>
</tr>
<tr>
<td>Similar wording – no obstructions caused by changes to the survey question.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESENER 2013, Q251</td>
<td>Are workplace risk assessments mainly conducted by internal staff or are they contracted to external service providers?</td>
<td></td>
</tr>
</tbody>
</table>

Source: ESENER (2009), ESENER-2 (2013), EU-OSHA, COWI evaluation team

As illustrated in Table 6-1, only variable MM162/Q251 retains a wording which does not obstruct comparison, yet this question does not touch on the level of compliance, but rather on the manner in which compliance is achieved. This data shows that the share of risk assessments being performed by internal staff increases along with the size of the establishment and this correlation is confirmed in the ESENER-2 data (EU-OSHA, 2015). For the remaining variables, questions were rephrased in order to establish the best possible baseline for future trend analyses from 2013 onwards. While this allows for more accurate trend analyses in the future, the changes are made at the expense of an accurate 2009 and 2013 comparison.

Furthermore, ESENER-2 was directed at the person who knows most about OSH at the workplace, whereas ESENER-1 was directed at the manager responsible for coordinating OSH (and in a subset to the employee representative). This has an effect, not only in terms of the respondent’s perspective, but also in terms of the sample. Analysis of ESENER-1 showed that, particularly in certain countries, there was a refusal to participate in the survey because the desired respondent did not exist. By opening up the respondent profile, EU-OSHA aimed to reduce these refusals and achieve a more representative sample.

As a consequence, EU-OSHA recommends against using ESENER 2009 and ESENER-2 for trend analysis (cf. EU-OSHA, personal correspondence).

Although ESENER constitutes the most valuable source of data on compliance at present, it is essential to highlight that it is simply not designed to assess the level of compliance of enterprises with OSH legislation. Rather, ESENER aims to describe the approach taken by enterprises (in terms of measures and procedures) to health and safety management, the drivers and obstacles to action and how some of the key elements of OSH organisation at the enterprise level contribute and interact. It also allows getting an impression about awareness levels on legislative requirements and on key issues such as demographic change, stress or musculoskeletal disorders, and the actions implemented to address them at the enterprise level.

In sum, very little data exist that allow for an assessment of the development of the behaviour of establishments. We therefore proceed to assessing the trends in exposure to health-related risks without a fundamental knowledge of whether establishments are complying with the OSH *acquis* to
an increasing extent, whether micro and small establishments are in a process of closing the compliance gap compared to larger establishments, etc.

**Trends in exposure to health-related risks at work 2007-2012**

The recently published LFS AHM 2013 data allows some comparisons to be made of changes in the proportion of persons reporting exposure to risk factors that can adversely affect their physical health from most of the EU-27. Not all factors were covered in both the 2013 and the earlier 2007 surveys, and data are not available from all of the EU-27 (as a result, a global EU-27 figure is not available at the current time). In terms of health risk factors, data was available for exposures to ‘chemicals, dusts, fumes, smoke or gases’, ‘noise or vibration’ and ‘difficult work postures, work movements’. These are shown in Figure 6-1 to Figure 6-3.

**Figure 6-1** Persons (%) reporting exposure to risk factors that can adversely affect physical health: Chemicals, dusts, fumes, smoke or gases

![Graph showing exposure to health-related risks at work 2007-2012](image)

**Source:** Eurostat 2015, LFS AHM 2013: Persons reporting exposure to risk factors that can adversely affect physical health by sex, age and factor (hsw_exp4)

**Note:** Data shown for those MSs for which values were available from both the 2007 and 2013 surveys
Figure 6-2  Persons (%) reporting exposure to risk factors that can adversely affect physical health: Noise or vibration

Source: Eurostat 2015, LFS AHM 2013: Persons reporting exposure to risk factors that can adversely affect physical health by sex, age and factor (hsw_exp4)

Note: Data shown for those MSs for which values were available from both the 2007 and 2013 surveys

Figure 6-3  Persons (%) reporting exposure to risk factors that can adversely affect physical health: Difficult work postures, work movements

Source: Eurostat 2015, LFS AHM 2013: Persons reporting exposure to risk factors that can adversely affect physical health by sex, age and factor (hsw_exp4)
Note: Data shown for those MSs for which values were available from both the 2007 and 2013 surveys.

The data in Figure 6-1 shows that, in the majority of MSs (21/25), there has been a reduction across the time period (and very small increases in two of the others), with fewer respondents reporting exposure to chemicals, dusts, fumes, smoke or gases.

One unfortunate aspect of the data in Figure 6-2 is that the question combines two physical agents which are the subject of different directives. Nevertheless, the data again shows that, in the majority of MSs (22/25) there has been a reduction in reported exposure across the time period (and one other where the reported percentage was unchanged), with fewer respondents reporting exposure to noise or vibration.

Unlike the previous two figures, Figure 6-3 shows a different picture, with an increase in the proportion of respondents in ten MSs reporting exposure to difficult work postures and movements and a decrease in 15. In both cases, some of the changes are very small, whilst others show a relatively dramatic change (e.g. a doubling or halving of exposure).

Trends in accidents at work 2007-2012

Figure 6-4 and Figure 6-5, drawn from Eurostat ESAW statistics, show the overall trend in the EU from 2008 to 2012 in the incidence rates for both fatal and non-fatal accidents. These show a clear overall picture, namely that the incidence of occupational accidents in both the EU-15 and the larger EU-27 has fallen for both fatal (Figure 6-4) and non-fatal accidents (Figure 6-5) across the whole analysis period, although both show a small increase for 2010 before the decline continues in 2011. The trends for both fatal and non-fatal accidents for the EU-15 reflects a continuation of that from earlier years (1998 to 2007) as shown in ESAW data for that period.

Figure 6-4  Total fatal accidents, 2008 – 2012 for the EU-15 and EU-27 (Eurostat (ESAW) 2015)

Source: Eurostat 2015, (hsw_n2_02)

Note: Fatal accidents at work (standardised incidence rate). The incidence rate of fatal accidents at work is the number of persons with fatal accidents at work per 100,000 persons in employment.
This overall trend can be seen against views of overall trends in accidents in each MS as reported by Scoreboard 2009 (101). The OSH strategy evaluation report (102) summarised the findings in a table, reproduced in part below as Table 6-2. This shows the reported trends for the whole ten-year period (2000-2009), together with a subdivision into two, three-year trends, 2007-2009 for the latter part of the ten years and 2009-2011 for the period subsequent to the ten year period.

This table shows that, taking both a three-year and ten-year view, most MSs considered occupational accidents to be declining although, from the overall figures, there are some indications of a slight reversal of that trend in the two 3-year trend reports. However, it appears that this is an artefact of variations in those MSs which report estimates in the different ranges, as only one MS shows an actual trend reversal between the two three year estimates. According to the data on the trend 2009-2011, in 12 of the Member States, the three-year trend in the rate of occupational accidents is downward, in one it is unchanged, and in three Member States, the variation is not significant. In only four cases is the trend reported to be upward.

Overall, these estimates thus give a fairly strong indication that the incidence rate of accidents at work is considered to have been decreasing over the evaluation period of 2007-2012, although it is not a stable decreasing trend. This appears to reflect the overall objective statistics shown above.

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Table 6-2  Trend in rate of occupational accidents. The 10-year trend = 2000-2009, the 3-year trend = 2007-2009, and the 3-year trend 2009-2011. (Scoreboard 2009, reported in strategy evaluation)

<table>
<thead>
<tr>
<th>Member State</th>
<th>The 10-year trend 2000-2009</th>
<th>The 3-year trend 2007-2009</th>
<th>The 3-year trend 2009-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>↓</td>
<td>...</td>
<td>↓</td>
</tr>
<tr>
<td>Belgium</td>
<td>↓</td>
<td>⇔</td>
<td>↓</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Cyprus</td>
<td>↓</td>
<td>↓</td>
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<tr>
<td>Czech Republic</td>
<td>↓</td>
<td></td>
<td>↓</td>
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<tr>
<td>Denmark</td>
<td>↓</td>
<td>⇔</td>
<td>↓</td>
</tr>
<tr>
<td>Estonia</td>
<td>↑</td>
<td>...</td>
<td>↑</td>
</tr>
<tr>
<td>Finland</td>
<td>...</td>
<td>↑</td>
<td>↑</td>
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<tr>
<td>France</td>
<td>↓</td>
<td>↑</td>
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<tr>
<td>Germany</td>
<td>↓</td>
<td>↓</td>
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<tr>
<td>Greece</td>
<td>↓</td>
<td>...</td>
<td>-</td>
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<tr>
<td>Hungary</td>
<td>↓</td>
<td>...</td>
<td>-</td>
</tr>
<tr>
<td>Ireland</td>
<td>⇔</td>
<td>⇔</td>
<td>↑</td>
</tr>
<tr>
<td>Italy</td>
<td>↓</td>
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<tr>
<td>Latvia</td>
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<tr>
<td>Lithuania</td>
<td>...</td>
<td>↓</td>
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<tr>
<td>Luxembourg</td>
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<td>Malta</td>
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<tr>
<td>Netherlands</td>
<td>↓</td>
<td>⇔</td>
<td>↓</td>
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<tr>
<td>Poland</td>
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<td>Portugal</td>
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<td>Romania</td>
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<tr>
<td>Slovak Republic</td>
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<td>-</td>
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<td>Slovenia</td>
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<tr>
<td>Spain</td>
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<tr>
<td>Sweden</td>
<td>↓</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>↓</td>
<td>↑</td>
<td>...</td>
</tr>
</tbody>
</table>

**Summary**

- Increasing: 1 3 5
- Decreasing: 21 15 12
- Stable: 1 4 1
- No sign. trend: 4 5 3
- No info. avail: 0 0 0
- No answer: 0 0 7
- n/a: 0 0 0

Symbols: ‘↑’ Increasing, ‘↓’ Decreasing, ‘⇔’ Stable, No significant trend, ‘?’ No information available, ‘-’ No answer given, n/a Not applicable. Source: Scoreboard 2009.

Figure 6-6 and Figure 6-7 show changes in the incidence of fatal (Figure 6-6) and non-fatal (Figure 6-7) occupational accidents from 2008 to 2012 by industrial sector. In principle, all groups or sectors should be covered by national legislation or other statutory arrangements that require cases of accidents at work to be notified to the authorities, or to a private or public insurance body in accordance with the law. However, not all data are compiled for statistical purposes. The coverage of groups varies from one Member State to another. In addition, self-employed and family
members, as well as Fishing, Mining and Public sectors are not covered for some MSs. For this reason, Eurostat disseminates statistics by a subset of NACE sectors, so-called as ‘13 common branches’. This breakdown is used in presenting these statistics.

For fatal accidents (Figure 6-6) there would seem to have been a reduction in incidence across the whole period in almost all sectors, with the exception of some of those with very small incidences, where figures can be distorted by a single accident. However, there are marked fluctuations on a year-by-year basis in each of the four sectors with the highest incidences. Care should therefore be taken over interpreting this as a clear trend, although it does at least seem to be indicative of one (except possibly for ‘agriculture, forestry and fishing’ where the very high 2008 figure makes the overall trend difficult to discern).

In respect of non-fatal accidents (Figure 6-7) there would seem to be a similar pattern with a downward trend apparent in all sectors, with the exception of ‘agriculture, forestry and fishing’, where the results are again harder to interpret but there would, if anything, appear to be an upward trend. In some sectors, the change appears to develop from year to year whilst, in others, trends in intervening years are less distinct.

Figure 6-6  Incidence of fatal occupational accidents by industrial sector EU-27, 2008-2012

Source: Eurostat (ESAW) 2015, standardised incidence rates, (hsw_n2_02)
Taking a longer historic view, according to a European Commission report, this downward trend would appear to reflect an earlier similar trend across the smaller EU-15. The report indicates that the downward trend in incidence rates accelerated in the year 2000, with incidence rates for non-fatal accidents falling by 5.9% from 1995 to 2000, against 22.9% from 2000 to 2005. The report also indicates that the strongest reductions in incidence rates concerning non-fatal accidents were observed for the sectors of ‘Transport, storage and communication’ (-36.2%) and ‘Construction’ (-33.2%) (European Commission, 2009).

Returning to the ESAW statistics, Figure 6-8 (fatal) and Figure 6-9 (non-fatal) show this breakdown of number of accidents per number of employees in company. The data for the smaller sizes of company show a marked and consistent fall in the number of both fatal and non-fatal accidents across the period 2008-2012. Although a similar trend is apparent for the larger sizes (250-499 and 500+) this is far less marked. Incidence data are not available for this statistic and so any changes in the number of employees in the sector over time will distort these figures from year to year. However, SBS statistics (103) from 2010-2012 do not suggest any systematic change in employment within size classes that would account for these trends within size groups giving some support for the contention that this is a genuine effect and not an artefact.

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(103) Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2) [sbs_sc_sca_r2]
**Figure 6-8** Number of fatal occupational accidents by number of employees in company EU-27, 2008-2012

Source: Eurostat, ESAW, (hsw_n2_05).
Note: Total number of reported fatal accidents. Data for 2010 has low reliability as reported by Eurostat. Observations removed with zero reported as size of enterprise.

**Figure 6-9** Number of non-fatal occupational accidents by number of employees in company EU-27, 2008-2012
Source: Eurostat, ESAW, (hsw_n2_05)
Note: Total number of accidents at work resulting in more than 3 days of absence. Data for 2010 has low reliability as reported by Eurostat. Observations with zero reported as size of enterprise have been removed.

Care should be taken in making comparisons across employee size groups, because of the large differences in the numbers of employees within each category and other factors, such as variations in the distribution of companies of different sizes across different sectors with differing OSH hazard profiles. As an illustration of this, Figure 6-10 shows SBS statistics which illustrate how, in some sectors such as mines and quarries, large companies predominate, whilst in others (most notably repair: computer, personal and household goods) small enterprises form the majority.

Figure 6-10 Relative proportions of companies of differing sizes in the main industrial sectors (2011) SBS statistics

Trends in work-related diseases and health problems 2007-2012

There is relatively little data collated at the EU level regarding trends in the occupational health of the EU workforce, either at a general level or in relation to specific diseases and disorders of relevance to the provisions of the Directives. For example, even where there are clearly established occupational diseases, such as noise-induced hearing loss or hand-arm vibration syndrome, for which there are specific Directives, no data is available to indicate the extent of such problems and whether or not the problems have declined in the more than 20 years following the introduction of the relevant Directives.

At a very general level, the LFS AHM 2013 database presents limited data regarding self-reported work-related health problems which permit comparisons between the two surveys in 2007 and 2013. Great care must be taken in using these data. Eurostat include warnings of the low reliability of the data, especially in respect of some specific health problems, and also indicate variations in definitions between the two surveys. The definition of a work-related health problem included in the Metadata text is reproduced here in its entirety:
A work-related health problem covers all diseases, disabilities and other physical or mental health problems, apart from accidental injuries, suffered by the person during the last 12 months, and caused or made worse by the work. Thus, health problems have a longer, chronic cause whilst an accident is more the result of a very short term or instant (physical) harm. This is a broad concept that covers much more than the recognised occupational diseases.

The concept of the work-related health problem is based on a self-assessment of survey respondents in regard with their work-related state of health;

The ad hoc module includes complaints irrespective of their severity;

It includes not only health problems caused by work but also those made worse by work;

It includes health problems where the onset was more than one year prior to the survey, in the case that the respondent had suffered from the health problem during the last 12 months.

Persons who did not work in the 12 months before the reference week of the survey may still suffer from a health problem caused by work more than 12 months ago, and their cases have to be included as a work related health problem.

This text clearly shows that it is very broadly defined and should not therefore be regarded as synonymous with a work-related disease. Nevertheless, it is of value that a common definition is given for all MSs and that reporting is therefore less likely to be influenced by national differences in formal definitions of occupational diseases.

Because of the uncertainties and reliability issues of this text, sub-analyses have not been attempted. Therefore, Figure 6-11 shows the percentages of persons reporting any work-related health problem, 2007 and 2013, broken down by MS. It is clear from this figure that there are some strange values, most notably that for France from 2007. However, the database does not flag this as an uncertain or anomalous value.

Examination of the pairs of data for the individual MSs (comparisons between MSs are probably inadvisable) shows that in most MSs (17/25) there has been a reduction in the percentage of respondents reporting work-related health problems between 2007 and 2013, with one further MS showing no change (the remaining 7 showing an increase). In some instances, the changes were very small and should be regarded with some caution. Nevertheless, there is a clear overall change.
Figure 6-11 Percentages of persons reporting a work-related health problem, 2007 and 2013, broken down by MS

Source: Eurostat, LFS AHM 2013, Persons reporting a work-related health problem by sex, age and size of enterprise [hsw_pb9]

Note: Only those MSs for which data were provided for both years are presented.

Subjective opinions of impact of work on health – data from large surveys

As a further insight into worker occupational health, there have been a number of large-scale surveys within the EU, which have addressed aspects of working conditions. Such surveys are subject to significant potential limitations, particularly where they require recall over a period of time, as a retrospective, subjective assessment of trends may give rise to recall errors etc. (i.e. personal bias, faulty recollection of actual events, differently applied definitions of what constitutes improvement/deterioration etc.). Nevertheless, they do provide one approach to supplement (or sometimes stand in lieu of) more objective indices.

One such survey, covering 26,571 EU-28 residents (i.e. not necessarily workers) above the age of 14, commissioned by the European Commission (104), asked respondents to assess their own working conditions and to provide their opinion on whether working conditions in their MS had improved, stayed the same or deteriorated over the last five years. The survey shows that just over half of the respondents (53 %) report that working conditions in their country are currently good (2014). Not surprisingly, results vary between MSs, ranging from 16 % in Greece to 87 % in Denmark.

However, the survey also shows that, despite considering them ‘good’, a majority of Europeans (57 %) consider working conditions in their country to have deteriorated in the last 5 years (i.e. 2009 –

(104) European Commission (2014), Flash Eurobarometer 398, Working conditions
2014), 27 % say they have stayed the same while only 12 % think they have improved. Estonia (42 %), Malta (40 %), Lithuania (27 %), Latvia and Hungary (both 25 %) are the only countries where at least one quarter of respondents think working conditions in their country have improved over the last five years (European Commission, 2014).

A second major survey, the EWCS, provides a possibly more reliable index of chronological changes as the survey data is drawn from cross-sectional surveys spanning a number of years (data currently available from 1991-2010) rather than adopting a retrospective view. Survey data presents the responses to a question ‘Does your work affect your health, or not?’ This question is somewhat ambiguous as a number of published studies have suggested that being in work is good for your health, and yet the natural tendency on reading this question is to assume that any effect is negative. This ambiguity was recognised for the most recent survey (2010), with a supplementary question added to determine whether this effect was mainly positive or mainly negative. To maintain consistency the responses to the initial question have been presented. It is interesting to note however that, in the last survey, approximately 25 % of respondents who considered work to have affected their health considered this effect to have been positive.

One cause for caution over this data is that the number of countries in which the survey has been conducted has steadily increased. Thus, in 1991, the survey covered the 12 EU member states of the time (EU12); in 1995, 15 states (EU15). In 2000 the survey covered the EU15 countries plus Norway, and in 2001 the survey extension covered 10 new EU member states plus Bulgaria, Romania and Turkey. In 2005 the survey included 31 countries including the 27 current EU member states (EU27) plus Croatia, Turkey, Switzerland and Norway. In 2010 it covered the 27 EU Member States and seven further European countries.

The responses to this question, from 1995-2010, illustrated in Figure 6-12, show an overall decline across the years in the proportion of the workforce who report that their health is affected by their work.
Figure 6-12 Positive responses to the question ‘Does your work affect your health?’

Source: EWCS, N=107898.

Note: Question asked: Does your work affect your health? Percentages of respondents who answered yes are shown. The data for 1995 only cover EU12.

Figure 6-13 shows the overall answers to a second question, as to whether workers consider their health or safety to be at risk because of their work. This shows a slightly different picture in that, unlike the apparent recent decline in positive responses to the earlier question, approximately 30% of workers questioned at each survey consider their health or safety to be at risk because of their work, a value that is therefore relatively stable from 1991 to 2010.
Cross-analysing the responses to these questions with those to others concerning demographic aspects allows a more detailed analysis of the nature of the changes. Other questions permit the analysis of responses in respect of the number of people in their workplace (not necessarily equivalent to company size for companies with multiple worksites); workers in the public and private sector; workers in different industrial sectors; and workers of different ages and gender.

Figure 6-14 shows the analysis by company size. It shows that those working in larger companies are consistently most likely to report that they consider their health and safety to be at risk. It should be noted that this analysis reflects surveys over a shorter time span, only reflecting the last three years of the data above. The general trend, apparent across all size categories bar one, is for a reduction in the percentage of workers who consider their health and safety to be at risk at work suggesting an improvement in overall perception of health and safety at work over that time (2000/2001-2010). Although there were differences between specific sizes of company, there was no consistent pattern to suggest any particular tendency for those in SMEs to be more likely to consider their health and safety to be at risk than those employed in larger organisations.
Figure 6-14 Change over time in the percentage of workers who consider their health and safety is at risk, according to the number of people working in the workplace

![Bar chart showing the percentage of workers who consider their health and safety at risk by the number of people working in the workplace from 2000 to 2010.](image)


Note: Question asked: Do you think your health or safety is at risk because of your work? Percentages of respondents who answered yes are shown.

Figure 6-15 shows the same analysis by company size for the question as to whether workers considered that their work affected their health. This shows a similar pattern with a marked fall in each group from the first survey shown (2000/2001) to the two more recent surveys and, in all but the largest group, a further fall from 2005 to 2010. One point to note in this and subsequent figures relating to this question is that the main EWCS database contains a note ‘Slightly different questions in all waves logically confusing wording’. However, examination of the on-line version shows the same wording for each survey, so the origin of this statement is not known.

Again, there is no general pattern to suggest those in SMEs considering their health more affected by their work, with a relatively small spread in range of changes.
Figure 6-15 Change over time in the percentage of workers who consider their work affects their health, according to the number of people working in the workplace

![Bar chart showing the percentage of workers who consider their work affects their health, differentiated by the number of people working in the workplace.](image)


Note: Question asked: Does your work affect your health? Percentages of respondents who answered yes are shown. Slightly different questions in all waves logically confusing wording.

Next, Figure 6-16 shows an analysis to differentiate those who report that they work in the public sector from those reportedly working in the private sector. Again, the first analysis is of those who consider their health and safety to be at risk. The figure shows very little difference between the two groups and virtually no change from 2001/2001 to 2005, but then a reduction in both groups for 2010. The larger reduction for those working in the private sector means that, in this last survey, those working in the public sector were (slightly) more likely to consider their health and safety to be at risk.

Turning to Figure 6-17, this shows a similar analysis regarding whether those who work in the public and private sectors consider their work to affect their health. Again, there is a marked fall but, on this occasion, it is between the 2000/2001 and 2005 surveys with a slight further decline from 2005 to 2010. As with the previous question, the most recent survey shows a slightly higher proportion of workers in the public sector responding that they did think that their work affected their health.
Figure 6-16 Change over time in the percentage of workers in the public and private sector who consider their health and safety is at risk


Note: Question asked: Do you think your health or safety is at risk because of your work? Percentages of respondents who answered yes are shown. Based on EU-25 and answers have been adjusted to fit relative size of workforce in each member state.

Figure 6-17 Change over time in the percentage of workers in the public and private sector who consider their work affects their health


Note: Question asked: Does your work affect your health? Percentages of respondents who answered yes are shown. Based on EU-25 and answers have been weighted to fit relative size of workforce in each member state. Slightly different questions in all waves logically confusing wording.
Figure 6-18 shows an analysis of responses to the first question on health and safety being at risk broken down by clusters of industrial sectors. The breakdown, provided within the database, was carried out to provide comparability across surveys. It appears to reflect a logical grouping with those engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals in one cluster, industrial and service sectors clustered and public sector providing the fourth main group. Each group shows a reduction from 2000/2001 to 2010 in the proportion of workers in that sector who report that they consider their health and safety to be at risk. It also shows an apparent ranking of groups, which appears to remain consistent over time, with those in the agriculture, hunting, forestry and fishing group most likely to consider their health and safety to be at risk and those in the services sector least likely.

Figure 6-18 Change over time in the percentage of workers who consider their health and safety is at risk, according to the industrial sector they work in.

Note: Question asked: Do you think your safety is at risk because of your work? Percentages of respondents who answered yes are shown. Based on EU-25 and answers have been weighted to fit relative size of workforce in each member state.

Turning to Figure 6-19, this shows an analysis of workers who consider their work affects their health, according to the industrial sector they work in. Again, each group shows a reduction from 2000/2001 to 2010 in the proportion of workers in that sector who report that they consider their work to affect their health. Responses also reflect a similar pattern between sectors with those in the agriculture, hunting, forestry and fishing group most likely to consider their work to affect their health and those in the services sector least likely.
**Figure 6-19** Change over time in the percentage of workers who consider their work affects their health, according to the industrial sector they work in

![Bar chart showing change over time in the percentage of workers who consider their work affects their health, according to the industrial sector they work in](image)


Note: Question asked: Does your work affect your health? Percentages of respondents who answered yes are shown. Based on EU-25 and answers have been weighted to fit relative size of workforce in each member state. Slightly different questions in all waves logically confusing wording.

The next two figures analyse the responses according to the age of the respondents. Figure 6-20, shows an analysis of workers who consider their health and safety to be at risk due to their work. It shows a decline in most age groups from 2000/2001 to 2010, although the pattern of the change across the three surveys is not consistent. The least consistent is the youngest age group (below 18), who show an increase from 2000/2001 to 2005, and then a very marked fall to 2010. In general terms, the figures show a flat 'U' curve relationship with those in the middle years of employment being most likely to consider their health and safety at risk. It is not possible to say whether this reflects a genuine change in the nature of the work performed by these people or a complex interplay between the different (and sometimes conflicting) factors which influence personal perception of risk.

In contrast, the responses to the second question on work affecting health, shown in Figure 6-21, show a much more consistent pattern of responses across the surveys, with consistently much higher percentages of positive responses in the first survey followed by (generally) a more modest reduction from 2005 to 2010. Again, a far smaller proportion of workers in the youngest category feel that their work affects their health than in any of the other age groups. However, it cannot be told whether this reflects a genuine variation due to the nature of the work these young people do, the fact that the influence of age-related health issues such as MSDs has yet to emerge, or some other factor.
Figure 6-20 Change over time in the percentage of workers who consider their health and safety is at risk, according to their age

![Bar chart showing change over time in the percentage of workers considering their health and safety at risk, by age group.](image)


Note: Question asked: Do you think your safety is at risk because of your work? Percentages of respondents who answered yes are shown.

Figure 6-21 Change over time in the percentage of workers who consider their work affects their health, according to their age

![Bar chart showing change over time in the percentage of workers considering their work affects their health, by age group.](image)


Note: Question asked: does your work affect your health? Percentages of respondents who answered yes are shown. Slightly different questions in all waves logically confusing wording.

The final two figures examine the responses to the same two questions, subdivided according to the gender of the respondents. Figure 6-22, shows an analysis by gender of workers who consider their health and safety to be at risk due to their work, whilst Figure 6-23 shows the same split for
the second question on work affecting health. Both show a consistent decline across the three surveys and, in each survey, they show males to be more likely to consider their health and safety to be at risk. However, though there are differences, the gender division on the perception of work affecting health is much less marked.

Figure 6-22 Change over time in the percentage of workers who consider their health and safety is at risk, according to their gender

Note: Question asked: Do you think your safety is at risk because of your work? Percentages of respondents who answered yes are shown.
6.2.3 Conclusions and key findings on overall impact of OSH acquis

It is clear from the data presented in the preceding section that there has been a clear pattern of a reduction in virtually all indices relating to workplace OSH, including exposures to hazards; fatal and non-fatal accidents; perceived influences of (mainly) adverse effects of work on health; and perceptions that worker health and safety is being placed at risk by work. Although there are some occasional variations, these changes appear to be relatively robust, with the changes remaining in analyses by sector (both different industries and public/private), size of enterprise, and, in terms of perceptions, age and gender. Although there is some occasional uncertainty or lack of clarity, there are no clear indications at any point of a negative trend in any index.

6.3 Effectiveness and attribution to OSH Directives

6.3.1 Trends and impacts

The individual Directives often cover more than one disease, especially those directives that are of general nature or target specific types of workers (and all diseases are in principle covered by the Framework Directive). Therefore, it is important to keep in mind that changes in the prevalence and incidence are not only driven by changes in OSH. Moreover, disentangling the effect of one Directive from another is even more challenging, as the Directives sometimes overlap or supplement each other, and because legislation in other fields might also play a role (see more on this topic in the chapter on coherence). Thus, it is very difficult, if not impossible, to quantify the effect of one single Directive. That said, in this section we will summarize the results from the effectiveness evaluations from the Directive Reports. We will do so by taking a closer look at the
different safety and health outcomes and how they relate to the different Directives. Although several Directives potentially affect more than one disease/accident, we have grouped them according to their main focus.

Overall impact – objective evidence
Assessing the effectiveness of each of the Directives has been challenging. The serious absence in many instances of any collated data on safety or health outcomes means that any material used has often been fragmented, sometimes only from a small number of MSs. Even the data that is available presents further challenges in terms of attribution. Many other changes have occurred over the life of the Directives in general, and over the evaluation period in particular, and it has seldom been possible to identify specific changes in objective outcome measures which can then be reliably attributed to the effects of the provisions of any one Directive (much less to the effect of individual provisions).

Some very limited evidence has been identified in respect of intermediate impacts (such as compliance with requirements for risk assessments). These are all presented in the relevant Directive reports. In general, however, they demonstrate only limited quantitative evidence of the implementation of specific Directive provisions within the MSs, in some cases supplemented by expert estimates. It is noticeable that, even where the NIR template asked specific questions regarding the implementation of specific provisions, MSs were usually unable to provide data. On rare occasions (usually where a detailed formal appraisal has been commissioned – such as that for the DSE Directive), some quantitative material can be found, but such instances are the exception.

In broad terms, the best that can usually be said from the objective data available, presented above, is that beneficial changes in OSH metrics (injuries, reported health problems, etc.) are chronologically correlated with the Directives – i.e. they have occurred whilst the Directives have been in force. Thus, as presented above, there has been a general downward trend in the incidence of fatal and non-fatal accidents across the investigation period, and these trends are reflected across all industrial sectors and sizes of establishment.

One important point from this is the implication that any influences on workplace safety, of which the OSH legislative regime is part, appears to have had a consistent impact in all sizes of company, despite concerns that smaller companies have difficulties in complying with health and safety provisions and are considered less likely to comply with legal requirements.

To make any more definitive statements, it would be necessary to view the introduction of the Directives as an intervention study, with data collected on the ‘before’ situation (and ideally some form of control comparison group established to offset other, non-OSH changes). With Directives introduced over a period of over 25 years, and often introduced in MSs at differing times within that period, depending on their accession to the Union, there are clear challenges in establishing the ‘before’ situation. At best, therefore, it can (usually) be stated that, where changes in OSH metrics have occurred over the life (or part of the life) of a Directive they could be attributable to the effect of that Directive. However, the reverse does not apply. Therefore, where an expected change has not occurred, it cannot usually be presented as evidence for a lack of effectiveness of the Directive given that, in many MSs, many of the Directives had already been in place for a number of years prior to the evaluation period, meaning that the main impact had already occurred.
A further complexity lies in the challenge of exploring the level at which the ‘intervention’ has not succeeded. Put simply (and somewhat simplistically), has a Directive ‘failed’ because of flaws in its provisions, or because of inadequate or insufficient implementation of those provisions (with all the nuances that entails)? This issue has been addressed in the report on the Manual Handling Directive with respect to ‘other’ MSDs, but the question can be put in a wider OSH context. However, at the present time, though the questions can be asked, data are not available to provide adequate answers.

Overall impact – subjective evidence

As noted previously, as many MSs had national provisions containing similar or identical requirements to those of the EU Directives prior to their transposition, we cannot establish with any certainty to what extent workplace impacts would have occurred without adoption of the EU-level OSH acquis (105).

Inevitably therefore, given the paucity of objective data which can be directly related to the OSH Directives (either generally or specifically), a greater reliance has been placed on subjective opinion, relying on stakeholders at the EU and MS levels to provide some insight into the extent to which the provisions of Directives have been implemented and their effect on the safety and health of workers.

As a start point, during the present evaluation, we asked national stakeholders from EU Member States to provide an assessment of the extent to which each Directive has fulfilled its overall objectives. Figure 6-24 below shows the aggregated average, for each stakeholder group, of the objective achievement scores provided for each Directive. The averages cover scores from 71 stakeholder groups from 21 different MSs. The average score of 3.5 indicates that, according to national stakeholders, the OSH acquis has fulfilled its objectives to an extent slightly above the mid-point of 3.0. The stakeholder groups representing authorities are slightly more positive in regard to objective fulfilment than the other stakeholder groups. They find that the OSH acquis has fulfilled its objectives to a higher extent (3.8) compared to the average scores of 3.4 for the three other stakeholder groups.

(105) In theory, it might have been possible to compare workplace impacts stemming from the OSH acquis in MSs with similar previous provisions to MSs without previous provisions. However, as impacts often occur with some latency and as data is very rarely available for more than a few years, several years apart, this does not allow for specific changes to be detected within minor time spans, wherefore this cannot be done with any scientific certainty in practice.
Figure 6-24 Extent to which the OSH acquis has fulfilled its objectives, according to national stakeholders

Source: Member State interviews, (n=71 stakeholder groups from 21 MSs, no data from AT, FR, HU, IE, MA and SE)

Note: The graph depicts the average score provided by national stakeholders according to stakeholder groups when answering the question ‘Has transposed legislation fulfilled its objective?’, rated on a scale of 1 (to a very low extent) to 5 (to a very high extent).

In comparison to the relatively positive assessments of the effect of the OSH acquis on the safety and health of workers made by national stakeholders analysed above, Figure 6-25 below shows the aggregated score from 1-5 of 25 EU stakeholder organisations across all 24 Directives. As shown, respondents on average found that the OSH acquis has improved the safety and health of workers to a just above medium extent (3.45), almost exactly the same average to the MS stakeholders. In this instance, employers were generally the most positive, with an average score of 3.7, while the workers themselves were the least positive, with an average score of 3.2. Authorities and other OSH experts on average scored the Directives’ effect on the safety and health of workers 3.5 and 3.4, respectively.
Figure 6-25 EU stakeholder views on the effect on safety and health of workers caused by the Directives

![Graph showing stakeholder views on the effect of Directives on safety and health of workers]

Source: EU stakeholder interviews, n=25

Note: The graph depicts the average score provided by EU stakeholder (in total and according to specific stakeholder groups), as answers to the question: 'To what extent has the Directives influenced the health and safety of workers?', rated on a scale of 1 to 5, where 1 indicates 'to a very low extent', and 5 indicates 'to a very high extent'.

Generally, therefore, these ratings present the impression from both MSs and the EU that the Directives collectively appear to have been reasonably successful in achieving their intended aims, benefiting the health and safety of workers as a result. Naturally opinions vary between different stakeholders and stakeholder groups, although at times opinions were remarkably consistent.

In a further analysis of subjective opinions, Figure 6-26 and Figure 6-27 show a representation of the broad impact that national and EU stakeholders interviewed considered the OSH acquis to have had on the safety and health of workers. In this case, their opinions were classified as to whether they considered the overall effect to have been neutral (i.e. no real effect) or to have had a positive or significantly positive effect. None considered the effect to have been negative.

Figure 6-26 shows the average across all stakeholder groups. The figure, derived from the views of 85 stakeholder groups from 19 different Member States, shows that 60 (71 %) considered the OSH acquis to have had a positive influence on the overall safety and health of workers. In comparison, 22 stakeholder groups (26 %) from 7 different Member States found the OSH acquis to have had a significant influence, while only 3 stakeholder groups (4 %) from Czech Republic and the Netherlands, respectively, found that the OSH acquis has not had any effect at all.

During interviews, a number of national stakeholders made some interesting observations that should be highlighted. For instance, it was mentioned, somewhat paradoxically, that a large increase in the number of observed occupational diseases in France over the last 30 years

\[106\] One stakeholder group covers all interviewed stakeholder organisations within a given Member State, e.g. the stakeholder group 'workers'.
coincided with what were seen as significant improvements in working conditions. It was suggested that this increase of occupational disease may, at least in part, be attributed to an overall greater awareness of occupational diseases. Similarly, in Finland the level of sickness absence is considered to have remained stable since the transposition of the earliest OSH Directives, while occupational accidents have decreased. In the UK, it is a commonly held view (not necessarily with any formal supporting evidence) that increasing awareness of specific OSH issues amongst workers results initially in increased levels of reporting, and therefore an apparent increase in incidence.

Figure 6-26 National Stakeholders’ views on the effect on safety and health of workers caused by national legislation transposing the OSH acquis

Source: Member State interviews.
Note: The graph depicts the relative distribution of answers, across all Member States and stakeholders, across all Directives, to the question: ‘How has the health and safety of workers been affected by the national legislation transposing the Directive(s) e.g. absence from work (sickness absence, disability pensioning), accidents and quality of life?’

Figure 6-27 shows a breakdown of these responses between different stakeholder groups. The results show a high degree of consistency between the assessments of the various stakeholder groups, i.e. national authorities, employer and worker representatives, as well as other safety and health experts on the overall effect of the OSH acquis on the safety and health of workers.

These relatively positive answers and trends are of course encouraging, although arguably the attributes of the OSH acquis as an awareness-raising mechanism may have sufficed to result in a ‘positive’ impact on the safety and health of workers, even if very few provisions had been effectively implemented. We therefore suggest some degree of cautiousness in the interpretation of these figures, though they may point in a positive direction. However, it is noted that the apparent tendency of a move towards a better workplace safety and health situation is supported by the recent Flash Eurobarometer 398 survey on working conditions (European Commission, 2014), in which 85% of respondents express satisfaction with workplace safety and health.
One prerequisite for the Directives to have been effective in MSs in improving OSH is that provisions under the Framework Directive and the 23 individual Directives have to be implemented and complied with. Compliance, addressed in detail in Section 4.3, is therefore essential if the measures provided for in the Directives are to have any impact. As is apparent from Section 4.3, and the reports on the individual directives, data on compliance is patchy and incomplete – a description which could also be applied to compliance itself. The limited evidence which is available suggests wide variations in the extent of reported compliance, with further variations between different provisions. There are also some indications, referred to in some of the individual Directive reports, of concerns over the quality of compliance, meaning that the level of effective compliance is less than the compliance level reported.

In this regard, it is relevant to refer back to the ESENER findings, presented in Section 4.3.2, showing that as many as 91% of those establishments that have identified a need for action during a risk assessment actually follow-up and take that necessary action. This of course speaks of neither the quality of the conducted risk assessment (e.g. number of unidentified hazards), nor the preventive quality of the follow-up action taken. However, according to ESENER data, 88% of establishments in the EU-27 conduct risk assessments on a regular basis and 91% of these have taken follow-up action in response to identified risks, which effectively implies that 80% of all establishments have taken some measure to improve working conditions (notwithstanding the number of remaining, unidentified risks.).

Overall impact – an alternative approach

One source providing an alternative insight into the possible relationship between the implementation of the OSH Directives and workplace health and safety outcomes is ESENER-2 data on the reasons reported by establishments as to why they address safety and health issues.
Examining the major motivations behind managing safety and health may shed some light on the level of impetus that is given by the OSH *acquis* to the achievement of workplace impacts, and thus help to establish a link between EU-level legislation and enterprise-level workplace impacts.

Figure 6-28 presents the proportion of managers who have identified each of a number of major reasons for addressing health and safety. It shows that, in the EU-28, 85% of respondents report that fulfilling legal obligations to be a major reason for addressing health and safety. ESENER-2 data also shows a positive correlation with establishment size (EU-OSHA, 2015). By country, the proportion who report that fulfilling legal obligations is their main reason for addressing safety and health ranges from 68% of surveyed establishments in Denmark to 94% in Portugal. In contrast, in some countries, particularly those that joined the European Union in 2004, and in some of the Candidate countries, the most frequently reported driver to address health and safety is maintaining the organisation’s reputation (EU-OSHA, 2015).

While this clearly does not unequivocally link workplace impacts to the OSH *acquis*, it does indicate that the existence of legal obligations, i.e. national provisions, including enforcement by labour inspectorates (cf. Section 6.7 Effect of enforcement), is the most important reason for addressing OSH at enterprise-level. We may conclude from this finding that the introduction of the OSH *acquis* and its incorporation into national legislation has the potential through this to have a direct impact on workplaces in a way that guidance without supporting legislation (for example) might not.

The second most commonly identified reason for addressing safety and health in this ESENER survey is meeting expectations of employees (and employee representatives). Although the connection is perhaps more tenuous, this can be seen as having a connection to workers being better informed and aware of OSH issues. In turn, this corroborates the conclusions drawn from the information gathered from national and EU stakeholder interviews, namely that improved information for workers is one of the main workplace impacts achieved through the transposition of the OSH *acquis*, (although significant variations in this may be witnessed between Directives). Furthermore, although increased awareness on safety issues across the EU is not simply a result of the OSH *acquis* alone, stakeholders agree that the OSH *acquis* and its accompanying actions, including related campaigns from social partners, have contributed to this increased awareness and thus to workplace impacts. The fact that worker and employee representative expectations are

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(107) An identical question exists in ESENER 2009 but, due to the different survey population as well as differences in the wordings of the response options, assessment of possible changes in establishment motivation cannot be made.
mentioned as a highly motivating factor in establishments also supports the conclusion of Section 4.3 (MQ3) that employee representation has a significant influence on compliance with the OSH acquis.

It is widely recognised amongst OSH professionals that OSH implementation is more usually effective where it is underpinned by an OSH policy, approved at senior management level and supported by a management system/plan for its implementation, rather than where OSH activities are implemented in a piecemeal manner. As also established in MQ3, 70 % of establishments with 10 to 19 employees have a documented OSH policy compared to 90 % of large establishments with 500 or more employees. Although it must be acknowledged that the existence of a documented policy on OSH does not necessarily guarantee a reduction of work-related risks it is clear that it does make such a reduction more likely. As a measure of this, Figure 6-29 , again drawn from ESENER data, shows the extent to which interviewed managers perceive their OSH management system to have had a large impact, some impact or practically no impact on health and safety in their establishments.

Figure 6-29 Managers’ perceived impact of documented policy, established management system or action plan on health and safety in establishments

As illustrated, as many as 96 % of managers in large establishments find that their OSH management policy has had some positive impact on safety and health and 53 % of these perceive this impact to have been large. At the other end of the scale, 80 % of managers in establishments with 10 to 19 employees perceive their OSH management plan to have had a positive impact, although only 28 % of them believe it to be a large one. These smaller expectations of safety and health impacts reported by SMEs are in line with the findings on SME compliance, which indicate that SMEs more often than larger establishments believe that they are in compliance with the OSH acquis (even when they are not) and that no major hazards exist at the workplace (even when they do) (ref. section 4.3.2., and Fairman and Yapp, 2005).
It is clearly positive that a significant proportion of managers perceive their OSH management policy to have had some positive impact on safety and health in the establishment, and it does increase the likelihood that the OSH acquis has been effective in achieving workplace impacts at establishment level, particularly in larger establishments. However, in terms of assessing the actual level of effectiveness of the OSH acquis, this data is inherently limited, as it allows us to develop assumptions on effectiveness rather than formulate evidence-based conclusions. One caveat on this analysis is that it is only focussed on those managers who report having a policy and system and should not be interpreted as implying that all managers take these views.

In sum, evidence on the effectiveness of the OSH acquis at improving establishment behaviour from 2007-2012 and thus achieving impacts at workplace-level is sparse and to a limited extent self-contradictory. On the one hand, a considerable level of compliance seems to be maintained and to increase with the size of the establishment, just as a significant proportion of managers perceive their OSH management policy to have had some positive impact on safety and health in the establishment.

Overall opinion on Directives

As noted above, and discussed elsewhere in this report, there are many non-OSH factors which can impact on OSH indices such as accidents and ill-health. For example, as described in more detail in the labour market overview in Chapter 3, for many years we have witnessed a structural change, with a shift away from primary sectors such as agriculture, forestry, fishing, and mining, and away from secondary sectors such as the manufacturing sectors, and so towards the tertiary service sectors. In this century alone, 10 % of EU-27 manufacturing jobs have been lost between 2000 and 2013, amounting to almost four million jobs, and 19 %, or more than two million jobs, have been lost in agriculture, forestry, and fishing. Simultaneously however, there has been a positive contribution to the overall employment growth from many new jobs within human health and social work, and within the professional and scientific sectors, each with a net increase in the number of jobs of over six million during the 13 years. Other service sectors with job growth of over three million are wholesale and retail sales, administrative and support service, and education. Although incidence statistics compensate for changes in employment levels, they cannot reflect changes in the overall balance of hazards to which the workforce as a whole are exposed. Hence, the shift in the economic structure from manufacturing to services, i.e. from sectors with high incidence rates to sectors with lower incidence rates, will in itself have contributed to an overall decrease in the incidence of occupational accidents without any material changes in the OSH environment.

Another factor is the significant improvement in workplace OSH that stems from technological developments. Specific examples may include improved trawling equipment on fishing vessels, and the introduction of new underground mining technologies, which are mainly focussed on improving productivity or performance and yet contribute to the improved safety and health of workers. In some cases, such as machinery that produces less noise or vibration, such developments might have been introduced with the primary aim of improving OSH (this is certainly the case with some powered hand tools and hand-arm vibration). Yet, to claim that such technological improvements necessarily stem from the implementation of the OSH acquis would clearly be a disingenuous simplification. Improvements in machine design, aimed for example, at improving the efficient path of components through the machine, might coincidentally result in its quieter operation. However, although technological improvements are often a result of market demands and a prospect of improved efficiency and effectiveness, it could be suggested that an increased awareness of
occupational safety and health issues is likely to accelerate the process of change and the pace with which technologically improved equipment reaches workplaces.

The fact that workplace impacts cannot be assessed over time has the primary consequence that apparent improvements in the safety and health of workers cannot be unequivocally linked to those workplace impacts and consequently to the national transpositions induced by the *acquis* itself. This effectively means that a causal relationship between identified OSH-related improvements and the Directives cannot be established. As a result, it is not possible to quantify to what extent safety and health trends emanate from national transpositions of OSH legislation and to what extent changes are caused by external factors such as improved technological equipment, structural changes to the labour force etc. However, the fact that managers consider the existence of legal obligations, i.e. national provisions, as the most important reason for addressing OSH at enterprise-level clearly means that the Directives do have a considerable potential impact on establishments' behaviour in relation to OSH management.

(EU-OSHA, 2014d) examines the implications on OSH of occupations within wind energy, green building and the electricity sector. It is concluded that the emergence of green jobs may involve a decentralisation of processes and workplaces into smaller, dispersed units and microenterprises, possibly with lower OSH awareness, less OSH culture and fewer resources to be spent on OSH initiatives. If there is poor management of health and safety within smaller enterprises then this trend might give some cause for concern.

In summary, we can say with reasonable certainty that, over the period covered by the data presented above (which itself is not consistent due to the availability of different sources) the workers of the EU (mainly, but not always, the EU-27) have become safer and healthier (and feel safer and healthier).

As has been noted in many places throughout this report, attribution of any changes in OSH statistics to the implementation of the 24 OSH Directives, even as a package (much less individual Directives or specific provisions – see below), is uncertain. There have been many potential influences, both OSH and non-OSH, which can have had a bearing on this outcome. The certainty lies in the trends summarised above, subject of course to all the accompanying caveats about the quality of the data. Nonetheless, we may with some fairness assume – based on the analysis of the level of compliance in Chapter 4 and the continued relevance established in Chapter 5 – that a proportion of these improved safety standards stem from the implementation of the OSH *acquis* and consequent improved OSH awareness, especially in larger enterprises.

However, with details reported in various Directive reports, our analysis on the subject of occupational diseases shows less positive trends. New and emerging concerns such as the increasing cases of sick leave due to stress (which is not currently covered to any significant extent by the OSH *acquis*) or musculoskeletal disorders (where OSH coverage is incomplete); concerns about the risks of nanomaterials; and the increasing knowledge showcasing risks associated with an increasing number of chemical and biological agents; all indicate that the present major health and safety concerns are likely to remain.

An almost identical conclusion was reached in the European Commission (2013b) impact assessment of the 2007-2012 OSH Strategy. However, the evaluation takes reservations for a limited amount of data on occupational diseases. While we agree that additional EU indicators are needed for a structured monitoring of occupational diseases, it is our assessment that the conclusion (that considerably less positive results have been achieved on bringing down work-
related illnesses in comparison to bringing down the number of occupational accidents) is valid, as similar opinions have been continuously expressed during national and EU stakeholder interviews.

One key issue addressed by the various data sources is that of the attention paid to OSH in smaller businesses. The suggestion from stakeholder interviews and the NIRs is that the overall compliance with CPMs and Directive requirements is generally lower in SMEs (grouped as SMEs although, in reality, experience suggests that the real differences are perhaps more at the lower end of the range, amongst what might be regarded as micro-businesses) compared to larger establishments. The impression given is that, although there are exceptions, SMEs are considered to find it harder to comply (or simply don’t comply due to a lack of awareness, knowledge, or finance). However, although this would seem to be the overall impression from interviewing stakeholders, an interesting divergence emerges in examining responses from governments within the NIRs. Here, many have responded either positively that SMEs find compliance (or whatever) no harder; or more neutrally that they have no evidence of any such problems. In contrast however, some MSs present a clear view that SMEs do find it harder to comply, offering a variety of reasons for them doing so.

It is clear however that the global data relating to health and safety, both objective records of safety (accidents) and objective health reports do not support this view. Direct comparisons cannot be made of accidents in companies of different sizes because incidence figures are not available. However, as noted in Chapter 3, over 90 % of establishments are classified as SMEs, with approximately 66 % of the workforce. As an approximate guide, for the most recent data, SMEs (<250) accounted for approximately 65 % of the accidents which, with 66 % of the workforce would appear to be in proportion. Certainly, it is not suggestive of a major imbalance. The absolute numbers suggest that trends in SMEs mirror the trends in larger enterprises and do not suggest significant differences in safety due to company size.

Similar considerations apply to the data from the European Working Conditions survey, which shows that the proportion of workers who consider that their health is at risk due to their work does not vary significantly between different sizes of establishments. The same can be said about the proportion of workers who consider that their work affects their health.

All in all, the limited data on accidents and risk exposure indicates that workers in SMEs – despite their perceived lower levels of compliance with OSH requirements – are not experiencing adverse OSH effects compared to workers in large establishments. However, it should be noted that several sources of data indicate that underreporting of accidents is a known issue for SMEs. Also, there are published studies which demonstrate that SMEs in some specific sectors (e.g. construction) are experiencing higher incidences of occupational accidents suggesting that care should be taken in making sweeping generalisations.
6.4 Key safety and health impact findings and conclusions by Directive

Specific safety and health findings

Safety – Accidents and injuries

Although in-depth studies of safety would include measures such as unsafe behaviour, nearmisses, or non-lost-time injuries, the data available for analysis is restricted to collated statistics on accidents resulting either in four or more days absence from work (non-fatal accidents) or fatalities.

Safety hazards, potentially leading to accidental injury, are primarily covered in seven individual Directives, (the Construction Directive, the ATEX Directive, the Drilling Directive, The Mines and Quarries Directive, the Fishing vessels Directive, The Medical treatment on board vessels Directive and the Work Equipment Directive), plus the Framework Directive, which addresses all risks to health and safety in a general manner. The individual Directives typically focus on specific high-risk sectors, although they are usually focussed on addressing specific issues regarded as presenting unique challenges to that sector rather than providing a broad perspective on all health and safety hazards within the sector (which are often addressed by other hazard-specific directives). As shown earlier, decreasing incidences of both fatal and non-fatal accidents have been observed across Europe. These trends might be related to the provisions in the Framework Directive, but also to some of the individual Directives, but trends might also differ between sectors. Data on fatal and non-fatal accidents are available from ESAW and EWCS. A major challenge in the Directive-specific analyses is that data is not always available for the specific sector covered by the Directive. For instance, it is not possible to separate accidents in mines and quarries from drilling accidents. Moreover, accident data is not available for workers at sea (as seafaring is part of the whole transportation sector).

Data from EU-15 (for which a sufficiently long time series is available) in the period 1998-2012 shows a decrease in the number of non-fatal and fatal occupational accidents within the construction sector. This could be considered to indicate a positive impact of the Constructive Directive on both fatal and non-fatal accidents although, as discussed earlier, attribution of any changes (or absence of change) presents considerable problems.

The Drilling Directive is specific to the mineral extraction industry and contains provisions to prevent accidents related to drilling activities including fire, explosions and blowouts of wells. The data shows that no major accidents have occurred since the adoption of the Drilling Directive. It is not possible to firmly establish the extent to which this is on account of the Directive, or whether it would have happened regardless. Moreover, no decrease has been observed in occupational accidents.

The Mines and Quarries Directive contains provisions to prevent accidents in this sector, which is considered a high-risk sector. The data shows that there has been a general decline in the rate of fatal and non-fatal accidents from 2008-2012 within the mines and queries sector (except for an increase in fatal accidents in 2011). It is not possible to infer that these trends are caused by the Directive, as the statistics not only include fatal and non-fatal accidents in mines and quarries, but also accidents from drilling (covered by the Drilling Directive). However, these improvements could, at least partially, be attributed to the Directive.
The Work Equipment Directive contains provisions related to acute risks related to the use of work equipment (especially falls from heights), as well as more long term consequences of such accidents (including MSDs) and long-term exposure to workplace equipment not designed in accordance with good ergonomics principles. No EU-level data is available on accidents related to the use of work equipment. National data from Denmark and the UK shows no clear trend, although data from the UK showed a decline in accidents from contact with moving machinery, falls from heights and struck by a moving vehicle. This gives a slight indication of changes relating to issues addressed by the Directive but once again, attribution of these as being an effect of the Directive is far from straightforward.

The ATEX Directive contains provisions to prevent injuries from thermal radiation, overpressure and exposure to smoke, fire and unintended releases. However, it is not possible to separate accidents related to ATEX. Thus, while fatal and non-fatal accidents have declined, it is not possible to determine to what extent the ATEX Directive have contributed to this development. Thus, no firm conclusion can be drawn based on the available statistical data.

The Fishing vessels Directive contains provisions to reduce injuries and accidents on board fishing vessels (like falling overboard, fires, colliding with items on the deck etc.). From the analysis of the incidence rates of fatal accidents in Denmark, Poland and the United Kingdom, respectively, it seems that the Fishing vessels Directive has had very limited safety and health impact, if any. The improvements that could be traced in Poland occurred irrespective of the transposition of the Fishing vessels Directive, while the improvements to the incidence rates for non-fatal accidents that occurred in Denmark were caused by a collected body of national legislation, which collectively contained requirements and specifications far beyond those of the Fishing vessels Directive. For instance, the collected Danish Regulation on working conditions on board fishing vessels applies to all fishing vessels with no delimitations to length and includes reporting requirements of accidents causing an absence of 1 day or more.

The Medical treatment on board vessels Directive includes provisions related to managing accidents and ill health (and not prevention of accidents). It is therefore unlikely that the Directive in itself have had a major impact on the incidence of accident, although the Directive could have contributed to lowering mortality and fatal accidents. However, the prevalence of fatal accidents has fallen among seafarers in the merchant fleet in several Member States, but trends in the fishing industry seem to be less positive. It should be noted that these trends are based on just a few Member States and that data at the European level is not available. While survival rates after accidents and serious illness might have improved, these trends might also be related to other factors and international conventions and agreements.

Health – MSDs
Data from the LFS survey for 2007, which marks the onset of the analysis period, clearly identifies musculoskeletal disorders (MSDs) as the main workplace health problem, at least in terms of self-report, with 54.2 % of respondents indicating ‘musculoskeletal disorders’ as their most serious work-related health problem.

The hazards associated with MSDs are covered by several Directives, primarily the Manual Handling Directive, the Display Screen Directive and the Vibration Directive. In the latter case, back pain is seen as a potential consequence of excess exposure to whole-body vibration, whilst excessive hand-arm exposure can lead to Hand-Arm Vibration Syndrome (HAVS) or, according to some authorities, Carpal Tunnel Syndrome (CTS). The Work Equipment Directive also includes
references to poor working postures from inadequate attention to ergonomics principles, which could give rise to posture-related MSDs, although this is not usually seen as a primary focus of this Directive.

The Manual Handling Directive contains provisions to prevent MSDs due to load handling (especially heavy loads). The principle impact of the DSE Directive is intended to be a reduction in workstation related injury or ill-health, with particular reference to musculoskeletal disorders (MSDs), (although mental stress and possible risks to eyesight are also addressed). As noted above, the Vibration Directive contains provisions to reduce MSDs resulting from exposure to vibration.

The analysis of the effectiveness of these directives are based on data from ESAW on back injuries and from the EWCS survey on self-reported back pain and sickness absence due to back pain. Whilst the ESAW database includes accidents resulting in back injury this provides no insight into the causal mechanisms involved. Many different injury mechanisms, not necessarily related to the hazards addressed by these Directives, can give rise to a back injury. Similarly, much back pain, particularly that associated with prolonged poor sitting postures, is of gradual onset and might not be regarded by all as an ‘accidental injury’.

Similar shortcomings apply to the EWCS data, in that it does not contain information on whether the reported pain arises due to exposure to manual handling, vibration or sitting at a display screen. Moreover, the questions posed in the EWCS surveys, unfortunately, differ between 2005 and 2010. While the 2010 data encompass any worker who has experienced back problems/muscle pains due to any cause, the 2005 data specifically asks for back problems caused by carrying out work at a workplace. In other words, some of the back problems registered in the 2010 survey are caused by activities carried out outside a workplace, e.g. by gardening at home. Even the 2005 data offers no guarantee. For example, it is widely recognised that disc prolapses occur as a consequence of a gradual process of degeneration of an intervertebral disc, not as a traumatic ‘injury’. Nevertheless, those suffering such pain are likely to attribute it to the action they were doing at (or just before) the time of onset of symptoms.

Different data sources show different patterns of outcomes. ESAW data on accidents due to back pain in the period 2008-2012, analysing data from the main industrial sectors where manual handling activities might be concentrated, shows a progressive fall across the period (with a slight rise in 2011). Most of the change took place across the two early years (2008-2009) with a more stable pattern in recent years. However, analysing the same data in regards to those sectors where DSE work is more likely (where back pain may result from prolonged sitting) shows a different picture, showing an increase across the whole period of analysis (2008-2012) with marked fluctuations from year to year.

In comparison, self-report data on backache from the EWCS shows a different picture, with little real trend from 1991 to 2010, but a marked upward ‘blip’ in 2005. Analysing the same data sources as they pertain to the Vibration Directive shows very similar results, largely due to the lack of specificity possible in the analysis.

Extending the analysis to other MSDs, ESAW data for accidents resulting in pain in the upper extremities, again analysed for the ‘DSE sectors’ shows a marked fall from 2008-2009 but a stable picture since that time whilst EWCS data for ‘work-related muscular pain pains in shoulders, neck and/or upper limbs’ show a clear rising trend from 1995 through 2000/2001 to 2005. No collated data sources are available to permit any analysis of the vibration-specific MSDs.
As noted above, although efforts have been made to focus the analysis on relevant sectors, it is not possible to determine to what extent these injuries and health problems are related to manual handling or DSE activities. Whilst the shortcomings in the data preclude a definitive conclusion, the available data does not indicate any significant improvements in these health indicators.

Thus, despite there being three Directives with a principal focus on MSDs, there is no reliable indication of a marked reduction in such problems, which remain a major cause of injury and health problems at work.

Health – Psychosocial problems
Returning to the data from the LFS survey (2007) the second main work-related health problem in terms of the proportion of the workforce reporting is ‘stress, anxiety and depression’. Although, as with MSDs, care should be taken over assuming attribution, it would seem likely that problems arising from psychosocial risk factors in the workplace would primarily manifest themselves in this category. Apart from the Framework Directive, and a reference to mental stress in the DSE Directive, there are no EU OSH Directives which can be regarded as having a potential impact on such hazards. With the possible exception of some of the provisions regarding software, none of the measures adopted through the DSE Directive would be expected to impact on the established psychosocial risk factors. With evidence that psychosocial problems are, if anything, increasing across the EU workforce, the absence of any significant legislative measures must be seen as a gap in the EU OSH acquis.

Health – skin diseases and respiratory diseases
The LFS survey data provides one viewpoint on priorities within the EU. However, other data sets often provide a different perspective. Although the source used is not given, the EU-OSHA website describes skin diseases as ‘the second most common work-related health problem in Europe’ (108). The report which this preamble introduces lists a large number of relevant EU legislation on cutaneous risks, including several from the OSH acquis: AOR Directive, Chemical Agents Directive (and subsequent Directives listing OELs for additional substances), Biological Agents; and the Use of PPE Directive.

Respiratory disease (occupational lung disease) covers many different diseases with a variety of causes. In the absence of overall collated statistics, key points from the European Lung Foundation provide an oversight into the scale and extent of the problem. Thus:

› In Europe, over 39,000 deaths have been estimated for the year 2000 as a result of work-related exposures to dusts and fumes;
› Up to 15 % of all asthma cases are linked to occupational factors;
› 15-20 % of COPD cases are linked to factors in the workplace.

Add to these the burden of established occupational diseases such as pneumoconiosis, silicosis and asbestosis and a picture emerges of a significant cluster of health issues. With the exception of the AOR Directive, the Directives listed above can also be regarded as having a bearing on respiratory diseases. To these can be added the Asbestos Directive, and possibly elements of the

Mines and Quarries and Construction Directives (although it must be said that the main focus of these two is on safety rather than health).

Artificial optical radiation can have adverse health effects ranging from minor problems, such as skin reddening, to more serious disease like cataracts and skin cancer. However, no suitable data sources were found, as the current EU databases and surveys do not provide classification appropriate for AOR. The absence of data does not necessarily imply the absence of a health problem, and the effects of exposure to AOR leading to certain diseases of the eye are especially well documented.

Data from EWCS shows an increase in workers experiencing skin problems and respiratory difficulties in the period from 1995-2005 among workers exposed to chemical agents at work. Thus, based on the available data, there is little substantive evidence to indicate that the Chemical Agents Directive has had a marked positive health impact.

The Biological Agents Directive contains provisions for reducing or eliminating exposure to infections from biological agents due to inhalation (breathing in aerosols or vapours), ingestion (through poor hygiene or eating and drinking) and skin penetration (for instance through sharp needles). These agents might cause allergies and asthma, toxic reactions or arthritis (possibly also cancers). Data from EWCS shows that workers exposed to infectious agents more often report that their health is negatively affected by work. Moreover, the increase in sickness absence is higher among the workers exposed to infectious agents. Finally, the data also indicates that workers exposed to infectious agents more often report skin problems, headaches, respiratory problems and injuries. However, the analyses does not allow causal inferences and no firm conclusions about the health effects of the Biological Agents Directive can be drawn.

The provisions of the Use of PPE Directive are intended to influence the effective use of PPE at work. As such, different forms of PPE could have a potential impact on any of the outcomes listed above. Thus, the lack of any meaningful impact can in part be attributed to this Directive, although the data do not permit the identification of circumstances should (or could) have been worn and was not worn.

The main positive measures in terms of the risks from asbestos have been the ban on its use in specified processes and on activities which expose workers to asbestos fibres during the extraction of asbestos or the manufacture and processing of asbestos (or added asbestos) products (Article 5). Combined with other prohibitions, these will have contributed to the significant reduction in asbestos usage across the EU-27. Health impacts are less easily demonstrated because of the long latency of asbestos-related diseases. Because of historical exposures, asbestos-related deaths (for example from pleural cancer) are predicted to continue to increase in a number of MSs for some years to come before any downturn can be expected. It is thus not possible at this stage to draw any clear inferences regarding the impact of the Asbestos Directive on the health of workers.
Health - Cancers

As noted above, other data sets on occupational health often provide a different perspective on priorities. The workers organisation ETUI suggests that ‘cancer is now the main cause of “death by working conditions” in Europe’ (109).

Work-related cancers are primarily covered in the Carcinogens or Mutagens Directive (and in the Asbestos Directive referred to above). Cancers are characterized by their severity (although there is a wide variation in ‘survivability’ of different forms of cancer) and long-latency for many. Data on cancer incidences was retrieved from different European cancers registries. Some MSs publish these data regularly, but not on a European level. Moreover, because of the long lag time between exposure and diagnosis of disease, it is unlikely that we have yet seen the peak in the incidence of long-latency cancers.

The Carcinogens or Mutagens Directive contains provisions to prevent a wide range of work related cancers. The most relevant work-related cancers are mesothelioma, sinonasal, lung and bladder cancer, non-melanoma skin cancer in men and mesothelioma, sinonasal, lung, breast and nasopharyngeal cancers in women. Because of the long latency period for developing cancer, there is no quantitative data on the impact of the Directive. However, exposure data on the ten most dangerous agents in 1990-3, 1999 and 2010 indicates only a slight decrease, suggesting little or no change.

As has been referred to extensively, the long latency between exposure to carcinogens or mutagens in the workplace and the emergence of disease makes it virtually impossible to establish the effectiveness of the provisions of the Carcinogens or Mutagens Directive. Even were that not the case, there would be considerable difficulty from existing data sources to attribute this to deficiencies in the provisions of the Directive (warranting amendment) or insufficiencies or inadequacies in their implementation within MSs.

The Asbestos Directive contains provisions to prevent cancers related to exposure to asbestos, primarily mesothelioma and asbestosis (not a cancer), but also lung cancers and intestinal cancers. As noted above, due to the long latency period for developing cancer related to asbestos, it is not possible to drawn firm conclusions on the impact of the Directive for the next 15-20 years.

The AOR Directive and the Biological Agents Directive could also be relevant for preventing occupational cancers. However, cancers are not the primary focus in these Directives which are referred to elsewhere.

Health – physical agents

A cluster of OSH Directives share a common thread in that they all address the risks, primarily to health, due to workplace exposure to physical agents. They are also all framed around a common template and therefore, to some extent, share the measures adopted.

In addition to the Vibration and AOR Directives referred to previously, Directives address the risks from exposure to Noise and EMFs.

(109) https://www.etui.org/Topics/Health-Safety/Occupational-cancers
The Noise Directive contains provisions to prevent noise-induced hearing problems. The data from EWCS on self-reported sickness absence and hearing problems does not indicate a decrease in hearing problems among workers exposed to noise, as could be expected as a result of the implementation of the Directive. Again, while there can be many potentially conflicting factors contributing to this, there is no clear indication from the data that the Directive has had any effect in terms of reducing exposure and in the incidence of noise-induced hearing damage.

The EMF Directive has not been evaluated for effectiveness as it has yet to be widely implemented in its latest (2013) version.

Safety and Health – Vulnerable groups

Vulnerable groups of workers have become a particular focus of OSH concerns over recent years and the safety and health risks for several such groups are addressed by OSH Directives, specifically those relating to Pregnant/breastfeeding workers, Young People, and Temporary workers. Others include migrant workers and, especially Older Workers who are increasingly recognised as an OSH concern due to the age demographics of the EU workforce.

The Pregnant/breastfeeding workers Directive differs from most other directives as it concerns the health and safety of the worker, but also that of their offspring. The Directive does not target potential risk factors associated with fertility, but adverse pregnancy outcomes. These outcomes are followed in several EU-databases that include a wide range of MS.

The data shows that from 2004 – 2008 the rate of foetal, neonatal and infant mortality decreased, the percentage of low birth weight babies remained stable and preterm deliveries rose. From 1999 to 2010 the rate of congenital anomalies has remained the same overall. Finally, childhood cancers have been increasing from 1970 to 1999, and more recent data suggests that trends have continued to increase after 1999. Thus, the data does not provide evidence that adverse pregnancy outcomes have declined in general. The analysis does not provide substantial evidence that the Directive has had a considerable effect on the health and safety of pregnant/breastfeeding women and their children in terms of pregnancy outcomes. However, the Directive might have improved well-being and reduced sickness absence among the mothers. It should be noted that this evaluation does not extend to any non-OSH provisions of this Directive.

The Young People Directive targets young workers, because they are considered to be particularly vulnerable. Data on temporal changes in workplace hazards and injuries show a general decline. Although young people appear to be protected from more severe hazards, as demonstrated by a lower rate of fatal accidents among young people, they seem to be more at risk for non-fatal accidents. It is, however, not possible to ascertain if this is due to greater susceptibility or because of the nature of their work. Data relating to exposures is unclear, with some indications that young people are less exposed than their older colleagues to most (but not all) potential hazards. Again, it should be noted that this evaluation does not extend to any non-OSH provisions of this Directive, although it can be assumed that the banning of children from employment will have enhanced their health and safety as well as any developmental or other considerations.

The objective of the Temporary workers Directive is to ensure that temporary workers are afforded the same level of health and safety protection as other workers. The Directive does not specify any particularly diseases but implies that temporary workers are more likely to be involved in accidents, because of inadequate training and information. There is no EU-level accident data among temporary workers, but the scientific literature shows that temporary workers are more often
involved in accidents. However, this increased risk is especially related to lower job experience. Because temporary workers are overrepresented in the construction sector, the increased risk of accidents could also be related to the specific characteristics of that sector. Data from EWCS from 2010 shows that temporary workers are more likely to report higher job insecurity, but less likely to report negative consequences of their work on their health and have less sickness absence. A lower level of sickness absence could be the consequence of the higher job insecurity. Thus, there is no clear evidence that temporary workers are more likely to be involved in accidents related to their employment contract (or more negative consequences of their work). This could be an indication of a positive result of the Directive but the available data does not allow us to make such inferences. Thus no firm conclusion can be drawn regarding accidents or ill-health in this group.

Safety and health – general provisions

Two remaining Directives, the OSH signs Directive and the Workplace Directive, make general provisions which potentially influence both safety and health in the workplace.

Most of the provisions in the Workplace Directive are related to the physical construction and layout/arrangement of workplaces, which are often addressed in other pieces of legislation. It is therefore impossible to establish a credible causality between the Directive and health and safety impacts. Furthermore, many of the provisions in the Directive relate more to well-being or welfare rather than health and safety. Thus, no conclusions can be drawn regarding the effectiveness of this Directive in terms of impacts on safety and health.

Lastly, with regard to OSH signs, a lack of quantitative data precludes drawing any firm conclusions about the effect of this Directive on the safety and health of workers. However, based on the tentative effect in workplaces and the assumption that OSH signs do affect the behaviour of workers, there are grounds to believe that the OSH signs Directive has led to some degree of positive safety and health impacts. However, it is not possible to either quantify or even estimate this impact.

6.5 Effect of derogations and transitional periods (EQE2)

EQE2: What are the effects on the protection of workers’ safety and health of the various derogations and transitional periods foreseen in several of the Directives concerned?

In this section we take a look at the possible effects of derogations and transitional periods for the individual directives and at the acquis as a whole.

6.5.1 Derogations

The impact of derogations on safety and health effects depends on the content of the derogations as well as the actual application of derogation in the MSs.

As reported in Section 4.2 (MQ2), eight Directives contain derogations. Table 6-3 below shows the extent to which the derogations have been applied by the MSs and shows the conclusion reached within the respective Directive Reports on the effect of derogations on the safety and health of workers.
### Table 6.3  Directive-specific conclusions on the effect of derogations

<table>
<thead>
<tr>
<th>Directive</th>
<th>Article</th>
<th>Directive Report conclusion on the effect of the application of the Derogation</th>
<th>MS applying derogation</th>
</tr>
</thead>
<tbody>
<tr>
<td>89/656/EEC (Use of PPE)</td>
<td>Art. 4(6), second indent</td>
<td>Very few MSs made use of any derogations. No data are available to indicate any effects.</td>
<td>DK, RO [2]</td>
</tr>
<tr>
<td>92/57/EEC (construction)</td>
<td>Art. 3(2)</td>
<td>The derogations from the requirements to draw up a safety and health plan are assessed to have had an impact on the effectiveness of the Construction Directive.</td>
<td>BE, CZ, DK, EE, ES, IT, LU, MT, SI [9]</td>
</tr>
<tr>
<td>92/58/EEC (OSH signs)</td>
<td>Art. 6(2)</td>
<td>Of those stakeholders who were interviewed as part of the evaluation, neither the EU nor national stakeholders highlighted issues specifically caused by the permitted derogations for the OSH signs Directive. This finding together with the fact that only a minority of MSs have applied the derogations, that the derogations concern minor aspects of the Directive and that all MSs reflect the conditions in the Directive, lead us to the conclusion that the derogations are not likely to have had an adverse impact on the effectiveness of the Directive.</td>
<td>BE, BG, DE, DK, LT, LU, SI, UK [8]</td>
</tr>
<tr>
<td>92/85/EEC (pregnant/breastfeeding workers)</td>
<td>Art. 11(4)</td>
<td>The Pregnant/breastfeeding workers Directive contains an option to make entitlement pay conditional in accordance with eligibility requirements under national legislation. Thus, this derogation concerns basic employment rights and is therefore not likely to have a direct influence on the health and safety of workers.</td>
<td>BG, DE, EE, LT, LU, LV, SK [7]</td>
</tr>
<tr>
<td>94/33/EC (young people)</td>
<td>Art. 5(3), 7(3), 8(5), 9(2), 10(3), 10(4), 13</td>
<td>There are a total of seven derogations available within the Young People Directive which have been implemented by varying numbers of MSs. However, there are no data available regarding any effects that these provisions might have had on the protection of workers’ safety and health.</td>
<td>AT, BE, CY, CZ, DE, DK, EE, EL, ES, FR, FI, IT, LU, LV, NL, PL, PT, SE, SI, SK, UK [21][110]</td>
</tr>
<tr>
<td>98/24/EC (chemical agents)</td>
<td>Art. 9(2)</td>
<td>No data are available which permit the assessment of the effect of any of the derogations applied within any MS.</td>
<td>BE, BG, CZ, DE, EE, IE, EL, ES, IT, LV, LT, LU, MT, PL, PT, SI, SK, FI, SE, UK [20]</td>
</tr>
<tr>
<td>2002/44/EC</td>
<td>Art. 10(1)</td>
<td>There has been widespread application of derogations and transitional periods among the Member States. It appears from the interviews with EU and national stakeholders that these provisions to a large extent are</td>
<td>BE, BG, DK, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, SE, SK, UK [17]</td>
</tr>
</tbody>
</table>

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[110] Not all derogations were applied in all MSs. Please refer to MQ2, Section 4.2.1 for further detail.
252 EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>Directive</th>
<th>Article(s)</th>
<th>Considered to have been necessary for the implementation of the Directive in practice.</th>
<th>Stakeholders interviewed had strong view on this issue.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>Art. 10(2)</td>
<td>-</td>
<td>AT, BE, BG, DK, EL, ES, FI, IE, IT, LT, LU, LV, MT, PT, SI, UK [16]</td>
</tr>
<tr>
<td>Noise</td>
<td>Art. 11(1) and 11(2)</td>
<td>No data are available which permit the assessment of the effect of any of the derogations applied within any MS.</td>
<td>BE, BG, DK, EE, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, PL, RO, SI, UK [19]</td>
</tr>
</tbody>
</table>

Source: CSRs and Directive-specific evaluation reports

As the table shows, not all MSs have applied the allowed derogations. For instance, only two MSs make use of derogations applying to the Use of PPE Directive, and under half of the MSs make use of derogations relating to the OSH signs Directive, the Construction Directive and the Pregnant/breastfeeding worker Directive. Thus, at least hypothetically, these derogations are not likely to have had a major impact on safety and health effects. The most widely used derogations concern the prohibition of certain chemical agents (Chemical Agents Directive), the prohibition of employment of young people where such derogations are indispensable for their vocational training and the prohibition of night work for young people in specific areas of activity (Young Worker Directive) and the requirement to provide properly fitting individual hearing protectors in exceptional situations (Noise Directive).

As illustrated, the Directive-specific evaluation reports generally conclude that no data is available to assess the impact of applying derogations (Use of PPE, Young People, Noise and Chemical Agents Directives) or that although no data is available qualitative data indicates that the application of derogations are not likely to have had an impact on the safety and health of workers (OSH Signs, Pregnant/Breastfeeding workers, Vibration Directives). Only in the context of the Construction Directive, derogations are believed to have had an adverse impact on the safety and health of workers, although no quantification of this impact can be made.

The general opinion expressed in the national stakeholder interviews is that, generally, the use of derogations has not had any degree of measurable impact on the safety and health of workers. If anything, derogations seem to constitute necessary exemptions that permit establishments to maintain compliance with the nationally transposed Directives. However, there is no quantitative data available, which permits the assessment of the effect of any of the derogations applied within any Member State.

6.5.2 Transitional periods

As reported in Section 4.2 (MQ2), eight Directives contain provisions for transitional periods. Table 6-4 below shows the extent to which the transitional periods have been applied by the MSs and shows the conclusion reached within the respective Directive Reports on the effect of the transitional periods on the safety and health of workers.
Table 6-4  Directive-specific conclusions on the effect of transitional periods

<table>
<thead>
<tr>
<th>Directive</th>
<th>Conclusion on the effect of the application of the transitional period</th>
<th>MSs who applied transitional periods</th>
<th>MSs who respected transitional periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 92/91/EEC (drilling)</td>
<td>The data collected through interviews and review of national data and available reports does not suggest that the transitional period has had any major implications for the results achieved. Data on accidents and exposure to health risks is not sufficiently detailed to allow for an assessment as to whether the transitional period can be considered to have had an effect.</td>
<td>AT, BE, DK, EL, ES, FI, IT, LT, LU, NL [10]</td>
<td>BE, DK, EL, ES, FI, IT, LT, LU, NL [9]</td>
</tr>
<tr>
<td>Directive 92/104/EEC (mines and quarries)</td>
<td>No data are available which could inform an assessment of the impact of the application of the transitional periods within the relevant MSs.</td>
<td>BE, DK, EL, ES, LT, LU, NL, AT, FI [9]</td>
<td>BE, DK, EL, ES, LT, LU, NL, FI [8]</td>
</tr>
<tr>
<td>Directive 93/103/EEC (fishing vessels)</td>
<td>No time series data is available that allow for an estimation of the effect of transitional periods. The three MSs for which time series data is available (DK, PL and UK) have not made use of transitional periods. No national or EU stakeholders were able to clarify this issue nor make a qualitative national assessment of the subject. One interviewed EU stakeholder specifically stated that 'it is too long ago to say anything about it' as the transitional periods had 'long gone' (ref. EU stakeholder interview). Only three transitional periods ended later than 2002: PT in 2005, EE in 2007 and LT in 2009.</td>
<td>DE, EE, EL, ES, FI, IE, IT, LT, NL, PT, SL [11]</td>
<td>DE, EE, EL, ES, FI, IE, IT, LT, NL [9]</td>
</tr>
<tr>
<td>Directive 2002/44/EC (vibration)</td>
<td>There has been widespread application of derogations and transitional periods among the Member States. It seems from the interviews with EU and national stakeholders that these provisions to a large extent are considered to have been necessary for the implementation of the Vibration Directive in practice. Hence, from this viewpoint their effect must be considered to have been positive. However, it should be emphasised that none of the stakeholders interviewed had strong view on this issue.</td>
<td>All Member States but CZ, HU and SK [24]</td>
<td>All [24]</td>
</tr>
<tr>
<td>Directive 2003/10/EC (noise)</td>
<td>The data from interviews with the two main EU-level organisations representing workers (FIM) and employers (Pearle) in the music and entertainment industry indicates that the transitional period was required in order to develop EU guidance on the implementation of the Directive in the sector. Further, for those countries where a code of conduct was developed, it also seems from this interview data that the transitional period was sufficient. However, it does seem that a code of</td>
<td>AT, CY, DE, DK, EL, ES, FI, FR, IE, IT, LT, LU, MT, NL, PL, PT, SI, UK [18]</td>
<td>All [18]</td>
</tr>
</tbody>
</table>
Directive 2009/104/EC (work equipment) | Transitional periods generally ended well before the timeframe for the data analysed above and so any influence of these cannot be determined. Given the lack of suitable data relating to the provisions of the Directive as a whole, it is clearly not possible to derive any analyses relating to possible effects of such transient periods. | BE (for specific equipment), EE, EL, ES, FR, CY, LT, LU, NL, AT, PT, FI, UK [13] | BE, EE, ES, FR, CY, LT, LU, NL, AT, FI, UK [11] 

Directive 90/270/EEC (DSE) | No relevant data are available which would permit any impact of this to be examined. In any case, in the majority of MSs, any such transitional period would have lapsed long before the evaluation period minimising any potential impact. | BE, DK, DE, IE, EL, ES, CY, LU, NL, AT, PT, SI, FI, UK [14] | BE, DK, DE, IE, EL, CY, LU, NL, PT, FI, UK [11] 

Directive 1999/92/EC (ATEX) | No national or EU stakeholders have expressed opinions about the effect of the transitional period. No further information on the effect is available. Therefore, we cannot draw any firm conclusions. | AT, BE, CY, CZ, DK, EE, EL, ES, FI, IE, LT, LU, NL, PL, PT, SI, UK [17] | BE, CY, CZ, DK, ES, FI, IE, LT, LU, NL, PL, PT, SI, UK [14] 

Source: CSRs and Directive-specific evaluation reports

An assessment of the effect of transitional periods requires an approximation of the effects achieved from the moment the national provisions come into force. However, as the Table shows, for most directives, no time series data is available to allow for an assessment to be made. This is the case for the Mines and Quarries, Fishing Vessels, Work Equipment, DSE and ATEX Directives. For the remaining three directives that allow for transitional periods (Drilling, Vibration, Noise Directives), the conclusion of the Directive-specific evaluation is the same, although some qualitative evidence indicates that the application of transitional periods was a necessity and had no measurable impact on the safety and health of workers.

Member States were often granted a transitional period, because they were assessed to be unable to implement a given Directive within the standardized timeframe. Our analysis (based on interviews with national stakeholders) indicates that this was often indeed the case. One may argue that fewer impacts were achieved during the transitional period compared to Member States that implemented a given Directive without the use of a transitional period. Yet, without a transitional period, implementation is likely to have been delayed in any case, thus possibly leading to infringements, and health and safety effects would not have been achieved in the meantime regardless.

Moreover, an overall assessment of the effect of transitional periods is complicated by the fact that the use of transitional periods varied considerably from Directive to Directive. As Table 6-4 illustrates, nine MSs made use of the transitional periods in the Mineral Directive, whereas 18 MSs made use of the transitional periods in the Noise Directive. The potential effects of transitional periods therefore vary from Directive to Directive. It should be kept in mind, though, that many of these Directives were implemented more than 20 years ago, as emphasised by several national stakeholders who refused to comment on periods that were ‘long gone’. However, the general
opinion expressed in the national stakeholder interviews is that the use of transitional periods did not cause any major problems. In fact, interviews with stakeholders and relevant authorities have highlighted that the application of transitional periods was necessary in order to achieve a full, correct and effective implementation of the legislation. When viewing the OSH acquis as a whole, transitional periods are unlikely to have had a substantial impact on its effectiveness across all MSs and over the span of the entirety since the adoption of the Framework Directive in 1989.

As safety and health data does not exist on a yearly basis, and as effects are rarely immediately measurable, it is difficult to examine traceable impacts in the specific year of Directive implementation. It is therefore not possible to identify, if specific impacts might have occurred earlier without a given transitional period (unless the transitional period spans a very long period). The assessment of transitional periods is therefore based on a more qualitative assessment on the part of interviewed national stakeholders, and should be regarded as such.

6.5.3 Conclusion on derogations and transitional periods

Qualitative evidence indicates that the use of derogations has not had any degree of measurable impact on the safety and health of workers. If anything, derogations are generally regarded as necessary exemptions that permit establishments to maintain compliance with the nationally transposed Directives. However, there is no quantitative data available that permits the assessment of the effect of any of the derogations applied within any Member State.

Regarding transitional periods, it seems that Member States were often granted one because they were assessed to be unable to implement a given Directive within the standardized timeframe. Our analysis (strictly based on interviews with national stakeholders) indicates that this was often indeed the case. The general opinion expressed in the national stakeholder interviews, when an opinion was provided, is that the use of transitional periods did not cause any major problems. Interviews with stakeholders and relevant authorities have indicated that the application of transitional periods were necessary in order to achieve a full, correct and effective implementation of the legislation. When viewing the OSH acquis as a whole, transitional periods are unlikely to have had a substantial impact on its effectiveness across all MS and over the span of time since the adoption of the Framework Directive in 1989.

6.6 Effect of Common Processes and Mechanisms (EQE3)

EQE3: How and to what extent do the different Common Processes and Mechanisms that were mapped contribute to the effectiveness of the Directives?

The CPMs essentially constitute the toolbox with which to implement the OSH acquis. They are designed to work in tandem and, collectively, increase the safety and health of workers. In part due to the reciprocity and complementarity of the CPMs, these benefits cannot be separated and/or linked to the implementation of the individual CPMs. As a result, their effectiveness is measured on a bilateral basis, with one eye on their individual implementation in establishments and the extent of compliance they instigate (assessed in Section 4.3 (MQ3)), and one eye on the extent to which they have collectively managed to reduce accidents and work-related ill health (assessed in Section 6.2 on EQE1). It thus naturally follows that their combined effectiveness has, in all practical terms, been covered in the above analysis on the effectiveness of the OSH acquis in EQE1. To
some extent, the debate on their overall effectiveness is also inextricably linked to the issue of the approach adopted, in respect of the goal-setting approach established in the Framework Directive, rather than prescriptive approach adopted in some MSs. This issue, referred to in respect of certain individual Directives in chapter 5, is briefly discussed again in relation to overall achievement of objectives (EQE7) and discussed in greater detail in Section 9.1.

As the effects of individual CPMs cannot be quantified, this section will focus, in part, on the challenges and effects associated with the overall legislative design of the CPMs as they interact within the OSH legislative framework. Subsequently, we present the qualitative assessments on the relative importance of the CPMs and their contribution towards established safety and health impacts. Finally, we present additional CPM-specific comments and recommendations, which should however be viewed as a continuation of the EQE1 conclusions above.

### 6.6.1 Effectiveness of the overall design of the CPMs

In Section 4.3.2 (MQ3), we established that some confusion exists at the enterprise level, which can be derived from an inconsistent inclusion of provisions on CPMs in the OSH Directives. For instance, there are indications that employers are, at times, inclined to believe that several risk assessments should be made (one for each applicable Directive). Comments from employers regarding ‘yet another risk assessment’ suggest that, far from regarding the legislative package (as initially envisaged) as requiring one risk assessment covering, in varying amounts of detail, all risks encountered by workers, the legislation is seen by some employers as imposing a series of separate risk assessment requirements, e.g. one chemical risk assessment, one noise risk assessment and one manual handling risk assessment.

The confusion arises from the fact that although the CPMs stem from the Framework Directive, they are also (rather sporadically) included in the specific Directives to a varying degree. Some Directives contain specific provisions on all CPMs, while some only contain specific provisions on a few. When a specific CPM is included in a Directive, it may either contain additional detail or deviations from the CPM, as described in the Framework Directive, or it may simply be a statement that the CPM is applicable in accordance with the Framework Directive (although the latter is, effectively, already established through the application of the Framework provisions). CPMs with no additional Directive-specific requirements may, thus, either be exempted from the listed Directive provisions altogether or may be included as a ‘without prejudice’ clause, with no additional detail. We find that the logic and rationale behind the inclusion of CPMs, or lack thereof, in the specific OSH Directives are not inherently consistent, transparent or well-structured.

As a consequence, the collected OSH legislation is unnecessarily complex, which is mirrored and often exacerbated in the national provisions. An example of this can be found in our mapping of national provisions and implementation of the CPMs in Section 4.1 (MQ1). Here we reported that the national legislation often reflects the structure of the EU OSH legislation, with one framework law complemented with by-laws which transpose each individual Directive. The specific by-laws contain provisions specifying interactions between CPMs across Directives, generally by cross-references to the OSH framework act. However, this is not always done in a systematic fashion and cross-references are not sufficient to ensure a coherent and cohesive approach across legislation.

The evaluation team has experienced similar challenges due to this. It was often necessary to compare CPM provisions within a specific Directive to the corresponding ones in the Framework
Directive in order to establish, with certainty, whether the Directive-specific provisions contain deviations, minor additional requirements or have been repeated with no practical alteration to content. Thus, it is not surprising that some level of detail and consistency may be lost when transposed into national legislation. Likewise, it is not surprising that similar confusion may arise at the enterprise level and particularly amongst SMEs. The Hungarian NIR confirms that confusion persists in SMEs, stating that SMEs often misinterpret the provisions of legislation or Directives (ref. NIR-HU).

It is not possible, based on current data, to estimate the potential impact on this legislative complexity has on the effectiveness of the CPMs. However, these findings show that, to whatever extent possible, simplification is warranted. For more detail, please refer to Section 8.1 on internal coherence, which provides additional suggestions on Directive-specific provisions that may, potentially, be included in the Framework Directive in order to improve consistency and simplify existing OSH legislation.

6.6.2 Relative importance of CPMs (qualitative assessment)

In this subsection, we assess the relative importance of the six CPMs in order to gain a qualitative estimate on their respective effectiveness and impact on the safety and health of workers. As mentioned above, the Common Processes and Mechanisms, collectively constitute a common approach to managing health and safety in the workplace. Manifested, to some extent, within each of the Directives, they present this common approach in requiring, on the one hand, the assessment of risks to health and safety and, on the other, taking steps to remove hazards or reduce risks (i.e. risk management). The CPMs also support this core requirement to ‘manage’ or ‘control’ risks by ensuring the availability of suitable expertise; promulgating the passive (information and training) and active (consultation) of the workforce; and requiring health surveillance (although the value of the latter is sometimes questioned).

As discussed in Chapter 4 (particularly in Section 4.3 on compliance (MQ3)) and in the answer to EQE1 above, the CPMs have, generally, been relatively well implemented in the various Member States. Thus, in order to assess their effectiveness in terms of facilitating a removal hazards or reduction of risks, we, during this evaluation, asked national stakeholders to identify which key requirements have contributed the most to the safety and health impacts of the national legislation transposing the individual Directives. These responses are illustrated, across all Directives, in Figure 6-30 below.
**Figure 6-30 National stakeholders’ general views on the relative importance of CPMs or other KR s regarding their contribution to the effectiveness of the OSH acquis**

<table>
<thead>
<tr>
<th>CPM/KR</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk assessment</td>
<td>40%</td>
</tr>
<tr>
<td>Ensuring prevention and protection services</td>
<td>25%</td>
</tr>
<tr>
<td>Training</td>
<td>15%</td>
</tr>
<tr>
<td>Safety representative</td>
<td>10%</td>
</tr>
<tr>
<td>Responsibility of employer</td>
<td>5%</td>
</tr>
<tr>
<td>Health surveillance</td>
<td>3%</td>
</tr>
<tr>
<td>Information</td>
<td>2%</td>
</tr>
<tr>
<td>Worker consultation</td>
<td>1%</td>
</tr>
<tr>
<td>Infringements/sanctions</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Member State interviews, MSs: 25, stakeholder groups: 64

Note: The graph depicts the relative number specific CPMs or other KRs have been mentioned, across all Member States and stakeholder groups, when answering the question ‘Which key requirements have contributed the most to the safety and health impact of the national legislation transposing the Directive?’

As illustrated, national stakeholders most frequently report that risk assessment, as a CPM, contributes most to safety and health impacts, while information, training and consultation of workers are highlighted as the three next most important CPMs. Health surveillance and preventive and protective services are highlighted to a lesser extent than information, training and consultation of workers, and notably less than risk assessments.

If we compare the national stakeholder assessments on the relative importance of the CPMs to those reported by EU stakeholders (illustrated in Figure 6-31), we find an interesting change in the emphasised CPMs (111).

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(111) Please notice that a direct comparison can only be performed for the first six CPMs as the evaluation question posed to national and EU stakeholders, respectively, contained some variation. The last categories therefore differ.
While EU stakeholders still consider risk assessments to have contributed considerably to the effectiveness of the OSH acquis, they seem to find that ensuring prevention and protective services is the most important CPM across all Directives. Interestingly, this CPM is ranked sixth amongst the national stakeholders. There are several possible explanations for this difference.

One possible explanation is that some EU stakeholders have scored this CPM from an intuitive understanding of the phrase as ‘the act of preventing risks’, i.e. risk management, in accordance with the perspective aired at the Validation Seminar. It is our assessment that the actual meaning of the CPM, namely the requirement of ensuring sufficient competencies within the company to carry out activities related to the protection and prevention of occupational risks or alternatively acquiring those competencies from an external provider, may unfortunately, at least in some cases, not have been sufficiently clear to the interviewed EU stakeholder.

That being said, the two are not mutually exclusive as ensuring existence of necessary competencies is clearly a prerequisite, or at least a tool, for managing identified risks. Therefore, the distinction does not invalidate the results.

Another possible explanation for the different assessments on the importance of ensuring prevention and protective services may be found in the statements made during a handful of the EU interviews conducted. Some interviewees highlighted a problem that many external protection and preventive services design and target their products to larger companies, wherefore their benefit is of little use to SMEs. In some cases, these stakeholders accentuated this CPM in order to direct attention to its importance and the inherent problems embedded in the CPM in their opinion. This understanding may also explain why national stakeholders did not rank that CPM very highly, compared to the other CPMs, as it would not have had a significant impact on SMEs, which constitute the majority of establishments.
In order to assess whether different stakeholder groups have differing views on the relative effectiveness of the specific CPMs, Figure 6-32 below segregates the total relative importance of all CPMs across Directives, as illustrated in Figure 6-30 above, into the assessments provided by national stakeholder groups.

*Figure 6-32 Most contributing key requirements across Directives according to national stakeholders*

Source: Member State interviews, MSs: 25, stakeholder groups: 64

Note: The graph depicts the relative number of times specific KRs have been mentioned, across all Directives, Member States and stakeholder groups, when answering the question ‘Which key requirements have contributed the most to the safety and health impact of the national legislation transposing the Directive?’

The figure shows considerable conformity, particularly between workers and other OSH experts. Authorities seem to highlight risk assessments slightly more often than the remaining national stakeholder groups. In general, however, no notable difference has been observed between national stakeholder groups regarding the relative effectiveness of CPMs.

However, the emphasis on the importance of Risk Assessments has, according to some reports, resulted in a potential unwanted side effect in that, during interviews, several stakeholder expressed concerns that the requirement to perform regular risk assessments might divert attention away from the actual goal of managing the risks in question. This issue was echoed and emphasised by several stakeholders at the seminar held with stakeholders to discuss some of the main outcomes of the study (‘validation seminar’). At the seminar, two overall opinions were repeatedly expressed:

- Risk assessments are an important tool and trigger OSH developments in enterprises, however, the concept should be developed further, and the Framework Directive should introduce a clearer definition of what a risk assessment entails.

- Stakeholders expressed concern that inappropriate emphasis on risk assessments might serve as an obstacle for risk management and preventive measures.
In summary, risk assessments are generally highlighted as the most effective CPM, by both national and EU stakeholders, across all stakeholder groups. Apart from risk assessments, national stakeholders highlight information, training and consultation of workers as the CPMs that have contributed the most to safety and health impacts across all Directives, while EU stakeholders highlight preventive and protective services.

While it would clearly be preferable to conduct an evidence based assessment of the impacts and specific contributions of the various CPMs, an analysis of this type is not possible at this point in time, mainly due to an overall lack of data. As, for instance, concluded by Mendeloff and Staetsky (2012), who investigated the impacts of risk assessments, it may be possible to find sporadic evidence on impacts, but it is difficult to draw any clear causal conclusions, as discussed in Section 0 above. Mendeloff and Staetsky highlight problems such as incomplete information about the levels of risk assessments performed prior to implementation of the Framework Directive (i.e. baseline figures), insufficient data on the specific level of compliance and difficulties in isolating the contribution of risk assessments and, thus, accounting for other factors likely to affect safety and health performance in Member States.

6.6.3 CPM-specific comments and recommendations

In the following section, we supplement the qualitative assessments of CPM effectiveness with a few comments on the specific CPMs. Here we shall focus mainly on risk assessments as the evaluation has resulted in some additional findings that warrant brief discussion.

Risk assessments

As concluded in Chapter 4, most Member States report relatively high compliance levels with the requirement pertaining to execution of risk assessments. According to ESENER-2, 76% of all enterprises in EU-28 carry out risk assessments on a regular basis, although compliance varies considerable from MS to MS, ranging from 94% of establishments in Italy and Slovenia down to 37% in Luxembourg. National data generally places compliance at a slightly lower level at medium to high. These varying, yet relatively high levels of compliance, indicate that risk assessments may, potentially, have been effective at ensuring OSH at workplaces.

This notion was largely supported during national and EU stakeholder interviews conducted during this evaluation, although national stakeholders, as shown above, place notably more emphasis on the relative importance of risk assessments across Directives compared to EU stakeholders. Hence, although, as we stated in our describing of the acquis intervention logic in Section 2.3, it is not feasible to attribute OSH impacts to specific CPMs or KR. We seem to repeatedly encounter an overall perception, and experience, amongst stakeholders that risk assessments have had a larger share in the development of OSH at workplaces. This is not surprising, since risk assessments are generally viewed as the foundation for forming and applying a risk prevention strategy, rather than as a reactive approach to occupational safety and health. In support of this view, the ESENER-2 survey shows that 90% of surveyed establishments in the EU-28 that carry out regular risk assessments regard them as a useful way of managing health and safety (EU-OSHA, 2015). This was a consistent finding across activity sectors and establishment sizes.

However, for risk assessments to effectively improve the safety and health of workers, they need to be performed accurately and regularly; they need to identify all workplace risks and hazards; and they need to result in integral, comprehensive OSH management policies. However, national stakeholder interviewees, and NIRs, suggest that this may not always be the case, particularly in
SMEs that lack the resources (human and financial) to identify and manage hazards adequately. For instance, Poland, in their National Implementation Report carried out by the Polish labour inspectorate in 2011, states that, during checks carried out in small establishments with a high incidence of accidents at work, it was established that the majority of SMEs (more than 86%) carry out risk assessment, yet ‘their quality continues to be unsatisfactory. In every fourth documentation of occupational risk assessments subjected to control, employers failed to identify a threat which ultimately resulted in an accident’ (ref. NIR-PL, see also e.g. NIR-SI for similar statements).

As discussed in Section 4.3.3 (MQ3), if employers do not understand the concept and benefit of risk assessments, they are likely to reduce or limit resources (in terms of commitment as well as money and time) for this activity, which will most likely impair quality, as reported in the NIRs of Poland and Slovenia. In this context, evidence from case studies in Bulgaria and Spain suggests that risk assessments performed by external service providers reduce the need to maintain in-house expertise, and more often result in a lack of subsequent anchoring in the establishment in comparison to risk assessments performed by internal staff (EU-OSHA, 2013c). This, in turn, may entail that risk assessments become a mere formality and, therefore, do not ensure risk reduction or prevention in an establishment. This will, in turn, have a general impact on health and safety and business and priorities within an organisation.

In the context of SMEs, we concluded in Section 4.3.2 (MQ3) that the share of establishments that regularly undertake risk assessments increases in accordance with the size of the establishment. The same pattern can be seen regarding the use of internal staff when conducting risk assessments, as SMEs are more inclined to hire external service providers for the task. A possible consequence of this correlation is that, while risk assessments appear to be performed regularly in SMEs, they may not have the same quality as those performed in larger establishments, nor do they, the same extent, result in an OSH management approach which is integral to the particular business and priorities of the SME.

Another possible challenge to the effectiveness of risk assessments, raised during national stakeholder interviews, is, namely, that the requirement to perform regular risk assessments could divert attention from the actual objective, which is to manage the risks associated with (e.g.) certain exposure levels established in other Directives. This issue was repeated, and emphasised, by several stakeholders at the Validation Seminar. Two common opinions were repeatedly expressed:

1. Risk assessments are an important tool and trigger for OSH developments in enterprises, and should be promoted. However, the concept should be developed further, and the Framework Directive should introduce a clearer definition of what a risk assessment entails.

4. Risk assessment must result in effective prevention measures. While simultaneously calling for additional emphasis on risk assessments, stakeholders expressed concern that inappropriate emphasis on risk assessments might serve as an obstacle for risk management and preventive measures. An interlinkage between these requirements might therefore be accentuated.

This problem of risk assessments potentially diverting focus away from risk management seems to apply to Member States, to varying degrees, depending on their individual approach to OSH management and their success in integrating post-risk assessment management in enterprises.

As discussed in Section 0, ESENER shows that 91% of those establishments that have identified a need for action during a risk assessment do in fact follow-up and take that action. While this does
not define either the quality of the conducted risk assessment (e.g. number of unidentified hazards), or the preventive quality of the follow-up action, it does show that, according to ESENER, the performance of risk assessment does result in some level of subsequent risk management, in a significant proportion of surveyed establishments.

However, according to national stakeholders, one impediment to the link between risk assessments and risk management emanates from the experienced complexity of the OSH legal domain and the 24 Directives as reflected in a call for simplification across several Member States, as discussed above. This suggests that, although the commonality of the approach can be seen by reviewing the various Directives (especially those covering physical agents), this is not reflected in recognising the common process embodied within them, leading to occasional misinterpretation of the intended model for risk assessments.

Another somewhat related impediment can be derived from the Directive Reports compiled during this evaluation. In several cases, evaluations on individual Directives resulted in conclusions regarding inadequate or insufficient risk assessment procedures for a given Directive, which did not adequately address Directive-specific hazards, risks, challenges and/or circumstances.

For instance, in the context of the Fishing vessels Directive, according to national stakeholders in the marine sector, the general requirements to risk assessments are not suited for vessels and specific procedures / provisions for risk assessments should be established that may deviate from or add to those of the Framework Directive (ref. Fishing vessels Directive Report). Similarly, conclusions point to a need for Directive-specific requirements to risk assessment procedures in other Directive Reports, such as the Biological Agents Report, which calls for the risk assessment procedure to include requirements from the Chemical Agents Directive, and the AOR Report, which calls for a review of the risk assessment procedure to give particular attention to the extension of exposure beyond normal working hours (ref. e.g. Biological Agents Report, Vibrations Report, the AOR Report and the Mines and Quarries Report). Findings show that unsuitable, generalised risk assessment procedures may further exacerbate the risk of employers not seeing and/or comprehending the benefit of performing a risk assessment at the enterprise level, which, as discussed, is likely to reduce the resources put into the activity on part of the establishment, most likely to the detriment of its quality.

Another interesting finding from the recent ESENER-2 survey, discussed above in MQ3 above (cf. Figure 4-14), is the fact that the major reasons for not conducting risk assessments were that hazards were already known and that establishments concluded that they had no major problems. This clearly reveals the challenge of convincing establishments to perform risk assessments regularly, regardless of their prior disposition, as new risks may be detected in the process. In other words, the inability to recognise disadvantages in potential non-compliance, particularly in SMEs, constitutes another reason for increasing the effectiveness of the CPM by increasing the regularity, as well as the quality of performed risk assessments.

It is, to some extent, possible to compare the ESENER-2 findings on reasons for not conducting a risk assessment, previously illustrated in Figure 4-14, to the corresponding variable from the ESENER 2009 survey (Figure 6-33 below), although the response options and the categorisation for establishment sizes have changed.
If we do so, we see an identical pattern for the response option ‘no major problems’, which in both 2009 and 2013 is highest for the group of establishments with the fewest employees and then drops markedly from 72 % to 43 % in large establishments. Yet, the recent figures are generally higher, dropping from 82 % for establishments with 5-9 employees believing that they have no major problems, 78 % for establishments with 10-49 employees down to 59 % for establishments with 250+ employees. This may point to a degree of saturation on part of establishments, or may alternatively point to a need for a new risk assessment campaign similar to one performed by EU-OSHA in cooperation with all Member States in 2008, which may have caused an immediate rise in awareness of the number of risks potentially detectable through risk assessments.

If we compare the figures for the administratively oriented response options concerning lacking necessary expertise/too time consuming/too legally complex (the latter two response options are aggregated to ‘too burdensome procedure’ in ESENER-2), we find that the reasons for not conducting a risk assessment are provided less often in ESENER-2 compared to in 2009, particularly amongst smaller establishments. For instance, in establishments with 10-19 employees, administrative and procedural reasons are provided in approximately 40 % of cases, while in ESENER-2 these figures are 33 % (necessary expertise is lacking) and 24 % (the procedure is too burdensome), respectively, for establishments with 10-49 employees. This finding reveals that establishments, to a lesser extent, refrain from conducting risk assessments because the procedure is regarded as too burdensome or because the necessary expertise is lacking (EU-OSHA, 2015). However, it should be noted that this trend diminishes for larger companies, whose responses are more similar in 2009 and 2013 (though some differences remain).

Although some potential for improving the effectiveness of risk assessments can thus be identified, we wish to highlight the fact that the CPM remains a pivotal element of the OSH management system and that the potential of risk assessments should not be neglected. As a French OSH expert states in the course of a French case study, risk assessments performed in-house ‘not only
gave employers responsibility for risk prevention, but also introduced the idea that this is a multidisciplinary activity, prompting institutional reform of the country’s occupational health services. In-house risk assessment has also required the development of a number of support mechanisms.’ (EU-OSHA, 2013c)

Preventive and protective services

The analysis of compliance in MQ3 showed that establishing an actual compliance level with the CPM of preventive and protective services across Member States is challenging. However, we found that SMEs and micro enterprises appear to have a higher degree of non-compliance and also seem to rely on external providers for preventive and protective services to a higher extent than larger establishments.

Furthermore, the CPM of Preventive and protective services is subject to varying assessments regarding its contribution to the safety and health impacts of the OSH acquis by national and EU stakeholders, respectively. While national stakeholders do not place significant emphasis on the CPM, EU-stakeholders find it to be the second most contributing CPM. As mentioned this may be explained by the fact that many external protection and preventive services design and target their products to larger companies, wherefore their aid is of little use to SMEs, who make the most use of them. Clearly, this imbalance has reduced the effectiveness of the CPM to some extent, and constitutes room for improvement.

In MQ3, we also found that compliance tended to be highest in sectors which have traditionally been acknowledged to have more occupational accidents and diseases, such as Mining and quarrying, Manufacturing, Electricity, gas and water supply and Health and social work.

Information, training and consultation of workers

Apart from risk assessments, national stakeholders highlight consultations, training and information for workers as the three next important CPMs (cf. Figure 6-30). As OSH awareness is generally regarded as one of the most important OSH acquis impacts, this emphasis on the three awareness-raising CPMs is not surprising. What is interesting, however, is that, considering their varied level of compliance across MSs, it is felt that the three CPMs contribute equally to OSH impacts. A clear indication of a potential improvement of the effectiveness of the training of workers is that training on prevention and measures related to psychosocial risks and risks associated with exposure to chemical and biological agents, radiation or dust hazards has been provided to less than half of the surveyed employee representatives. Of these, a total of 57 % report that they have received a sufficient amount of training. There is, in other words, a continued need for training on these matters, and on emerging risks in particular. As these proportions refer to the training of safety and health representatives, it is reasonable to assume that the training of workers is more limited. This indicates that, while all evidence suggests that training and information is a pivotal element in the process of improving the safety and health of workers, the effectiveness of the CPM on training may have been moderate.

Interestingly, evidence suggests that employee representatives working in SMEs tend to be more satisfied with the training they receive than those working in larger establishments, indicating that effectiveness of the bilateral CPMs may have a higher degree of effectiveness than, for example, risk assessment, Preventive and protective services and health surveillance.
Health surveillance

Health surveillance is considered relatively important by national stakeholders, while it was is almost negligible according to the cross-Directive responses from EU stakeholders. Notably, the effect of safety and health representatives was assessed to be more or less negligible (cf. Figure 6-31).

On the subject of health surveillance, this is curious, as our analysis shows a clear correlation between the level of health surveillance and the presence of a safety and health representative. For instance, 75 % of interviewed establishments with general employee representation regularly monitor the health of employees, while only 61 % of establishments without employee representatives do so. Likewise, 62 % of business with employee representatives regularly analyse causes of sickness absences while this figure is only 41 % for establishment without employee representatives (cf. Figure 4-8). However, this correlation may not be transparent to stakeholders.

Furthermore, the relative dismissal of the impact of employee representatives made by national stakeholders may well stem from the fact that a considerable part of the European workers still do not in fact have a safety representative or any form of representation. National stakeholders may therefore not have considered safety and health representatives to have contributed to any significant extent to the effectiveness of the OSH acquis, although our analysis shows that they do in fact seem to have a tremendous effect on safety and health measures in establishments. For instance, according to the ESENER-2 survey, the second most cited factor as a driving force behind preventive action in the face of occupational safety and health risks is a demand by workers and their representatives (EU-OSHA, 2015).

Although health surveillance is regarded as a relatively valuable tool by national stakeholders (Figure 6-30), it should also be recognised that it is particularly useful in relation to types of risks and health outcomes where there are clear early warning signs and where the gathered information will provide valuable input to the risk assessment and design of preventive and protective actions. This is to some extent reflected in the acquis as specific Directives include specific requirements to health surveillance. However, the general requirement for health surveillance as stated in the Framework Directive does not incorporate such considerations.

6.6.4 Conclusion the effectiveness of CPMs

On the overall level, an analysis of the interlinkage of the CPMs across Directives, and thus their suitability to work in tandem and collectively increase the safety and health of workers, reveals that the collected OSH legislation is unnecessarily complex, in part due to a seemingly unstructured and unsystematic inclusion (or lack thereof) of CPMs in the individual Directives. As the OSH acquis structure is often mirrored in the national provisions, with one framework law complemented with by-laws that transpose each individual Directive and contain cross-references to the OSH framework act (cf. Section 4.1 (MQ1)), these cross-references are also not always systematic at the national level and not sufficient to ensure a coherent and cohesive approach across legislation. This, in turn, has caused some confusion at the enterprise level, and particularly amongst SMEs, leading to misinterpretations of the provisions of legislation or Directives (ref. e.g. NIR-HU).

On the subject of specific CPMs, scientific literature as well as analysis of the dissemination of compliance levels across sectors indicates that non-recognition of non-compliance, particularly in SMEs, negatively impacts the effectiveness of the CPMs. This is supported by ESENER data that shows that establishments increasingly seem to believe that no major problems exist at the
workplace. Such recognition may primarily be achieved by means of external intervention from inspectors and consequential iterative dialogue as discussed in Section 6.7 (EQE4) below.

In extension, the provision on risk assessment would benefit from being more inextricably linked to risk management and the proactive prevention of identified risks on part of employers, as stakeholders point to a tendency that risk assessment performance occasionally diverts attention away from managing identified risks, particularly in SMEs. This showcases the impact of non-recognition, since SMEs tend to believe that, having followed legislative requirements and conducted a risk assessment, they are in compliance. Contrarily, risk assessments in SMEs are often of insufficient quality to ensure adequate risk management (ref. e.g. NIR-PL and SI, Validation Seminar, national stakeholder interviews).

Furthermore, a review of the risk assessment procedures is needed for some specific Directives, as the general procedures do not adequately address Directive-specific hazards, risks, challenges and/or circumstances. This is, inter alia, the case for the AOR Directive, the Biological Agents Directive, the Fishing vessels Directive, the Mines and Quarries Directive and the Vibration Directive.

Nevertheless, risk assessments are generally highlighted as the most effective CPM by both national and EU stakeholders across all stakeholder groups, and ESENER-2 data shows that 90% of surveyed establishments that carry out regular risk assessments regard them as a useful way of managing health and safety (EU-OSHA, 2015). Also on the positive side, establishments (to a lesser extent than in 2009) refrain from conducting risk assessments, because the procedure is regarded as too burdensome or because the necessary expertise is lacking (EU-OSHA, 2015).

It was concluded, in Section 4.3.3 (MQ3), that risk assessments performed by external service providers reduce the need to maintain in-house expertise and more often result in a lack of subsequent anchoring in the establishment and consequent risk reduction in comparison to risk assessments performed by internal staff (EU-OSHA, 2013c). As SMEs are more inclined to use external service providers, risk assessments in SMEs may not have the same quality as in larger establishments, nor to the same extent result in an OSH management approach that is integral to the particular business and priorities of the SME.

Apart from risk assessments, national stakeholders highlight information, training and consultation of workers, while EU stakeholders highlight preventive and protective services as the CPMs that have contributed the most to safety and health impacts across all Directives.

On the subject of protection and preventive services, many external protection and preventive services design and target their products to larger companies, wherefore their aid is of little use to SMEs, who make the most use of them. Clearly, this imbalance has reduced the effectiveness of the CPM to some extent, and constitutes room for improvement.

Finally, evidence suggest that training and information is a pivotal element in the process of improving the safety and health of workers. However, the effectiveness of the CPM on training seems to have been moderate and a continued need for training is expressed by employee representatives, particularly on emerging risks, indicating that the need for training of workers is likely to be even higher.
6.7 Effect of enforcement (EQE4)

**EQE4: To what extent do sanctions and other related enforcement activities contribute to the effectiveness of the Directives?**

In order for the OSH acquis to ensure a consistent, minimum level of protection for all European workers, implementation needs to be the same level in all Member States, and enforced to the same degree in all European establishments. This is a major challenge for the EU in light of the concerns of many Member States and stakeholders regarding the high level of regulatory pressure on establishments (COWI et. al, 2013). It is therefore highly relevant to assess the extent to which the various enforcement measures have contributed to the effectiveness of the OSH acquis and, thereby, attempt to identify those measures that may provide the best results across MSs.

However, as shown in Section 4.5 (MQ5), the levels and organisation of enforcement measures used to ensure the proper implementation of national provisions are extremely varied, not only from Member State to Member State, but from Directive to Directive. Furthermore, addressing different hazards and Directive-specific challenges requires different enforcement strategies. The effects of specific enforcement measures are therefore influenced by the highly differing characteristics of the nationally transposed provisions of any given Directive, as well as the competence of the national organisation of enforcement authorities and inspectorates (cf. MQ5). In this section, we provide an assessment of the overall effect of enforcement at the EU level and then assess the impact of enforcement in the Member States. Subsequently, we examine the specific case of enforcement in SMEs and finally, we assess the effect of the various enforcement measures that may be applied by national inspectorates.

6.7.1 Overall effect of enforcement

In order to gain an insight into whether enforcement is currently regarded as effective, in terms of improving the safety and health of workers, we have, during the present evaluation, asked EU stakeholders to provide an assessment of the extent to which they find that effective enforcement leads to higher levels of compliance with the Directives. Figure 6-34 thus shows the aggregated average for each stakeholder group of the score on a scale from 1 to 5 of the importance of enforcement provided for each Directive. In other words, it collates scores of the perceived importance of enforcement for all Directives into one score, which represents the OSH acquis.
As illustrated in Figure 6-34, the total score across all EU stakeholder groups across all Directives is that enforcement is highly important for ensuring compliance (4.1). Other OSH experts agree with this perception, providing an average score across Directives of 3.9. Both authorities and worker organisations find enforcement to be of very high importance, with average scores as high as 4.6 and 4.5, respectively, across Directives. These scores imply that, according to workers and authorities, without enforcement many employers would comply with the OSH acquis to a significantly lesser extent.

It is important to highlight that these scores reflect the opinion of EU stakeholders on the importance of enforcement, and they do not reflect the actual level of enforcement that is applied across Member States. Rather, during interviews numerous stakeholders expressed a concern, which was repeated at the Validation Seminar, namely that the current level of enforcement of specific Directives is insufficient. This conclusion was for instance reached in the Fishing vessels Directive Report, where compliance is limited by the fact that, in most MSs, very few inspections take place at sea when the vessel is operating and risks are most severe (ref. Fishing vessels Directive Report).

Perhaps not surprisingly, employer organisations seemingly find the importance of enforcement measures to be markedly lower (3.25) than the other stakeholder groups. Yet, if we compare this average score to the recent ESENER-2 findings discussed under EQE1, which establishes that fulfilling legal obligations is the most cited reason for addressing safety and health (mentioned by 85% of employers) and that avoiding fines from the labour inspectorate is the third most cited reason (78%) (EU-OSHA, 2015), it may give cause to question the validity of the presented employer assessments.
Clearly, the relatively low score made by employers on the importance of enforcement measures may be a reflection of the fact that businesses would, apparently, abide by OSH legislation even without enforcement. Yet, this is mostly likely to be the case in sectors characterized by high numbers of accidents or safety and health risks that could result in sickness absence, which is financially measureable. In other words, businesses in such sectors have an economic incentive to comply which, to some extent, reduces the need for enforcement (for more information on economic incentives see chapter 0 on benefits, costs and broader effects; COWI et al., 2013 or EU-OSHA, 2010). However, it is our assessment that the relatively low scores made by employer organisations are more likely to reflect an attempt to minimise EU focus on enforcement in order to increase the autonomy and flexibility of businesses.

Therefore, to shed further light on the role that enforcement has played in securing OSH compliance and in extension the safety and health impacts identified above (EQE1), in the following subsection, we assess the changes to enforcement levels that have occurred in Member States in recent years as well the possible consequences of these changes.

### 6.7.2 Impact of enforcement in Member States

This analysis takes its departure from the mapping of enforcement authorities presented in Section 4.5 (MQ5). The mapping exercise revealed that, although the total number of labour inspectors has remained constant in EU-27 from 2007 until 2012, the number of workers per labour inspector has decreased slightly from 12,226 to 11,982 inspectors, i.e. -2% (cf. Table 4-29). It also revealed significant variations between Member States regarding the number of labour inspectors and workers per labour inspector, with no common trend across Member States. In some countries, the data assessed in Section 4.5 (MQ5) clearly shows a significant decrease in the number of inspectors, accompanied by a substantial increase in the number of workers per labour inspector. This trend is a direct result of the reduction in resources made available to enforcement bodies due to budgetary restraint policies across several Member States (COWI et al., 2013; European Commission, 2013; Kooperationsstelle Hamburg et al., 2010).

In light of the high importance of enforcement that was expressed by EU stakeholders, this trend is worrisome. Particularly so when this trend continues after a previous period of downsizing of national labour inspectorates in many Member States, as reported in the Commission Communication on the practical implementation of the provisions of the Health and Safety at Work Directives as early as 2004. The 2004 implementation report suggests that, at that time, there was a chronic lack of resources to the labour inspectorates as well as a lack of uniformity in inspections across Member States. Furthermore, the report concludes that the introduction of the Framework Directive did not lead to increased inspection efforts.

If we assess the data extracted from the National Implementation Reports on the number of workers per labour inspector (calculated), the number of inspections per 100,000 workers and the number of inspections performed by each labour inspector (calculated) as shown in Table 6-5 below, it allows us to expand on that analysis of the existence of inspectors to analyse the extent to which enforcement is actually carried out in the MSs[^112].

[^112]: Please note that the Number of workers per labour inspector are the same figures as in Table XXX (MQ4), but they have been repeated here for comparison purposes.
Table 6-5  Number of workers per labour inspector (calculated), number of inspections per 100,000 workers and number of inspections performed by each labour inspector (calculated)

<table>
<thead>
<tr>
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<tbody>
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<td>AT</td>
<td>12,739</td>
<td>13,091</td>
<td>3%</td>
<td>3,470</td>
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<td>-41%</td>
<td>442</td>
<td>270</td>
<td>-39%</td>
</tr>
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<td>2,482</td>
<td>81%</td>
<td>117</td>
<td>224</td>
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<td>CY</td>
<td>13,031</td>
<td>18,343</td>
<td>41%</td>
<td>1,560</td>
<td>1,432</td>
<td>-8%</td>
<td>203</td>
<td>263</td>
<td>29%</td>
</tr>
<tr>
<td>CZ</td>
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</tr>
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<td>5,996</td>
<td>6,735</td>
<td>12%</td>
<td>2,647</td>
<td>2,092</td>
<td>-21%</td>
<td>159</td>
<td>141</td>
<td>-11%</td>
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<td>1,818</td>
<td>1,881</td>
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<tr>
<td>EE</td>
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<td>203</td>
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</tr>
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<td>12,230</td>
<td>10%</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
<tr>
<td><strong>Total/average</strong></td>
<td><strong>12,226</strong></td>
<td><strong>11,982</strong></td>
<td><strong>-2%</strong></td>
<td><strong>1,177</strong></td>
<td><strong>1,172</strong></td>
<td><strong>0%</strong></td>
<td><strong>162</strong></td>
<td><strong>157</strong></td>
<td><strong>-3%</strong></td>
</tr>
</tbody>
</table>

Source: National Implementation Reports. The data on number of workers per labour inspector has been calculated by the COWI evaluation team using Eurostat data on number of employed persons in the Member States (as the data presented by the Member States was in some cases inconsistent). The data on the number of inspections per inspector has also been calculated by using the same source of data on number of employed persons, the indicator on number of workers per labour inspector is more comparable across the Member States. The number of inspections per labour inspector has been calculated based on the previous two variables, wherefore data is not available for those MSs that did not report the number of inspections per 100,000 workers in the NIRs.
This data shows that while the average number of workers per labour inspector across all MSs has decreased, the number of inspections per 100,000 workers has remained remarkably stable at an average of 1,175 inspections per 100,000 workers from 2007 to 2012 despite significant fluctuation across Member States (average calculated based on 19 MSs) \(^{(113)}\). We also see that a labour inspector, on average, performs 157 inspections and that this figure has decreased slightly, by 3 \% since 2007 across the 19 MSs for which data exists. These figures thus do not reveal overall downsizing of enforcement bodies, when assessed at the EU level.

However, this data also confirms the great deal of variance in the level of enforcement across Member States. In fact, the total number of workers per inspector varies from 5,677 in Denmark to 73,505 in Italy in 2012. Number of inspections per 100,000 workers varies from 51 in Lithuania to 2,482 in Bulgaria (2012), while the number of inspections performed by each labour inspector varies from 3 in Lithuania (next is Finland with 62 per inspector) to 286 in Spain. Insight into the latter indicator on the number of inspections performed by each inspector may speak of the effectiveness of national enforcement bodies, but may also hint to varying levels of inspection quality. In this regard, it should be noted that we have no knowledge of whether quality of inspections is likely to rise or fall with the number of inspections performed (e.g. due to gained experience and expertise or due to burden overload and less time spent on each inspection).

Furthermore, the data shows that some Member States have indeed experienced considerable decreases in number of inspections per worker, but in other Member States, the situation is the opposite. Generally, the 'old' Member States are prevalent in the first group, whereas the 'new' Member States are prevalent in the second. However, one important observation is that the respective increases or decreases of inspections per worker across MSs, observed in the NIRs, are not linked to previous levels of enforcement (e.g. number of inspections per 100,000 workers) and thus do not constitute a process of levelling out inspection frequencies across Member States. The NIR data is reasonably consistent with SLIC data, which also shows that inspectorates are subject to budget cuts in some 'old' Member States and that such cuts have not affected the number of inspectors/inspections in all cases, but that they can have implications for salary levels and budgets for education.

One example of an 'old' MS is that of Sweden, mentioned in MQ4 above. During the period from 2007 to 2012, the number of Swedish inspectors has decreased sharply, from 359 full time inspectors to 250 full time inspectors. As a result, the number of workers per labour inspector has increased substantially (by 47 \% to 18,628 workers per labour inspector). Sweden now conducts 735 inspections per 100,000 workers, which means that employers are, on average, inspected once every 17.7 years (being once every 13.5 years in 2007). In contrast, MSs such as Malta or France have added to their enforcement budgets and considerably increased the number of inspectors (by 56 \% and 46 \%, respectively), while the number of workers per labour inspector has decreased accordingly. In Malta, this has resulted in 52 \% more inspections being performed per 100,000 workers (1314), while inspectors also perform 7 \% more inspections on average. However, it should be noted that some MSs assert that a reduction in the number of inspections has been offset by a more focussed assessment programme. It is said that a targeted programme of inspections makes the inspections more effective and efficient at addressing OSH priorities.

\(^{(113)}\) No data is available from Czech Republic, France, Italy, Luxembourg, Poland and UK, and calculated averages exclude Slovakia and Slovenia as those figures of 73 055 and 0.073, respectively, compared to the remaining MSs, raise a question of data validity.
If we assess the correlation of the various indicators across MSs (in 2012), we find a number of interesting observations. Firstly, and not surprisingly, there is a moderate negative correlation between the number of workers per labour inspector and the number of inspections that are performed per 100,000 workers within a given MS (correlation of -0.5). In terms of enforcement, this entails that if the EU wishes to align the level of enforcement across MSs, then it may be beneficial to assess whether the establishment of a minimum number of inspectors per 100,000 workers, either in secondary legislation or guidelines may contribute to this aim.

Secondly, we also see a moderate positive correlation between the number of inspections per 100,000 worker and the number of inspections being performed by each labour inspector on a yearly basis (correlation of 0.54). This shows that higher levels of enforcement seem to be connected to the body of labour inspectors performing more inspections.

To further examine the development of enforcement from 2007 to 2012, Table 6-6 below shows the correlations between the changes in percentage of these indicators, i.e. whether changes to one indicator are likely to be linked to changes to another.

Table 6-6  Correlations between changes in enforcement indicators

<table>
<thead>
<tr>
<th>Change ( %) in number of labour inspectors</th>
<th>Change ( %) in number of workers per labour inspector</th>
<th>Change ( %) in number of inspections per 100,000 workers</th>
<th>Change ( %) in number of inspections per labour inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change ( %) in number of labour inspectors</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change ( %) in number of workers per labour inspector</td>
<td>-0.88</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Change ( %) in number of inspections per 100,000 workers</td>
<td>0.28</td>
<td>-0.27</td>
<td>1</td>
</tr>
<tr>
<td>Change ( %) in number of inspections per labour inspector</td>
<td>-0.44</td>
<td>0.49</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Source:  COWI analysis

As can be expected, the Table illustrates that a decrease in the number of labour inspectors in a MS has largely been accompanied by an increase in the number of workers per labour inspector (thus simply pointing to the fact that a decrease of labour inspectors in a MS rarely reflects a corresponding decrease in employment). Furthermore, we find that increases to the number of inspections being performed per 100,000 worker is largely a result of inspectors running faster and/or being more effective (correlation 0.7), rather than more labour inspectors being employed (0.28, i.e. no statistical correlation).

To highlight differences across MSs, we may point to two groups of MSs which have responded differently to the budgetary challenges linked to enforcement during recent years. One group consists of four MSs (Bulgaria, Denmark, Estonia and Finland) which have all witnessed an increase to the number of workers per labour inspector, yet have also increased the number of inspections per worker and (consequently) the number of inspections performed by each inspector. The other group consists of five MSs (Austria, Belgium, Germany, Hungary and the Netherlands).

For interpretation of correlations we apply the following: Below +/- 0.3: No correlation; +/- 0.5: Moderate correlation; +/- 0.7: Strong correlation
which have also witnessed an increase in the number of workers per labour inspector while also experiencing a decrease in the number of inspections per inspector, which has of course led to a decrease in the overall number of inspections per worker.

This example highlights the need to facilitate more inspections being performed on average by each inspector, particularly in those MSs, which seem to be less effective in terms of number of inspections per inspector. EPSU (2012) also refers to this issue of tasks devoted to labour inspectors as a major concern, and emphasises the need to reduce the administrative tasks assigned to labour inspectors in order to increase the number of controls despite resource deficits.

Several stakeholders (both EU and national) have raised concerns over this general lack of resources for inspection. For example, during the Validation Seminar, when discussing the Chemical Agents Directive, some participants argued that the enforcement of the existing provisions of the Chemical Agents Directive and Carcinogens or Mutagens Directive was poor. Like the EU stakeholders interviewed during this evaluation, many participants thought that better enforcement of existing provisions was important in order to improve working conditions.

The challenge stemming from a drop in resources allocated to labour inspectorates in some MSs has been highlighted by a number of international organisations such as the ILO (2010) and the European Federation of Public Service Unions (EPSU) (2012). These organisations point to the fact that differences in resource allocations available for enforcement in between countries is likely to lead to uneven levels of enforcement, which in turn compromises the overall EC goal of levelling the European playing field for businesses.

Data from ESENER (2009) confirmed the significant variations of labour inspections across Member States. As illustrated in Figure 6-35 below, the frequency ranges from 87 % of surveyed establishments in Romania having been visited by a labour inspectorate who checked for safety and health issues within the past 3 years to 37 % of surveyed establishments in Luxembourg.
Apart from reduced compliance with the Directives, which may result from insufficient enforcement in MSs, another likely consequence is that MSs lose a potential source of guidance to establishments posed by labour inspectors. Labour inspectors can play a highly preventive part in establishments by identifying safety and health risks before accidents happen, and providing guidance as to how to eliminate or reduce hazards. However, to exploit this potential to the fullest entails training labour inspectors to provide them with information and knowledge enough to cope with emerging risks such and new realities (EPSU, 2012).

On this subject, Cardiff University et al. (2011) have assessed the impact of emerging trends and risks on labour inspection methodologies and concluded that labour inspectors should be further supported by means of a long range of support measures which include the following:

- Training
- International collaborations on aspects of inspecting new and emergent risks
- Increased investments in IT support for intelligence gathering
- Dissemination and more systematic planning and coordination
- Improving relations between inspection and preventive services and other OSH experts
Working with partner institutions and other authorities in relation to undocumented/undeclared work

Better data collection on risk by cooperation with other stakeholders like health insurance bodies (e.g. data on significantly increased use of pharmaceuticals against depression at workplaces and data on MSD).

Conclusions highly similar to these were also reached in the Directive-specific evaluations of the Drilling Directive and the Construction Directive, both of which highlighted a need for better consistency across MS inspections, which should be reached by means of guidance to inspectors, establishment of good practices and knowledge sharing (ref. Construction Directive Report and Drilling Directive Report).

It should be noted that as part of this analysis of enforcement, we have also sought to identify a statistic correlation between the level of enforcement across MSs (by means of each of the three indicators, i.e. workers per labour inspector, inspections per 100,000 workers, and inspections per inspector) and the level of compliance (by means of the share of establishments to have performed a risk assessment or to have and OSH policy according to ESENER 2009). No such correlation was identified.

Furthermore, in section 0 on workplace impacts above, we referenced a survey of 26,571 EU-28 residents in which respondents assessed their own working conditions and provided their opinion on whether working conditions in their particular MS had improved, stayed the same or deteriorated over the last five years. In this survey, Estonia (42 %), Malta (40 %), Lithuania (27 %), Latvia and Hungary (both 25 %) are the only countries where at least one quarter of respondents think working conditions in their country have improved over the last five years (European Commission, 2014). If we compare these figures to the number of inspections, once again we see no consistent correlation as Estonia and Malta have had some increase in the number of inspections per worker, while Lithuania, Latvia and Hungary have experienced the opposite.

However, it is important to emphasise that as the indicators for compliance are indicative and furthermore are only available for 2009, the amount of data does not allow for a conclusion that enforcement does not contribute to compliance.

6.7.3 Enforcement in SMEs

In this subsection, we shall briefly discuss enforcement in the context of SMEs. Figure 6-36 below, therefore segregates the above ESENER data from Figure 6-35 on the proportion of establishments visited by labour inspectorates in the past 3 years by size of establishments. For each MS, the first bar illustrates the proportion of the small of establishments with 10 to 19 employees that have been visited by labour inspectorates within the last 3 years, the second bar for each MS illustrates the corresponding proportion of establishments for the slightly larger establishments with 20 to 49 employees etc.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

Figure 6-36 Visits by labour inspectorates to check OSH conditions in the last 3 years, by size of establishment (% of establishments, EU-28)

Source: ESENER (2009)

Note: The figure shows the share of surveyed establishments, by number of workers employed, to have answered ‘Yes’ to the question: ‘Has the [labour inspectorate] visited this workplace in the last 3 years in order to check health and safety conditions?’

Notably, in light of the considerable changes to enforcement across MSs since 2009 and the lack of trend to be observed, we cannot assess the actual numbers depicted in Figure 6-36, as they are no longer representative. Yet, they serve the purpose of illustrating that, generally, the smaller the size of the establishment, the rarer the labour inspections.

This trend is not surprising given the simple fact established in the Labour Market Overview, Chapter 3, that SMEs constitute 99.8 % of all establishments (92.1 % microenterprises). Furthermore, this trend is also illustrated by the findings of the evaluation of enforcement measures applied to ensure compliance with the Chemical Agents Directive (Kooperationsstelle Hamburg et al., 2010). This analysis pointed to the issue of lower compliance in SMEs – in part – due to ‘the slim chances of SMEs receiving a visit from inspectors’, as noted by several interviewed stakeholders. This is a challenge, which is likely to increase in light of the diminishing enforcement resources in some MSs discussed above.

Clearly, this is problematic, considering our findings on a lack of recognition of non-compliance in SMEs discussed in Section 4.3.2 (MQ3). In this section, we concluded that SMEs tend to view compliance as the outcome of an external intervention rather than an on-going process requiring regular internal review. As a consequence, all SMEs studied by Fairman and Yapp (2005) believed that they were in compliance (i.e. ‘that hazards and risks are already known’ and that ‘there are no major problems’), when in fact occupational health problems were present in at least 54 % of them.
Non-compliance was linked with harm, and an underlying assumption was therefore that, if no harm was experienced then the establishment must be in compliance. If they were not in compliance, SMEs believed that external actors would let them know, that they would adjust according to received instructions and would then again be in compliance. This is ultimately summed up to a distinction between lacks of recognition of non-compliance, remedied by means of inspection, as opposed to a lack of awareness, which would necessitate more information. According to Fairman and Yapp (2005) more written and impersonal information would not lead to increased compliance because SMEs would filter it as non-relevant and ultimately ignore it. This conclusion is very much in line with the general opinion expressed by national stakeholders during this evaluation. Instead, Fairman and Yapp (2005) concluded that relative to other approaches, inspection worked for SMEs, because face-to-face interventions, discussions and negotiation allow SMEs to internalise the rules of the OSH acquis and to recognize a need for action.

6.7.4 Effect of various enforcement measures applied by inspectorates

The differentiation across MSs emphasises the fact that better implementation and enforcement of the EU OSH legislation does not solely rely on actions at the EU level but depends largely on actions taken at Member State-level (European Commission, 2013b). It is therefore significant that, according to available literature and subsequently confirmed in interviews with EU stakeholders (cf. Figure 6-37 below), national labour inspectorates and other inspection agencies play a key role in ensuring enforcement. In this subsection, we therefore examine which enforcement measures applicable to MSs seem to be most effective in ensuring compliance.

Firstly, Figure 6-37 shows the relative frequency with which different factors have been mentioned as the most contributing to effective enforcement during EU stakeholder interviews.
Figure 6-37 Most contributing factors to effective enforcement according to EU stakeholders

Source: EU stakeholder interviews, n: 24

Note: The graph depicts the proportion of EU stakeholders that have highlighted each factor as the most contributing factor to achieving effective enforcement. Respondents were allowed to select more than one enforcement measure. Question asked: 'Which factor contributes the most to effective enforcement of the key requirements (level of sanctions, number of visits, etc.)?'

According to our EU stakeholder interviews, the frequency of inspections is the single most important trigger for compliance across all 24 Directives, followed by the quality of those inspections as the second most important factor, which largely corroborates the findings presented above.

The enforcement measure which receives the third highest score by EU stakeholders is enforcement combined with guidance. To combine enforcement with guidance is considered important by stakeholders, because many seem to find that two categories of non-compliant employers exist. One is referred to as the so-called 'bad seeds' who are purposefully non-compliant, and the other is the 'uninformed' employers, who are inadvertently non-compliant. This is what Fariman and Yapp describes as a lack of recognition. The argument often made by EU stakeholders is that by combining enforcement (inspections) with guidance, it would be feasible to provide a more detailed and better suited response to those employers who may wish to comply, but lack knowledge on national provisions and necessary measures.

The last measure that was highlighted by EU stakeholders as an important factor for ensuring compliance is sanctions. In Section 4.5 (MQ5) above, we highlighted the case of Luxembourg, in which labour inspectors can order the immediate cessation of work for the worker concerned in cases of blatant breach of the rules on minimum age for workers, working time and night work, weekly rest, statutory holidays, employment of pregnant/breastfeeding and young workers. When labour inspectors consider that a situation might constitute a threat to workers' safety or health, they can require a technical check of machineries, changes to fix defects or work methods, stopping the activity of the workers at risk, and evacuating the premises. According to national stakeholders in Luxembourg, these can be extremely effective sanctions.
In comparison, Figure 6-38 shows how national stakeholders have rated the effectiveness of a range of enforcement measures.

Figure 6-38 National stakeholder views on the relative importance of enforcement measures regarding their contribution to the effectiveness of the OSH acquis

As shown, apart from inspections, obligations and recommendations for corrective actions and prohibitions are the most effective enforcement measures. However, unlike EU stakeholders, the national stakeholder organisations generally find all measures of enforcement to be relatively significant (although reporting requirements has the lowest score, 3.2, and is thus just above medium). This shows overall support of enforcement as a necessary means for ensuring national implementation across Directives.

6.7.5 Conclusions on the effect of enforcement

All evidence points to the fact that enforcement, and particularly the combined role of inspectors enforcing legislation and providing guidance on implementation, generally, has a significant influence on compliance with the OSH acquis. This is particularly true in SMEs, where non-compliance is prevalent. Two major concerns have been identified in this regard, which form the basis for our main conclusions on the effectiveness of enforcement:

Firstly, in light of the importance of enforcement for ensuring compliance, it is clearly problematic that the level of enforcement across MSs varies to an alarming extent. In fact the total number of workers per inspector varies from 5,677 in Denmark to 73,505 in Italy in 2012. Number of inspections per 100,000 workers varies from 51 in Lithuania to 2482 in Bulgaria (2012), while the number of inspections performed by each labour inspector varies from 3 in Lithuania (next is Finland with 62 per inspector) to 286 in Spain.
Secondly, the number of inspections carried out per number of workers is generally insufficient. In Sweden, for example, which is not the MS with most workers per inspector, or the one with fewest inspections per 100,000 workers, employers are, on average, inspected once every 17.7 years.

This is further exacerbated by challenges stemming from a drop in resources allocated to labour inspectorates in many Member States. Some Member States have experienced a considerable decrease in the number of inspections per worker. While, in other Member States, the situation is the opposite. One important observation is that the respective increases or decreases of inspections per worker across MSs is not linked to previous levels of enforcement (e.g. number of inspections per 100,000 workers) and thus does not constitute a process of levelling out inspection frequencies across Member States. According to SLIC, inspectorates subject to budget cuts have, thus, not affected the number of inspectors/inspections carried out in all MSs, but that they can have implications on salary levels and educational/training budgets.

Notably, a majority of those MSs, that have managed to increase the number of inspections per worker from 2007 to 2012 have done so largely by increasing the number of inspections made by each inspector (i.e. by improving the effectiveness of national inspectorates). This approach may be recommendable across the EU, particularly in those MSs, which seem to be less effective in terms of number of inspections per inspector. This may, *inter alia*, be achieved by reducing the administrative tasks assigned to labour inspectors in order to increase the number of control inspections, despite current resource deficits in many MSs. Furthermore, because of the resource intensity of inspections, the role of others carrying out inspections (e.g. the colleges) could be investigated further.

Much evidence also points to the benefits associated with stressing the preventive and advisory role of inspectors. This is particularly true for SMEs because face-to-face interventions, discussions and negotiation allow them to internalise the rules of the OSH acquis and recognizes a need for action. However, to exploit this potential to its fullest entails training labour inspectors and providing them with sufficient information and knowledge to cope with emerging risks and new realities (EPSU, 2012).

### 6.8 Objective achievement (EQE7)

**EQE7: To what extent are the Directives achieving their aims and what factors have particularly contributed to the achievement of the objectives?**

The seventh effectiveness question posed in this evaluation reflects the essence of the effectiveness evaluation: The extent to which objectives have been reached. Therefore, the question calls for an assessment drawing on the findings presented in the previous sections on evaluation questions 1-6 and forming overall conclusions with regard to the effectiveness of the 24 Directives. In this section, we therefore seek to summarise the findings made so far and to further contextualise these and develop key conclusions on effectiveness.

#### 6.8.1 Understanding of objectives

The first step in assessing the extent to which objectives have been achieved is to establish the nature of the objectives and what defines the desired end-situation to be achieved. The evaluation approached this through establishing intervention logics for each of the 24 Directives (as well as a
generic intervention logic for the *acquis* as a whole). These intervention logics are described in the individual Directive reports. This exercise showed that objectives in terms of the desired health and safety impacts are typically not very clearly stated in the Directives – if at all.

It is obvious that, in general terms, the Directives aim to improve the health and safety situation for workers across the EU. However, the more specific intended impacts, such as – for example – the kinds of occupational diseases to be prevented or reduced, are often not identified. This means that for many Directives there is no clear measuring stick against which to measure the progress towards achievement of objectives.

It must be recognised that this is also a reflection of the complex interrelations between exposures to various risks at the workplace and specific health and safety impacts – and between different OSH measures targeting various groups of workers, types of risk or sectors and their effects on levels of exposure. It is no easy task to define precisely what a Directive aims to do. Nevertheless, it is still striking that the legal texts of the Directives rarely offer much insight into the rationales behind the Directives and their intended safety and health impacts.

The understanding of objectives is furthermore challenged by the situation that the OSH *acquis* contains a mixture of Directives representing a goal and process-oriented approach and Directives representing a prescriptive approach.

The evaluation has analysed objective achievement, looking at objectives at different key levels following the intervention logic structure:

- Objectives concerning specific requirements to be followed by employers – focusing in particular on the 'common processes and mechanisms', i.e. process-management actions to be taken (risk assessment, information, training, health surveillance, consultation).
- Objectives concerning impacts at the workplace occurring as a result of implementing the specific requirements.
- Objectives concerning the health and safety impacts occurring as a result of changes/impacts at the work place (i.e. reduced number of accidents or occupational disease).

### 6.8.2 Effectiveness – compliance and workplace impacts

**Transposition**

It is clear that a precondition for achieving objectives regarding compliance with specific requirements as well as workplace impacts is that the Directives have been transposed into Member State legislation. The evaluation shows that, generally, the Directives have been correctly transposed – and there are only few issues in this regard which have not been resolved and which still influence the level of implementation within the period covered by the evaluation (2007-2012). Derogations and transitional periods are not considered to have had a major impact on the implementation and effectiveness of the Directives.

**Compliance – implementation on the ground**

The next step in the assessment of the impact of the Directives is to consider whether establishments actually implement the requirements 'on the ground' and whether this leads to
changes at the workplaces, which can help to reduce the exposure of workers to various OSH risks. In this regard, the evaluation has looked in particular at the common processes and mechanisms (CPMs) and the extent to which they are implemented.

Overall, the evaluation suggests that compliance with the CPMs is moderate to high. That is, the level of objective achievement in this area is – overall – moderate to high. However, there are differences between the CPMs and between Member States and compliance is particularly high in relation to the risk assessment requirement. It should be noted that this is largely based on subjective views and that there appears to have been very little systematic objective evaluation of compliance within MSs. Thus, requests for information as part of NIRs, or searches for information by national experts, have resulted in little objective material.

Information from various sources indicates that the presence of legal requirements are an important factor (but certainly not the only one) influencing the compliance behaviour of establishments. This suggests that, by requiring the introduction of such requirements in all MSs, the Directives will have had an impact on compliance behaviour.

One important observation in relation to implementation of the CPMs is that some Member States already had similar legislation in place, prior to adoption of the Framework Directive. In particular, the goal-oriented approach was thus already enshrined in the legislative framework of some Member States, whereas others had to make considerable changes. This also means that the high level of objective achievement as regards compliance with CPMs cannot be ascribed to the Directives alone.

A study from EU-OSHA (2013c) concluded that the extent to which goal-setting regulatory approaches, as opposed to prescriptive ones, are embedded in the MSs legislative system (i.e. its existing institutions, systems and structures) significantly influences both implementation and operational outcomes of OSH management (EU-OSHA, 2013c). The study suggests that ‘regulatory systems with a longer tradition of process-based participatory OSH management which were, therefore, least challenged by the implementation of the Framework Directive are associated with greater levels of OSH management practice implementation.’ (EU-OSHA, 2013c).

The challenges faced by MSs with a primarily prescriptive regulatory system and non-participatory traditions depend in part on the MS’s existing labour-relations systems and in part on its level of maturity. According to the European Risk Observatory, a challenge often faced by newer MSs, or MSs with recently reformed OSH systems, is that the role of workplace representation tends to be poorly developed or supported in relation to OSH management. In other words, highly developed MSs incorporating the EU OSH acquis have been challenged by their basis around institutions, structures and processes in which the conceptualisation of OSH is substantially different. Also, factors such as the role of regulatory inspection, the resourcing of appropriate training and information provision for worker representatives and the presence of strong trade unions with an active engagement in health and safety issues is highlighted in the study (EU-OSHA, 2013c).

EU-level data on compliance is limited mainly to the ESENER survey, which was conducted in 2009. Data from the most recent survey, conducted in 2014, has only been available to the evaluation to a limited extent. This means that it is not possible to assess changes in compliance over time in the evaluation period and hence, it is impossible to assess whether or not a particular effect has occurred during the evaluation period. We can say with reasonable certainty that the Directives have had a positive impact on compliance with the CPMs, but whether this impact has been achieved during the implementation period or before is very uncertain. Precisely what
happened after 2009 is also not clear from the existing data, although the available data from ESENER 2014 tends to confirm that levels of compliance have remained stable.

The evaluation shows that there are no clear differences between public and private establishments in relation to implementation of CPMs. However, when considering size of establishment, SMEs and micro-establishments generally display lower levels of compliance with the CPMs, compared to large establishments. Thus, achieving the goal of implementing the CPMs has been achieved to a much greater extent in larger establishments than in SMEs.

The evaluation has pointed to some factors which are considered to have affected the level of goal achievement in relation to CPM implementation. These include, in particular:

› The Framework Directive in itself sets out the goal-oriented approach and the CPMs thus provide a clear structure and approach to be applied. This has been common practise in some MSs for many years, whereas others have had (and continue to have) a more traditional management system with prescriptive legislative approaches embedded in their regulatory regimes. Evidence from a variety of sources suggests that those MSs with regulatory systems with a longer tradition of goal-oriented and participatory OSH management tend to be associated with greater levels of OSH management practice implementation.

› An analysis of the interlinkage of the CPMs across Directives, and thus their suitability to work in tandem and collectively increase the safety and health of workers, reveals that the collected OSH legislation is unnecessarily complex, due in part to a seemingly unstructured and unsystematic inclusion (or lack thereof) of CPMs in the individual Directives. These problems are often carried over in the national legal frameworks, preventing a fully coherent and cohesive approach. This, in turn, has caused some confusion at the enterprise level, and particularly amongst SMEs, leading to misinterpretations of the provisions of legislation or Directives.

› The OSH acquis in itself represents a mix of the goal-oriented approach and the prescriptive approach as mirrored, in particular, in some of the individual Directives. While not incoherent from a legal point of view, these two approaches are conceptually inconsistent and can work against each other in practise. On the one hand, the goal-oriented approach seeks to encourage employers to identify the most suitable means to arrive at a certain end, whereas the prescriptive approach specifies the means to be applied with the intention of achieving the same outcome.

› Enforcement, and particularly the combined role of inspectors enforcing the legislation and providing guidance on implementation, is generally considered to have a significant influence on compliance with the OSH acquis. This is particularly true in SMEs, within which a lack of recognition of non-compliance is prevalent. Seen in this light, it is clearly problematic that the level of enforcement across MSs varies to a very high extent.

› Strong evidence suggests that employee representation has noticeable influence on the proportion of establishments performing risk assessments and an even more pronounced impact on other key requirements. Data suggests that risk assessments performed by external service providers reduce the need to maintain in-house expertise and more often result in a lack of subsequent anchoring of OSH principles in the establishment in comparison to risk assessments performed by internal staff. This is likely to impact on the position of health and safety generally within an organisation’s business and priorities.
Improvements in working conditions
The next question in the impact chain is to consider whether compliance with Directive requirements has led to improvements in working conditions as could be expected. There is very limited information on this particular issue and the data is not consistent. Therefore, a way to approach this subject is to go one step ahead in the chain and consider whether exposure to various risk factors has decreased during the period. A decrease in exposure would be a good indicator that working conditions have improved as a result of compliance with the requirements. This is considered in the section below.

6.8.3 Effectiveness – health and safety impacts
Further in the impact chain, the question is whether the high level of compliance with the CPM requirements is translated into less exposure to risk factors and hence, fewer accidents at work and less work-related disease.

The data on work-related accidents and diseases generally shows that the incidence of accidents has decreased during the evaluation period, whereas the exposure to risks related to various occupational diseases has remained constant or increased, except for a few specific cases.

It is likely that the decrease in incidence of accidents at work can to some extent be ascribed to the implementation of the Directives, as this can be linked to the level of compliance with the CPMs. Increasing safety and reducing accidents is a key element in any risk assessment.

Subjective impressions, from surveys of the workforce, seem to suggest that, in general, there has been a reduction in the proportion of workers who consider that their health and safety is at risk from their work and who feel that work has affected their health.

Quantitative material is less readily obtained, and that which is available is patchy, incomplete, and not readily related to the Osh Directive acquis. However, it is a key concern that exposure to risks related to various occupational diseases have typically either remained stable or increased during the implementation period. The two most prominent work-related diseases – stress and MSDs – have both seen substantial increases in exposure to related risk factors (though with stress it is perhaps understandable, given that there are no specific OSH provisions which address psychosocial risks). MSDs, however, have two specific Directives which address two major hazards contributing to MSDs.

A major problem in assessing the impact of the Directives on the health of workers is the inadequacy of the data systems available for making any such assessment. Even with the example of MSDs given above, it is not possible to establish the extent to which recorded MSDs were caused by risk factors encompassed by the Directives, and therefore the extent to which adequate implementation of their provisions should have prevented them. Against this background, the limited data sources available generally suggest that the Directives are not effective at targeting occupational diseases.

We have just concluded that compliance with CPMs is generally quite high. This clearly leads to a key question of why we are only seeing a limited effect in terms of combatting occupational illness. Why is a generally high reported level of compliance not leading to better results? Based on the existing data, it is not possible to provide exhaustive answers to these questions, but some key factors emerge from the findings in this evaluation:
The compliance data might be misleading. There are some published studies which have suggested that the quality of compliance is often poor, so that even amongst those organisations who report compliance, the extent of effective compliance is likely to be less.

As part of this, risk assessment performance occasionally diverts attention away from managing identified risks, particularly in SMEs. This showcases the impact of non-recognition as SMEs tend to believe that, having followed legislative requirements and conducted a risk assessment, they are in compliance. Contrarily, risk assessments in SMEs are often of insufficient quality to ensure adequate risk management and, even in larger organisations, the risk management measures adopted may not be the most appropriate. Evidence from OSH practitioners, supported by material examined during this study (such as NIRs), suggests that the quickest, easiest, cheapest solution might be that adopted. As a specific example, a number of NIRs report that, in response to identified manual handling risks, organisations frequently resort to manual handling training, regardless of whether or not it is the most appropriate measure.

There seems to be a general view that the Framework Directive, with its orientation towards a goal-oriented approach to OSH (rather than prescriptive) successfully lays out a suitable template for managing workplace risks – but is not in itself enough to ensure that all risks are dealt with sufficiently. One criticism of the goal-setting approach is that the absence of prescriptive intermediate goals makes compliance harder to verify and in the absence of that verification, harder to enforce (especially in OSH cultures with a history of the prescriptive approach).

Even with a high level of good quality compliance with OSH requirements, such a regime will be ineffective if the wrong provisions are adopted, either through initial misconceptions in formulating the provisions of a Directive, or because the provisions originally formulated are no longer relevant to the hazards present in the workplace. It would be wrong to make sweeping generalisations here as the situation varies between Directives and the individual directive reports should be seen for more details on any particular subject. Thus, some directives do appear to still address the relevant risks correctly and do contain provisions that, correctly and competently implemented, should result in suitable risk management. Directives such as those relating to noise and vibration fall into this category. Although those relating to MSDs appear to fall into the second category, the reality is more complicated. The hazards addressed by the Manual Handling Directive, for example, still remain relevant – it is the hazards not addressed by this Directive which create further risks of MSDs that are omitted. Similarly, the hazards arising from working for prolonged periods with DSE still remain, it is just that the nature of the DSE encompassed by the prescriptive element which have lost relevance.

A further area where the inadequacies of the current OSH acquis can be identified relates to the somewhat piecemeal manner in which vulnerable groups are covered. Some groups, such as pregnant/breastfeeding workers, young people and temporary workers, have specific directives. However, each of these can be paralleled by another group who do not have specific protection: the susceptibilities of the fertility of male workers, older workers, and migrant workers have all been recognised but are, in effect, only addressed by the general provisions of the Framework Directive. Older workers perhaps warrant particular mention, as concerns about the implications of an aging workforce pervaded many of the discussions and interviews carried out as part of the evaluation, as well as featuring in the research literature.
For some possibly vulnerable groups, the protection is even less as they are excluded from the provisions of the OSH acquis, either entirely or partly. Groups excluded in some way include the self-employed and home workers. The latter present particular challenges because, for example, developments in DSE and related technologies mean that DSE Users might perform their work at home, or at other remote locations. Then there are those whose work is within the home setting, such as domestic workers. In such cases, protection could almost be regarded as a ‘Member State lottery’ in that the extent to which you are offered protection, if at all, depends on which MS you work in, as some MSs have already exercised their right to make more detailed provisions and extend OSH protection to such groups.

All of these factors present challenges in terms of evaluating the effectiveness of the existing provisions and of ensuring the ongoing relevance of the OSH acquis to the hazards and consequent risks faced by the EU workforce in the future.

6.8.4 Effectiveness of current data and systems enabling monitoring of the implementation of the Directives

As also described in the Commission’s better regulation guidelines, part of effective regulation is monitoring to generate evidence on activities and impacts over time in a continuous and systematic way. The guidelines, among other things, state that the monitoring system should provide time series data, which is more reliable in explaining behaviour than one-off data collection exercises.

It is observed that the Directives, apart from most of them referring to the five-yearly reporting requirement, make little or no reference as to how they will be monitored. As shown in the analysis of EQE1-6, there are some important sources of data at the EU-level, which do enable some monitoring of how the Directives have been implemented. ESENER, ESAW and EWCS do provide valuable input, but in terms of time-series based data suitable for monitoring of each individual Directive, these data sources certainly also have serious flaws. To mention the most important of these, the data from ESENER and EWCS are not annual (and hence not proper time-series data), and all three data sources do not enable data drilling to the necessary detail required to monitor individual directives.

Most of the Directives are encompassed by the general requirement to report to the Commission about their implementation every five years (115). This evaluation report should be seen in conjunction with this procedure, as it builds on the National Implementation Reports (NIRs) submitted by the Member States by December 2013. Having a report every five years from the Member States on the implementation of all these Directives hence also marks a unique opportunity for collecting data and filling gaps where sources, such as those mentioned above, do not give sufficient insight. Our experience from working with the data in the NIRs is that they do provide some valuable information. Unfortunately, the quality varies between Directives and between Member States. This is partly because the respondents in the Member States have taken different interests in answering the questions posed in the questionnaire devised by the Commission (116). However, it is our assessment that it also has a lot to do with the fact that the questions are often phrased in an open and ambiguous manner, and can be (and have been) understood in many different ways. For this reason, the responses from the Member States are

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(115) Ref. Framework Directive (89/391/EEC), Article 17a
often not comparable, and reflect different interpretations of the question posed. This reduces the value of the NIRs as a data source to an important extent.

Furthermore, as discussed in section 7.3.1, fifteen Directives contain reporting obligations. These obligations could be seen as a basis for EU-wide data collection of data pertaining to the implementation of the Directives, but no initiatives have been taken to streamline reporting in these areas, which (at least by the lawmakers) were considered the most pertinent. This is considered a lost opportunity, since it must be assumed that the Member States have put in place systems to implement these obligations, and therefore, making arrangements to ensure a streamlined approach and comparable data across the Member States would have entailed limited additional effort in most cases.

The European Strategy on Safety and Health at Work 2007-2012 included a priority action area related to development of monitoring tools to track the progress in relation to OSH strategies. The evaluation of this strategy found that important progress had taken place during the strategy period, where the basis was founded for provision of pan-European statistical data on work-related accidents through the adoption of two key regulations, while there had been limited progress in relation to EU statistical data on work-related diseases (see Box 6-1). This shows that some important steps have been taken towards getting a better data basis to assess implementation of the Directives and their effects, which is also evidenced by the data on occupational accidents cited in this report (see chapter on relevance as well as answer to EQE1 in particular).

However, there are also important challenges – in particular, in relation to data on occupational diseases as well as obtaining data (on accidents, injuries and exposures to various risks) at a level of detail allowing directive-specific assessments to be made. One specific example would be the use of a question in the Labour Force Survey asking about exposure to ‘noise or vibration’, two distinct physical agents covered by separate Directives. Also, as has been noted in a number of the individual Directive reports (see for example those on the Manual Handling and DSE Directives), classifications of ‘type of injury’ and ‘part of body injured’ do not provide sufficient insight into causation to be able to relate them to the specific provisions of Directives. Many other examples are found in the Directive reports as well as in the Chapter 2 on methodology and chapters on relevance and effectiveness in this Main Report.

Box 6-1  Findings of the evaluation of the European Strategy on Safety and Health at work 2007-2012

With regard to statistics on ESAW, the period of the European strategy included some key positive developments in that two regulations have been adopted, following the work of a Eurostat working group: Regulation 1338/2008, ‘Statistics on accidents at work’ and Regulation 349/2011, implementing Regulation 1338/2008 and containing definitions. These two new regulations will contribute to better comparability of data across the Member States, even though Member States still have to do the necessary work to improve the coverage of the different variables (i.e. types of accidents, types of workers, types of NACE sectors).

Similar progress has not been achieved in relation to EODS, where activities have been given lower priority, and where the methodological challenges are greater, especially due to different systems of recognition and reporting on occupational diseases in the Member States.

A WP on ‘Occupational Diseases’ was mandated in the ACSH to evaluate the measures taken in follow-up of
the 2003 recommendation concerning the development of a European schedule of occupational diseases (117). A report on the current situation in relation to the occupational diseases systems in EU Member States was submitted to the WP in June 2012 (118). This report notes that ‘it is likely that Member States will make more progress in improving their systems with an EU initiative than without’ and provides suggestions for changes to the 2003 Recommendation to make it more relevant and effective. This comprehensive report provides a good basis for future action on this topic. In particular, the report recommends:

› For the EU to set up tools aimed at encouraging Member States to adopt common criteria for the recognition of occupational diseases;
› For Member States to be made more aware of how other Member States present their statistics;
› For the Commission to take an initiative to receive a set of minimal data on occupational diseases from every Member State;
› To establish a Scientific Committee on Occupational Diseases;
› Closer cooperation between the EC, EU-OSHA, Eurofound, Eurostat, the ACSH, the SLIC and other players in relation to priorities and policies on occupational disease.

Source: COWI, IOM and Milieu, 2013

(118) Report on the current situation in relation to occupational diseases’ system in EU Member States and EFTA/EEA countries, in particular relative to Commission Recommendation 2003/670/EC concerning the European Schedule of Occupational Diseases and gathering of data on relevant related aspects, available on CIRCA.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES
7 Benefits, costs and broader effects (EQE5-6)

**EQE5:** What benefits (e.g., reduction in working days lost due to work-related accidents or health problems; reduction in the number or severity of work-related accidents or health problems) and costs arise for society and employers (including compliance costs and administrative burdens) as a result of fulfilling the requirements of the Directives, such as carrying out risk assessment, risk management measures, providing training and information, consultation of workers, protective and preventive services and health surveillance?

**EQE6:** To what extent do the Directives generate broader effects (including side effects) in society and the economy?

This chapter focuses on the two effectiveness questions (EQE5 and EQE6) presented above. We have chosen to answer them in their own chapter (i.e., separately from the answers to the other effectiveness questions, EQE1-4 and EQE7). There are two reasons for this. Firstly, we found that it was difficult to answer these two questions at the Directive-specific level. Hence, there are only a few findings in the 24 Directive reports that help to answer these two questions. Secondly, and linked to the first reason, benefits such as reductions in working days lost at enterprises and broader effects, such as on innovation and the quality of products and services, are best analysed at the OSH acquis level, rather than at the Directive-specific level. This is because it is virtually impossible to disentangle the separate effects of the individual Directives.

This chapter contributes with an assessment of how the health and safety effects translate into economic benefits for the enterprises, workers and society and broader effects beyond health and safety effects, such as increased awareness, quality of products and innovation. This implies that the evaluation methodology differs from that applied for the other effectiveness questions, because we have chosen to present the broader effects, ascertained from EQE6, in relation to the findings on benefits resulting from EQE5, as these questions are closely related.

Efforts to improve and ensure safe working conditions, however, come at a cost. This chapter therefore also contributes with a better understanding of how and to what extent the implementation of the 24 Directives generates compliance costs and administrative burdens for enterprises and governments. These costs include possible investment in, e.g., new safety equipment (substantive compliance costs) and administration, documentation and enforcement
A key question in the economic literature is, therefore whether benefits outweigh costs and so are cost effective.

This focus is in line with the fact that research into the economic impact of policy interventions has become increasingly important, as cost effectiveness is a key requirement both at the national (and EU) level and at the level of the individual enterprise. Not only should new regulations be justified, but accountability for those already in place is also needed. However, the traditional tools of cost-benefit analysis and cost-effectiveness analysis of OHS regulations are particularly challenging (DKM, 2004). Moreover, most OSH interventions are initiated at the enterprise level – either to comply with legislation, in an effort to save money, or for moral reasons. Consequently, most economic evaluations focus on the employer’s perspective. However, this means that important outcomes, such as the value of worker health, are often omitted (van Dongen, 2014).

The chapter is organised as follows: Section 7.1.1 presents the background of this study (including an overview of key concepts, stakeholders and methodologies) and section 7.2 explains the applied evaluation methodology. Next, we present the results from the assessment of compliance costs (7.3) and benefits and broader effects (7.4) separately and make a combined assessment in section 7.5.

7.1 Background

7.1.1 Key concepts and stakeholders

Section 7.1.1 contains the conceptual framework for the analysis. Moreover, we introduce the stakeholders that are most likely to benefit and/or experience costs from the implementation of the OSH acquis. In the economic literature, these perspectives typically include workers and families, employers and governments. An analysis of costs and benefits can therefore include the perspective of a single group of stakeholders (i.e., employers) or be an aggregate of all perspectives (hereon referred to as the societal perspective).

Definition of cost-benefit analysis

Typically, the preferable method for assessing the economic merits of interventions, programmes or legislation is a cost-benefit analysis (CBA). The core question in a CBA is whether or not the benefits outweigh the costs. The CBA is one of the most comprehensive types of economic evaluations. However, economic evaluations can also build on partial economic analyses, such as a cost analysis, which only considers the cost of a programme or piece of legislation, or a cost-of-illness analysis, which only considers the economic burden of a certain disease.

In principle, the CBA is a comparative analysis of alternative courses of actions (e.g. between different interventions, programmes or legislation) in terms of both their costs and benefits. In this type of analysis, the benefits of an intervention/programme or legislation sought are monetized to compare costs (Drummond et al., 1997). The CBA may include all costs and benefits for all stakeholders, which implies a societal perspective. However, in occupational research, it is common that CBAs only include the enterprise perspective – often denoted as business cases. A

\[^{119}\] In theory costs represent opportunity costs – the value of the foregone benefits because the resource is not available for its alternative use.
business case relies on data on the cost of the intervention and its effectiveness, and the results are typically interpreted as the difference between monetary benefits and monetary costs. Results are typically calculated as a cost-benefit ratio, a payback period (PP), net present value (NPV), internal rate of return (IRR), or a profitability index (PI) (EU-OSHA, 2014f).

Irrespective of the perspective, a CBA requires that we have information about all the monetary benefits and costs of the programme, intervention or legislation. In practice, a major challenge is typically that data are not available on all costs and benefits. Moreover, there is considerable controversy on which methodology to use to assess costs and benefits (EU-OSHA, 2014f). Later on in this section, we present different methodologies for assessing costs and benefits respectively.

Definition of costs

It is clear from the economic literature that there is no consensus on how costs should be categorised. In this section, we present some examples of different definitions and categories of costs. This is by no means a full coverage of the terminology used in the literature, but it provides examples of different ways of conceptualising costs (120).

DKM Economic Consultants (2004) distinguish between administrative costs, compliance costs and indirect costs. According to DKM, administrative costs are largely borne by the public agency, which has the task of formulating the standards, monitoring the behaviour and enforcing compliance. Compliance costs cover capital cost of equipment needed and the adaptation of plant required to meet standards and the productivity loss associated with it. Finally, an additional complication lies in the fact that enterprises are heterogeneous. The cost of meeting a standard may be significantly higher for one enterprise than for another. The indirect effects of regulation arise from two possible sources: Firstly, a compliance asymmetry whereby one enterprise suffers a greater cost burden per unit of output, even though regulations are equally enforced across firms. Secondly, enforcement asymmetries occur, where regulations are more vigorously enforced against certain firms.

CEPS (Economisti Associati, 2013) presents a rather elaborate framework for categorising costs in a report on the possibilities for assessing costs and benefits of regulation at the EU-level. CEPS categorises costs in two main groups: direct and indirect costs. The latter covers costs incurred in related markets or experienced by consumers, government agencies or other stakeholders that are not under the direct scope of the regulation. These costs are transmitted through changes in the prices, availability and/or quality of the goods or services produced in the regulated sector. CEPS further categorises direct costs into compliance costs covering the bulk of all direct costs generated by legislation. Within this category, it is possible to distinguish between direct charges, substantive compliance costs, and administrative burdens and hassle or irritation costs.

The Standard Cost Model (SCM), which is a widely applied methodology for measuring administrative costs (The SCM Network) distinguishes between the following categories of costs: Compliance costs are the costs of complying with regulation, with the exception of direct financial costs and long term structural consequences. In the context of the SCM, these costs can be divided into substantive compliance costs (such as investments in safety equipment or physical changes in the workplace) and administrative costs (such as documentation and information obligations).

(120) It should be noted that sometimes the categorisation of costs also includes avoided costs resulting from productivity losses and ill-health (for instance in Van Dongen et al. (2014)).
In the SCM, a distinction is also made between recurrent costs and one-off costs. One-off costs are administrative costs that are only sustained once in connection with an enterprise adapting to new, or amended, legislation/regulation. Recurrent costs are administrative costs which the business incurs on a regular basis in order to comply with legislation. These can arise at regular or irregular intervals. In this evaluation, we refer to the terminology outlined in the SCM focusing on compliance costs. Furthermore, regarding information obligations (IO), we distinguish between reporting obligations and other information obligations, where the former include:

- the obligation to supply information (on request or automatically) to the competent authorities; and
- the obligation to keep certain documents at the workplace (e.g. health record, explosion protection document, risk assessment) in view, for example, of an inspection.

Such reporting obligations were identified as part of the coherence evaluation. We therefore draw on these findings in the analysis of compliance costs. Reporting obligations do not, however, according to the EC Impact Assessment Guidelines and thus the SCM – cover all types of IOs. Hence, we look into IOs in a broader sense – e.g. including obligations regarding registration, monitoring and assessment needed to provide the information, and the actual dissemination of the information to workers and other relevant stakeholders.

Table 7-1 provides examples of different types of costs according to perspective or stakeholder groups. The examples have been taken from available literature on OSH interventions. Note that this table does not distinguish between compliance costs and administrative costs and burdens, and that the examples were not originally developed to assess costs related to implementation of the Directives. Still, the table does provide an overview of the potential costs.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Examples of cost categories</th>
</tr>
</thead>
</table>
| Workers and families | › Using personal safety equipment  
                     | › Effort in adopting safety attitudes and healthy work and lifestyles                      |
| Enterprises       | › Investments (e.g. in new safety equipment)                                               
                     | › Engineering, consultancy and planning costs related to investment                        
                     | › Additional costs for changed working procedures and maintenance                         
                     | › Additional costs of substitution of products                                            
                     | › Extra work time of personnel (e.g. meetings, training, inspections, involvement, provision of information) 
                     | › Purchase of internal/external OSH services                                              
                     | › In-company activities (e.g. human resource management, OSH policy development and planning) |
| Government        | › Safety and health legislation and inspection                                            
                     | › Safety and health research, education and information                                     |

Source: This table draws on several sources, including EU-OSHA (2014e), EU-OSHA (2002) and EU OSHA (2014)
Definition of benefits

In the literature used in this evaluation, various concepts and categorisations of benefits exist. For instance, EU-OHSA (2014e) refers to five main types of benefits in the form of avoided costs in a report on estimating the costs of accidents and ill-health at work:

› Productivity costs (relating to decreases in output or production);

› Healthcare costs (medical costs, both direct, e.g. pharmaceuticals, and indirect, e.g. caregiver time);

› Quality of life losses (monetary valuation of the decrease in quality of life, such as physical pain and suffering);

› Administration costs (costs of administration, e.g. applying for social security payments or reporting on a workplace accident); and

› Insurance costs (such as compensation payments and insurance premiums).

Note that EU-OHSA (2014e) refers to different types of costs. This is because benefits, in economic terms, refer to the avoided costs that would otherwise result from accidents and/or ill health. Thus, the term ‘costs’ may, in some cases, be confusing, as it can refer to both the cost of implementation and the avoided cost resulting from OSH investments.

In a different publication, EU-OHSA (2014f) divides benefits into three other groups: two types of monetary benefits (productivity gains and avoided costs) and other benefits:

› Productivity gains are benefits related to a more efficient working process, resulting in extra production, lower costs or less time spent by employees on a particular task. The idea is that an OSH intervention can result in greater productivity or efficiency. However, it is not unusual for OSH interventions to decrease productivity. For example, the use of aids to prevent back pain can lower productivity.

› Avoided costs are related to adverse events that are prevented by OSH interventions. In this case, the costs do not occur and can thus be considered benefits. There are three main categories of avoided costs that are related to safety and health outcomes.

› Human: costs of reduced productivity, absence, replacement or overtime, and medical and rehabilitation costs;

› Organisations: time spent to investigate and discuss the adverse event (both in team, by management and by external organisations), work reorganisation and follow-up costs of administration and replacement; and

› Potential side effects in certain types of enterprises or of certain safety outcomes, often involving equipment, the working environment or products: repair, replacement and depreciation of equipment, products and the environment (buildings, surroundings), and both external services and internal time used to deal with such issues.
Other benefits can be important to consider in decision-making on OSH interventions, but are often difficult to express in monetary units, such as job satisfaction, corporate image and staff turnover (EU-OSHA, 2014).

This categorisation, however, was developed with a business-case-specific focus on mind. Thus, in this report, we refer to the former categorisation, including an extra category; broader effects, referring to benefits beyond health and safety. Table 7.2 shows various types of economic costs resulting from work-related injuries and ill health according to the perspectives identified in the available literature.

Table 7.2 Examples of benefits

<table>
<thead>
<tr>
<th>Category</th>
<th>Productivity costs</th>
<th>Health care costs</th>
<th>Administration costs</th>
<th>Insurance costs</th>
<th>Quality of life-losses</th>
<th>Broader effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workers and families</strong></td>
<td>Loss of present and future income</td>
<td>Medical and rehabilitation costs (out of pocket spending)</td>
<td>Cost of waiting for treatment etc.</td>
<td>Time for claiming benefits</td>
<td>Physical and moral pain and suffering</td>
<td>Job satisfaction, Motivation</td>
</tr>
<tr>
<td><strong>Enterprise</strong></td>
<td>Sick payments</td>
<td>Cost of reintegration (disabled) workers</td>
<td>Insurance premiums</td>
<td></td>
<td></td>
<td>Innovative capacity, Company image, Quality of products and services</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>Sick payments</td>
<td>Medical and rehabilitation costs</td>
<td>Administrative and legal costs</td>
<td></td>
<td></td>
<td>Agenda setting (national priorities), Integration of workers, Employment and economic growth</td>
</tr>
</tbody>
</table>

Source: This table draws on several sources, including EU-OSHA (2014e), EU-OSHA (2002) and EU OSHA (2014)

7.1.2 Methodologies for assessing costs and benefits

In this section, we present some of the ideal methodologies for assessing costs and benefits. It is beyond the scope of this evaluation to identify and explain all relevant methodologies, and a more thorough analysis of the different methodologies has been presented in a number of recent publications, as outlined in Table 7.3.
The purpose of this section is to identify methods for assessing costs and benefits of the OSH Directives in a quantitative manner. Thus, this section outlines the data requirements necessary for making such estimates. The section ends with an assessment of the possibilities for and challenges of conducting economic evaluations of the OSH acquis based on available data. This section therefore provides the rationale for the methodology used in this evaluation, which we outline subsequently. It is important to note that, even though this section explains a range of methodologies, these are not necessarily the ones actually used in this evaluation. Thus, this section merely provides readers with enough background information to understand the possibilities and, most importantly, the limitations for this study.

Table 7-3  Overview of literature focusing mainly on methodology

<table>
<thead>
<tr>
<th>Author (year), title</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baxter et al. (2014). The relationship between return of investment and quality of study methodology in workplace health promotion programs.</td>
<td>The aim of this study was to determine the relationship between return on investment (ROI) and quality of study methodology in workplace health promotion programmes. Data were obtained through a systematic literature search of National Health Service Economic Evaluation Database. Methodological quality was graded using the British Medical Journal Economic Evaluation Working Party checklist. Economic outcomes were presented as ROI. The study found that higher methodological quality studies provided evidence of smaller financial returns. Methodological quality and study design are important determinants.</td>
</tr>
<tr>
<td>EU-OSHA (2014e). Estimating the costs of accidents and ill-health at work: a review of methodologies.</td>
<td>This report builds on a comprehensive literature overview of methods for assessing cost of accidents and ill health. Thus, this report only concerns potential benefits.</td>
</tr>
<tr>
<td>Van Dongen et al. (2014). Trial-based economic evaluations in occupational health.</td>
<td>This study outlines the main principles and pitfalls in economic evaluations in occupational health. This article mainly focuses on interventions (not legislation).</td>
</tr>
<tr>
<td>CEPS, 2013. Assessing the costs and benefits of regulation.</td>
<td>The study reviews current methods used to assess the costs and benefits of regulation to strengthen the identification and quantification of costs and benefits in impact assessments. It includes a detailed description and assessment of the SCM and other models to assess substantive compliance costs. The reports also points to future challenges of conducting CBA at the European level.</td>
</tr>
<tr>
<td>Uegaki, 2011. Economic evaluation of occupational health interventions from a company's perspective: a systematic review of methods to estimate the costs of health-related productivity loss.</td>
<td>This article builds on a systematic literature review of the methods used for assessing the indirect costs of health related productivity. This review only looks at research published in scientific journals. However, it provides a thorough overview of the quality of the methods used for assessing indirect costs from the enterprise perspective (not specifically linked to the OSH Directives).</td>
</tr>
<tr>
<td>Uegaki. 2010. Economic evaluations of occupational health interventions from a corporate perspective – a systematic review of the methodological quality.</td>
<td>This article builds on a systematic literature review to appraise the methodological quality of economic evaluations of occupational safety and health interventions from an enterprise perspective. It only includes studies published in scientific journals before 2010.</td>
</tr>
<tr>
<td>Drummond et al. (1997). Methods for the economic evaluation of health care programmes</td>
<td>This is a standard textbook on economic evaluations of health care programmes. However, the methodologies are useful for other fields of inquiry as well.</td>
</tr>
<tr>
<td>DKM Economic Consultants (2004). Measuring the impact of</td>
<td>This report presents a synoptic literature review of some of the key publications in the field of occupational health and safety intervention</td>
</tr>
</tbody>
</table>
Assessing compliance costs

Assessing compliance costs stemming from regulation and legislation is considerably more challenging and demanding than assessing the cost of OSH interventions (a business case). The latter is typically conducted at single workplaces and comprises a well-defined set of activities or investments. In contrast, an assessment of the costs of legislation/regulation includes multiple enterprises (typically a whole nation), which might implement the regulation in different ways, making it much more challenging to define the actual activities/investments. This makes it difficult to assess the actual compliance costs, since the marginal cost of complying with a standard can differ significantly from one enterprise to another, even if regulations were enforced uniformly (DKM, 2004).

Most studies and evaluations assessing costs related to specific business cases and workplace interventions do not distinguish between administrative costs and substantive compliance costs. According to Van Dongen (2014), an assessment of costs stemming from a workplace-based intervention requires detailed information on all activities and resources. Such resources may include staff hours, materials used, depreciation, overhead activities, square feet of office space, and traveling. The fact that workers may be transferred from regular production activities in order to participate in activities related to intervention should be also be accounted for. The resources used can be measured using administrative databases, expert panels, surveys or interviews with intervention participants and/or providers, intervention operation logs, or observations. Unit prices may be collected from administrative databases, scientific literature, vendors, and/or costing manuals.

As outlined previously, several Member States have used the SCM methodology to assess administrative costs and burdens resulting from the implementation of legislation, including OSH legislation. In line with the SCM methodology, the unit cost of an administrative effort consists of a tariff (wage costs plus overhead), which is multiplied by the effort involved. This requires the following information:

› Time (the amount of time required to complete the administrative activity); and

› Quantity (the size of the population of business affected by the activity each year).

The SCM does not include substantive compliance costs, e.g. investments in OSH equipment. A previous report from The Centre for European Policy Studies and Economisti Associati (CEPS, 2010) to the European Commission outlined several models for assessing compliance costs, highlighting their individual strengths and weaknesses. Two examples of such models are the...
Dutch Compliance Model, which mirrors the SCM, and the German Regulatory Cost Model for Citizens.

The Dutch Compliance Cost Assessment Model (CCA) mirrors the SCM to a large extent, but looks at substantive costs such as capital costs (depreciation, repayment), personnel costs, energy costs, costs for raw materials and supplies, energy costs and costs for outsourcing. While it does not encompass all relevant costs, it does look at a much broader range of costs compared to the SCM. Likewise, the German Regulatory Cost Model for Citizens covers all direct costs, including substantive compliance costs for businesses. We did not identify any national or EU-level studies that used these models for assessing compliance costs of OSH legislation. We cannot, however, rule out that national studies exist (for instance if these studies have not been published or translated into English). For more information on these models, please consult the CEPS (2013) report.

Finally, it should be noted that all of the above models are generic in nature. Thus, they were not developed with the purpose of assessing compliance costs of OSH specifically. Moreover, while the SCM has been used to assess the administrative costs of OSH legislation and has been widely applied in several Member States, it has also received a fair amount of criticism. For instance, the SCM is based on the assumption of full compliance and the model provides a limited accuracy of estimates (CEPS, 2013). Moreover, the European Trade Union Institute (ETUI, 2010) has questioned whether or not the SCM is suitable to assess OSH legislation.

More specifically, the ETUI questions whether legal requirements can be translated into substantive compliance costs and information obligations (administrative costs and burdens). According to the ETUI, the Framework Directive (and most other OSH Directives) contain few detailed, substantive rules (such as exposure limits, medical checks, etc.). Rather, they lay down general objectives and establish procedures in order to create a management system that forges a link between health and safety at work as part of a business management system. This makes the distinction between information obligations and other substantive compliance costs meaningless, because the production, processing and passing on of information are the building blocks of that process: ‘Without regular information input, there cannot be a preventive approach, only case-specific reaction. Without information, consultation of workers and their representatives is meaningless. Without information, public policing and enforcement is reduced to responding to the most serious occurrences like fatal accidents. Without information, there is no hope of integrating health and safety into company strategy’. (ETUI, 2010).

Assessing benefits

In this evaluation, we consider benefits stemming from avoided costs and reduced quality of life losses due to reductions in work-related accidents and ill health, and broader effects beyond health and safety. Broader effects of OSH, including improved company image, increased OSH awareness etc. are also referred to as intangible effects, because there is no consensus on how to monetise or measure these benefits.

While methods for assessing reduced quality of life and pain and suffering for the affected workers are subject to some controversy, those benefits sought can be assessed using a contingent valuation approach such as willingness-to-pay (WTP) based on survey methods. This method is a tool that monetises intangible costs or benefits by asking respondents, ex ante, what they would be willing to pay to avoid the occurrence (or reduce the risk of) an event, for example injury or disability. It should be noted though that a weakness of this approach is that the estimated values,
for instance for the loss of life or physical pain and suffering, tend to be very context dependent and job-specific (Drummond et al, 1997). However, as we will show later, these benefits typically make up a large proportion of the total health and safety benefits.

To assess the economic benefits of reductions in accidents and ill health in Europe on the basis of avoided costs, two types of information are necessary: 1) the number of avoided cases of accidents and ill health, and 2) the monetary value to attach to the identified cases (the unit value). The unit costs to society per incidence of workplace fatality, workplace non-fatal injury and work-related ill health are referred to as the ‘appraisal values’ (EU-OSHA, 2014e). According to the EU-OSHA report on methodologies for assessing costs and benefits of OSH (EU-OSHA, 2014e), the UK is the only country with a national OSH accounting process designed to continuously update and publish aggregate economic costs (121).

The assessment of avoided accidents and ill health should, ideally, be based on a randomized controlled trial. In real life, such a design is often not feasible – especially when evaluating legislation (as no control group exists). Thus, quasi-experimental designs or before-and-after designs are often used as alternatives. While the before-and-after design is, typically, the most feasible approach, it provides the ‘weakest’ evidence, because no alternative scenarios are considered – thus making causal inferences less robust (EU-OSHA, 2014e). Furthermore, in general, studies utilising a non-randomised controlled trial design have a tendency to overestimate effects. For instance, Baxter et al. (2014) showed that there is a relation between the estimated return of investment and the study quality in health promotion programmes. The study showed that higher methodological quality studies provided evidence of smaller financial returns. Thus, methodological quality and study design are important determinants.

Getting causalities right is therefore an important challenge in economic evaluations such as these. Careful assessment is necessary to ensure that observed benefits are attributable to the specific intervention, programme or legislation. Faulty assumption on type of causality can have serious repercussions on the validity of the results. For instance, a reduction in sickness absence could be the result of higher attendance, reduced workload or other organisational changes at the workplace (EU-OSHA, 2014f) and thus not be related to the acquis. Moreover, a specific challenge in assessing costs and benefits of OSH interventions is that while costs are incurred immediately, benefits are harvested at a later point in time and, therefore, the assessment might underestimate the actual value of the net benefits. This is especially the case when considering long-latency diseases, such as cancer (EU-OSHA, 2014f). This is because a discount rate is typically applied in CBAs and opting for a discount rate of 0 % would be highly controversial.

Possibilities and challenges of estimating costs and benefits at the EU level

In the two previous sections, we outlined some of the challenges of estimating costs and benefits of OSH interventions/legislation. In this section, we assess the feasibility of conducting CBAs of OSH legislation at the EU level. Overall, most authors highlight immense methodological challenges relating both to the cost and benefit side of the equation, and some authors question whether such analyses will be feasible at all.

(121) It should be noted that other Member States do perform calculations as well, but the results of the analysis might not be translated into English and/or be published regularly. See for instance BauA:
http://www.baua.de/de/Informationen-fuer-die-Praxis/Statistiken/Suga/Suga.html
In a report reviewing methodologies for assessing costs of work-related ill health, EU-OSHA (2014e) concludes that the best approach to an EU-level calculation of costs of accidents and ill-health would rely on an aggregation of national calculations. This, however, requires a more in-depth examination of existing country-specific literature and databases (which might not be translated into English) and an analysis of structural differences between Member States. Moreover, according to EU-OSHA (2014e), the most important factor for making international comparisons is a standardisation of national methodologies. In this regard, the authors specifically highlight calculation models developed by the HSE and Safe Work Australia as good practice examples.

It is, however, important to keep in mind that the complexity and requirements to data increase in accordance with the number of perspectives. Much of the literature available only includes one or a few Member State(s) or only one enterprise (when taking the employer’s perspective). Therefore, a key challenge is to assess to what degree limited estimates can be transferred to other Member States (or enterprises) and to what degree these results can be generalized and applied to the entire EU. Therefore, when analysing quantitative estimates of costs and benefits, it is very important to consider exactly what the estimates cover and to what extent they are comparable to other estimates. Two issues deserve particular mention:

- **Benefit transfer**, which is a term that covers the use of estimates originally carried out in another context. Benefit transfer is commonly used with regard to non-marketed goods and services, but also in cases where benefit assessments are, for some reason or other, scarce. However, benefit transfer assumes that the baseline, context and characteristics are the same in the two situations and, if not, that the differences can be detected and corrected for.

- **Risk of double counting** is a pertinent issue particularly when using estimates from different sources in one CBA or when drawing comparisons across different estimates. To avoid double counting, it is important that the type of benefit and/or cost is valued according to a specific estimate, thereby ensuring that a cost item is not (indirectly) taken into account in a (net) benefit estimate and also covered under another cost estimate used in the analysis.

In a report for the European Commission, CEPS (Economisti Associati, 2013) analysed the possibilities of assessing costs and benefits of regulation at the EU level. The authors conclude that a CBA is more challenging when conducted at the EU-level, and that one of the main problems relates to data availability. The need to collect data from all Member States, or to extrapolate from some Member States, is complex and time consuming. To date, there are no EU-level services dedicated to this particular purpose. Moreover, the multi-institution and multi-level nature of EU policymaking makes it difficult to reach a sufficient level of accuracy in the analysis.

Likewise, DKM Consultants (2004) argues that comparing OSH impacts across Member States at this point in time is not feasible. Based on a review of the European literature on the economic impact of OHS, they found that most European countries prepare evaluations (ex ante) before the introduction of legislation. This is done on a routine basis; in some countries it is even mandatory. However, most Member States do not conduct conventional (ex post) cost-benefit analyses and, in most Member States, no efficiency assessment instruments for the occupational health and safety

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*(122) This study focuses on ex-post evaluations. The challenges identified in this study might differ from ex-ante assessments, which is not the primary focus of the present evaluation.*
system are available. Moreover, on the whole there is little experience in quantifying effects on productivity and product quality.

DKM Consultants (2004) also questions the feasibility of CBAs and cost-effectiveness analyses of OSH regulations: ‘Research into the economic impact of regulatory instruments is very difficult to conduct. Their effects may not be measurable.’ DKM Consultants continue, summing up the challenges pertaining to such analyses: ‘the need for large scale studies and long time frames and lack of control over intervention study design, as controlled studies are often not possible. In addition, the quantification of costs and benefits associated with regulations that cover often very diverse industries and their workers and the environment is fraught with difficulty. In particular, compliance costs are difficult to assess, since the marginal cost of complying with a standard can differ significantly from one firm to another, even if regulations were enforced uniformly’ (DKM, 2004).

7.2 Evaluation methodology

The evaluation methodology takes into account from the outset both the aim stated in the TS and in the methodological challenges outlined above. Hence, the aim of the evaluation is, as stated in the TS, to identify which benefits, broader effects and costs society, workers and employers will incur. Furthermore, since the evaluation has a focus on the CPMs (conducting risk assessments, carrying out risk management measures, providing training and information for workers, protective and preventive services and health surveillance) and the other KRs, these are in particular important vis-à-vis the evaluation of compliance costs and administrative burdens. Finally, the analyses place particular emphasis on SMEs, assessing whether benefits and costs are disproportionate to enterprise size.

It should be noted that although the evaluation focuses on the 2007-2012 period, it can be necessary to look at changes before and after implementing the Directives. However, whenever possible, we have focused on the 2007-2012 period.

From the perspective of methodological challenges, we explained that a CBA is considered the best and most comprehensive type of method, and we explained the different requirements for conducting such an analysis. While the CBA is generally considered the most preferable method, it is beyond the scope of this evaluation to conduct a full CBA. Firstly, we do not have a counterfactual situation for comparison, which is key for conducting a full economic evaluation. Secondly, the literature review has shown that estimates of the appraisal values of work-related accidents in Europe are scarce. Thirdly, an assessment of the costs of implementing the Directives requires detailed information on the specific activities undertaken in order to comply with the Directive(s) from the organisations and enterprises affected by the legislation. Hence, we have taken a more pragmatic approach. The basic principle is to triangulate available data to make a qualitative assessment of the magnitude of benefits and costs.

The analysis of compliance costs followed three steps:

- In accordance with the SCM, we conducted a review of the CPMs and KRs to identify and classify information obligations (generating administrative costs) and other obligations (generating substantive compliance costs). Moreover, we also sought to assess the actions and mechanisms that are likely to generate costs, the main types of costs (e.g. labour costs and equipment and supplies) and the frequency of the obligations.
Next, we sought to assess the magnitude of these obligations based on interviews with EU and national stakeholders and findings from the literature review.

Finally, we triangulated findings from the different data sources presented under step 1 and 2 supplemented with the results from the assessment of the implementation in Member States (chapter 4) and the assessment of the coherence (chapter 1).

The assessment of benefits builds on the effectiveness evaluation of the health impacts presented in chapter 1. To estimate the monetary benefits stemming from these health impacts, however, we have interviewed national and EU stakeholders and reviewed the literature. It is important to stress that there are considerable methodological challenges associated with quantifying and documenting the contribution of the Directives to specific health and safety outcomes (because there is limited consolidated EU-level data available on specific outcomes, and because outcomes are influenced by numerous factors other than those addressed by the Directives). In other words, even where changes can be documented, it would be difficult to isolate the Directive’s influence and establish a precise connection between any OSH-related improvement and the identified health outcome. The assessment of benefits therefore follows a top-down approach, which means that we do not seek to estimate benefits in a Directive-specific manner.

Broader effects and side effects were not explicitly covered in the assessment of effectiveness in chapter 6. The analysis therefore draws on findings from the interviews with EU and national stakeholders and the literature review. Finally, we triangulate these data with input from the evaluation of the implementation and the Directive Reports.

Figure 7-1 shows the overall framework for the data triangulation.

**Figure 7-1 Overview of the combination of data sources**

![Diagram of data sources]

### 7.2.1 Interviews with stakeholders

We interviewed 44 EU-stakeholders from 33 different institutions and organisations. Those represented were five workers organisations, 17 employer organisations and nine others.
Moreover, we interviewed a range of national stakeholders (542), including national authorities, labour inspectorates and workers' and employers' organisations. We asked the national and EU-stakeholders to assess the costs and benefits of the Directives. The interview guide included questions on compliance costs and administrative burdens, as well as direct and indirect benefits and broader benefits. For more information on the interview guide, we refer to Appendix H and Error! Reference source not found..

The majority of the EU stakeholders reported that their knowledge was limited and many simply refrained from answering. Moreover, very few provided a quantitative assessment on the magnitude of the costs and burdens and only few stakeholders had strong opinions on the topic. We have therefore not quantified the responses, due to the limited numbers of answers. Instead, we present the various statements qualitatively. However, because the comments and opinions were fragmented and scarce, they do not allow us to assess whether or not these opinions are shared by the majority or simply an individuals' viewpoint. Consequently, the results should be interpreted with caution. For more information on the interviews, we refer to section 2.4.3 and section 2.4.4.

7.2.2 Literature review

We conducted a literature review to identify studies that either quantitatively or qualitatively assess the costs and benefits of OSH. The literature review covers reports and articles published in scientific journals. We primarily focused on more recent publications (after 2000). The review includes sources that present results from other literature or studies, as well as sources that present primary sources and results.

We reviewed the literature to identify the studies that assess both costs and benefits (CBA or cost-effectiveness studies) just on the costs and benefits of OSH legislation in Europe. While we primarily focused on European studies, we have also included relevant studies from outside Europe (Australia).

In the remainder of this section, we outline some shortcomings regarding the quality and availability of the literature. Moreover, we give a brief presentation of the literature in the tables below. Note, that these tables do not give a full presentation of study results and the tables are purely descriptive. The results of these studies are presented in section 7.3.1 (analysis of costs) and section 7.4.2 (analysis of benefits), respectively.

Studies that assess both costs and benefits of OSH

First, we reviewed the literature for CBA studies (or other studies estimating both costs and benefits, such as cost-effectiveness studies from a societal perspective) of OSH legislation at the EU or Member States level. Next, we looked for studies investigating both costs and benefits at the enterprise level.

The literature review, however, revealed several shortcomings and weaknesses regarding availability, relevance and methodological quality of the available literature. Most importantly, we did not identify any CBA studies (or other types of full economic evaluations) of OSH legislation –
at either the Member State or European levels. We did find some attempts, for instance, regarding the DSE Directive in Great Britain (Garvais et al., 2008). However, this study did not produce any quantitative findings and has therefore not been included in the review. The paucity of studies that provides quantitative estimates might be explained by the methodological challenges and the lack of available data, as outlined earlier. We did, however, identify several reports and scientific studies assessing both costs and benefits from the enterprise perspective (profitability studies), as shown in Table 7-4.

According to Uegaki et al. (2010), economic evaluations of OSH are still in their infancy, and several authors conclude that the methodological quality of such studies are generally poor (Uegaki, 2010; EU-OSHA, 2014e). Moreover, the main challenge is that these studies do not directly relate to specific pieces of OSH regulation. Rather, they concern specific interventions that could be categorised as preventive and protective measures under the acquis. However, it is impossible to relate these interventions directly to provisions in the Directives. Moreover, the interventions might not represent the average preventive and protective measures that enterprises would utilise to comply with the legislation. Thus, a major consideration is to what degree the findings from these case studies are transferrable to other enterprises. The strength of these studies, however, is that they assessed both costs and benefits. Thus, they might provide insight into whether some OSH activities/interventions are more cost effective/profitable than others.

Table 7-4  Overview of literature focusing on the profitability

<table>
<thead>
<tr>
<th>Author (year), title</th>
<th>Comments</th>
<th>Type of results</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission (2011). Socioeconomic cost of accidents at work and work-related ill-health*</td>
<td>This report builds on results from the BenOSH study, which consists of a literature review on the potential benefits of OSH and an economic cost-benefit analysis of 56 prevention projects. Only assess the profitability from the enterprise perspective.</td>
<td>This report provides estimates of OSH investments in different types of enterprises and sectors and for different sizes of enterprises.</td>
</tr>
<tr>
<td>EU-OSHA (2014f). The business case for safety and health at work: Cost-benefit analyses of interventions in small and medium-sized enterprises*</td>
<td>EU-OSHA (2014f) reviewed existing case studies (91) of economic evaluations from the enterprise perspective. Moreover, 13 new case studies of OSH-related interventions in European SMEs were developed in the course of this study. These interventions were described using a common template and were assessed using a common accounting model. Of the 91 cases studies identified in the literature, the majority of studies came from North America. However, the report also contributed with 13 new case studies - focusing on SMEs. Only considers the profitability from the enterprise perspective.</td>
<td>Estimates of the profitability of the cases studies are expressed in terms of the payback back period.</td>
</tr>
<tr>
<td>Tompa et al. (2009). A systematic review of workplace ergonomic interventions with economic analysis*</td>
<td>This article presents the result of a systematic literature review of the occupational health and safety intervention literature to synthesize evidence on financial merits of such interventions. Only considers the profitability from the enterprise perspective.</td>
<td>While the economic evaluation of interventions in this literature warrants further expansion, the authors conclude that they found a sufficient number of studies to identify strong, moderate, and limited evidence in certain industry-intervention clusters. The review also provided insights into</td>
</tr>
</tbody>
</table>

(123) We also looked for ex-ante evaluations, but we did not find any. This might relate to the fact that most of the Directive was adopted more than 20 years ago.
how the methodological quality of economic evaluations in this literature could be improved.

ISSA (2012). Calculating the International Return on Prevention for Companies: Costs and Benefits of Investments in Occupational Safety and Health

This study investigated the micro-economic effects of workplace prevention on the company's bottom line based on interviews with 300 enterprises from 16 countries (of which the majority were non-European). The analyses were based on prevention accounting (similar to cost-benefit analyses). However, because this study only comprises a few MS transferability of the results for EU might be limited. Moreover, the preventive measures investigated in the study is not directly linked to the requirements in the Directives.

Quantitative estimates (in EUR) of the costs of different preventive measures and benefits (direct, indirect and intangible). This study also present the enterprises assessment of broader impacts. Finally this study assess the profitability in terms of the ROI (return on prevention indicator) representing the ratio between the monetary benefit of prevention and the cost of prevention.

*This source also provides information on methodology

Studies that assess benefits of OSH legislation in EU

We also identified studies that only looked at benefits of OSH from the societal perspective (Table 7-5). We found that most studies focus on benefits in terms of costs of work-related accidents and ill health, whereas studies focusing on broader effects are scarce. The paucity of studies that actually empirically sets out to measure a relation between OSH legislation/activities and productivity, competitiveness, etc. hampers our ability to draw solid conclusions.

Moreover, while we primarily searched for studies conducted at the EU-level, most studies were conducted at the national level. Clearly, the lack of European studies is a major shortcoming, as this limits transference of findings (as outlined in the previous section). Moreover, it is important to note that the studies do not present estimates of avoided costs (rather the total costs of work-related accidents and ill health). Therefore, the estimates do not show the benefits stemming from the OSH acquis.

Table 7-5  Overview of literature focusing on benefits

<table>
<thead>
<tr>
<th>Author (year), title</th>
<th>Scope and limitations</th>
<th>Type of results</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSE. Cost to Britain of workplace fatalities and self-reported injuries and ill-health in 2012/2013*</td>
<td>The results only concerns Britain. However, the methodology used is to date the most comprehensive and represents one of the most reliable estimates of the potential benefits of OSH.</td>
<td>Estimates (in £) of avoided costs of ill health and accidents by perspective and type of costs including direct, indirect and reduced quality-of-life (in percentage as total costs). This study also include time trends and the percentage of costs attributable to incidences causing under and over six days of absence.</td>
</tr>
<tr>
<td>Safe work Australia (2012). The cost of work-related injury and illness for Australian employers, workers and the community</td>
<td>This report presents estimates of avoided costs related to work-related injuries and ill health for Australian employers, workers and the community. This report does not cover MS.</td>
<td>Estimates of work-related ill health and accidents by perspective (in percentage of total costs) and by type of costs (direct and indirect). This study also provides estimates according to the severity of the incidence including short and long...</td>
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</table>

(124) Australia, Austria, Azerbaijan, Canada, Czech Republic, Germany, Hong Kong, Republic of Korea, Romania, Russian Federation, Singapore, Sweden, Switzerland, Turkey, United States and Vietnam
2008-2009*

Haslam et al. (2010). Perceptions of occupational injury and illness costs by size of organisation

This study explores the extent to which organizations monitor and use information on accidents and ill health. Interviews were conducted with 212 representatives from 49 small- and medium-sized enterprises (SMEs) and 80 large organizations. Only enterprises from the UK participated in the study. Moreover, the study do not present estimates of cost.

Results are presented as percentages of enterprises on their assessment of the financial impact of accidents and ill health.

Eurostat (2004), Statistical analysis of socio-economic costs of accidents at work in the EU-Union

This report presents the results from a pilot study to estimate the costs of accidents based on data from LFS and ESAW and a survey among companies and victims of accidents at work. Several shortcomings were reported. First, only enterprises from 3 MSs participated. Second, enterprises found it difficult to assess health care and rehabilitation costs. Third, only the costs of ill health were not included.

Estimates (in EUR) of the cost of accidents in Europe.


This study estimated the costs of work-related accidents and ill health in the Netherlands. No information on methodology.

This study reports the burden (as a percentage of total costs) according to specific diagnoses.


This report presents estimates of costs of lost labour input in Finland. The report differentiates between direct costs, denoted as lost labour input, and indirect costs that include all other costs. Because no estimate on indirect costs were available, this assessment builds on the assumption that indirect costs are 3-4 times higher than the direct costs.

The report presents estimates (in EUR) of the total indirect and direct costs of work-related accidents and disease.

*This source also provides information on methodology

Literature on compliance costs

Table 7-6 lists the literature on compliance costs related to OSH regulations. We identified three national studies from Ireland (Newell, 2014), Britain (HSE, 2005) and Greece (OECD, 2014) that investigated administrative costs based on the SCM. However, not all of these studies differentiate between costs arising from the OSH acquis and those from national transposition. Moreover, only selected obligations were included in the studies. In addition, we also identified one study that investigated costs in Britain focusing on company size (HSE, 2003).

Table 7-6 Overview of literature focusing on costs

<table>
<thead>
<tr>
<th>Author (year), title</th>
<th>Scope and limitations</th>
<th>Type of results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vogel et al. (2010). Better Regulation: a critical assessment. ETUI</td>
<td>This report analyses how the SCM has been used to assess the costs of OSH regulation. The report aims to inform the debate on ‘Better Regulation’.</td>
<td>Critical viewpoint of the shortcomings of the SCM in relation to OSH.</td>
</tr>
<tr>
<td>OECD (2014). Measurement and reduction of administrative burdens in 13 sectors in Greece</td>
<td>This study assesses information obligations stemming from OSH and Employment relations legislation in Greece based on the SCM. The assessment relies on interviews with business and experts (no information of number of participants).</td>
<td>Quantitative estimates of the costs of information obligations of OSH in Greece (include costs from legislation at national and EU-level).</td>
</tr>
<tr>
<td>Newell (2014). Workplace health and safety: Establishing the</td>
<td>This thesis assesses the level of OSH awareness and what OSH activities that</td>
<td>Percentages of enterprises assessing predefined OSH</td>
</tr>
</tbody>
</table>
## administrative burden of regulation, and assessing the use of information as a means of addressing the burden and improving perceptions

<table>
<thead>
<tr>
<th><strong>EU-OSHA (2010). European incentives to improve occupational safety and health: a review from the European perspective</strong></th>
<th>This review evaluates existing systems providing economic incentives for OSH in Europe to motivate enterprises to improve OSH.</th>
<th>The report offers best practice recommendations and summarises the effectiveness of different economic incentive schemes.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Department for Business, Enterprises and Regulatory Reform (2009). The good guidance guide: taking uncertainty out of regulation.</strong></td>
<td>This report investigates SMEs view of government guidance from 750 SMEs and from over 90 face to face consultations with SMEs.</td>
<td>Provide insight into the experience of SMEs regarding their use of accompanying measures.</td>
</tr>
<tr>
<td><strong>The Department for Business, Enterprises and Regulatory Reform (2008). Improving outcomes for health and safety.</strong></td>
<td>The review considered how OSH regulation affects Enterprises where the overall risk of injury or ill health is relatively low, focusing in particular on SMEs. The review was based 120 formal responses and held over 50 with different OSH stakeholders.</td>
<td>Provide information on the advantages and disadvantages of using external consultancy – especially for SMEs.</td>
</tr>
<tr>
<td><strong>HSE (2003) Cost of compliance with health and safety requirements in SMEs.</strong></td>
<td>This study (n=2015 enterprises) combined with on-site visits (n=30 enterprises) to assess to what extent the cost of OSH compliance are disproportionate across different sizes of sectors. It included enterprises from five sectors (agriculture/forestry, construction, manufacturing, transport and health). As well as general health and safety expenditure, five pieces of regulation were chosen to be included in the study. These were Management of Health and Safety at Work, Control of Pesticides, Control of Substances Hazardous to Health (COSHH), Manual Handling Operations and Noise.</td>
<td>Quantitative estimates (in pounds) on the cost of health and safety in the previous 12 months. The study provides estimates for different types of legislation and specific requirements, like risk assessments. The estimates are presented as the absolute amount per enterprise and the average spend per employee.</td>
</tr>
<tr>
<td><strong>HSE (2005) Annex 2: The administrative burden Measurement Exercise (ABME)</strong></td>
<td>The ABME was a cross-government exercise, carried out in 2005, to assess the cost of administrative burdens in Britain. It estimated the cost to business associated with complying with administrative tasks (form filling, record keeping etc.) to calculate an estimated total annual administrative cost of all legislation in force in May 2005. No information on the data collection.</td>
<td>Quantitative estimates (in pounds) of the administrative burden of health and safety legislation. Moreover, a list of the most burdensome requirements are given.</td>
</tr>
</tbody>
</table>

### 7.3 Compliance costs

The aim of the analysis here is to identify what costs arise as a result of implementing the Directives. Firstly, we identify and categorise obligations that are likely to generate compliance costs, based on a review of the Directives. Next, we present the findings from the analysis of the magnitude of compliance costs, based on data from interviews with national and EU stakeholders and the literature review. Finally, we compare and contrast the findings from the different sources and incorporate results from the evaluation of implementation and coherence.
1.1.1 Identification and classification of obligations

Compliance costs are imposed on enterprises and government from having to fulfil a number of obligations specified in the Directives. In this section, we identify such obligations and classify them as information obligations (IO) – leading to an administrative burden, or as substantive compliance obligations – leading to investments in preventive and protective equipment, implementation of measures and production processes that avoid or reduce exposures, or to other substantive safety and health efforts.

With respect to the classification of IOs, we distinguish, as presented in section 7.3.1, between reporting obligations such as supplying and storing information, and other broader IOs, such as obtaining the information and disseminating (in addition to the formal reporting obligations) it to workers and other relevant stakeholders to improve safety and health at work. While doing this, we acknowledge that some of the obligations specified in the Directives may be on the borderline to be included as IOs. For example, the CPMs: ‘training of workers’ and ‘consultation of workers’ may contain requirements for being informed by the employer. Then again, the ‘training of workers’ may have more weight on other compliance obligations – e.g. on preventive services – and therefore could be classified as substantive compliance obligations, if so. In the following tables we have left out these two CPMs on the basis of a rough assessment that they are neither primarily connected with fulfilling information obligations, nor can they often be categorised as substantive compliance obligations.

Finally, we have – apart from the actual reporting obligations – limited our analysis to obligations (125) stemming from the CPMs and KR. It should, however, be noted that the CPMs and the KRs are not the only obligations that might generate costs. For instance, as outlined in European Treaty Article 4, Member States are obliged to take appropriate measures to ensure fulfilment of obligations – that is, ensure enforcement of the Directives (for more information on enforcement, we refer to section 4.5).

Table 7-7 shows that all general Directives contain IOs and substantive compliance obligations. For the general Directives – but also for the other Directives, as shown in Tables 7-8 to 7-10 – the reporting obligations mostly fall on the enterprises.

The Framework Directive has a special role among the 24 OSH Directives, as it serves as a basis for the 23 specific Directives. Hence, it sets the scene for both IOs and for compliance obligations in the other Directives, although particular compliance obligations are further specified in the more specific Directives, addressing specific risks connected with safety and health in the workplace. The reporting obligation from the Framework Directive thus mainly concerns the obligation of enterprises to be in possession of documentation of risk assessments, of their relevant occupational accidents, and of the relevant responsible authorities. In addition, governments have been obliged to submit national implementation plans (NIR) to the Commission – that we also have made good use of within this evaluation. With respect to the other IOs, the Framework Directive provides the general information provisions for risk assessment, information of workers, and health surveillance, and for the control and supervision of these. Similarly, it provides with respect to

(125) Note that not all obligations are likely to generate substantial costs, such as Article 11 in the Framework Directive (stating that workers representatives may not be placed in disadvantage because they consult or raise issue with the employer). These have not been included in the analysis.
substantive compliance obligations the general provisions for preventive services and other measures.

The Workplace, the Work equipment, and the OSH signs Directives only contain a few more stringent and/or specific IOs or substantive compliance obligations, while the PPE Directive inherently specifies compliance obligations that lead to costs of acquiring personal protective equipment. Actually, the PPE Directive contains an obligation that might impose costs for the worker as well: ‘Member States may provide, in accordance with their national practice that the worker be asked to contribute towards the cost of certain personal protective equipment in circumstances where use of the equipment is not exclusive to the workplace’ (Art. 4).

A general observation is that the Directives do not specify reporting frequencies. Instead, the frequency depends on workplace operations or stipulations in national legislation. As an example, the Framework Directive states: ‘Member States shall define, in the light of the nature of the activities and size of the undertakings, the obligations to be met by the different categories of undertakings in respect of the drawing-up of the documents provided for in paragraph 1 (a) and (b) and when preparing the documents provided for in paragraph 1 (c) and (d)’. Another example is the obligation to record the inspections of work equipment in the Work Equipment Directive. The Directive states that inspections must take place before and after installation of new equipment, or if moved to a new site or location. Thus, this reporting obligation depends on the installation activities at the workplace. Moreover, the reporting obligations are recurrent costs that will occur at irregular intervals (since the SCM specifies that only the introduction of new or amending legislation will impose a one-off cost). (126)

(126) According to the SCM one-off costs are only sustained once, when enterprises adapt to a new or amended legislation/regulation or make an investment in health and safety equipment. Recurrent costs refer to obligations that regularly, irregularly or constantly arise when complying with the legislation.
Table 7-7  IOs and substantive compliance obligations from general Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Reporting</th>
<th>Other IOs by CPM and KR</th>
<th>Substantive compliance obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>89/391/EC (framework)</td>
<td>E: risk assessment document, list of occupational accidents, list responsible authorities (9) G: national implementation plan (17)</td>
<td>CPM: risk assessment (6,9), information of workers (10), health surveillance (14) KR: control and supervision*</td>
<td>CPM: preventive services (7) KR: measures necessary for the safety and health protection of workers (6), emergency measures (8)</td>
</tr>
<tr>
<td>89/654/EEC (workplace)</td>
<td></td>
<td>CPM: risk assessment (3), information of workers (8)</td>
<td>CPM: preventive services (5)</td>
</tr>
<tr>
<td>2009/104/EC (work equipment)</td>
<td>E: records of occupational accidents (5)</td>
<td>CPM: information of workers (7)</td>
<td>KR: minimum safety and health requirements (3,4,5, annex I and II)</td>
</tr>
<tr>
<td>92/58/EEC (OSH signs)</td>
<td>CPM: information of workers (7)</td>
<td></td>
<td>KR: minimum requirements for OSH signs (3,4,5 and Annex I-IX)</td>
</tr>
</tbody>
</table>

* Obligations that generate costs for governments.

For the hazard-specific Directives, Table 7-8 shows that these also contain a number of IOs and substantive compliance obligations, in addition to those provided for by the Framework Directive. The table shows that the majority of the reporting obligations fall on enterprises. In three Directives, one or more reporting obligations fall on the relevant authority (government). For example, the Asbestos Directive (Art. 21) states that Member States ‘shall keep a register of recognised cases of asbestosis and mesothelioma’ and Art. 9 on prohibitions in the Chemical Agents at Work Directive states ‘the competent authority shall request the employer to submit the following information … ‘. Likewise, according to the Noise Directive, Member States must report the use of derogations to the Commission. Moreover, the Member States are obligated to submit a single report on practical implementation (Art. 17a in the Framework Directive). However, it is also important to note that many of the reporting obligations falling on the enterprises indirectly and implicitly imply administrative burdens on the national authorities. For instance, Art. 17 in the Biological Agents Directive states that the Commission should have access to data on fatal accidents and disease resulting from exposure to biological agents. However, it does not explicitly state that Member States must report these data to the Commission.

The other IOs from the hazard-specific Directives primarily concern additional information requirements, compared with the Framework Directive, connected with risk assessment and health surveillance, but there are also for additional requirements to be in possession of exposure registrations, such as those of the Asbestos and Biological Agents Directives. Similarly, many of the specific substantive compliance obligations concern measures to avoid and reduce specific exposures.
Table 7-8  IOs and substantive compliance obligations from hazard-specific Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Information Obligation (Art. no)</th>
<th>Other IOs by CPM and KR</th>
<th>Substantive compliance obligations (Art. no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90/269/EEC (manual handling)</td>
<td></td>
<td>CPM: risk assessment (4), information for workers (6)</td>
<td>KR: avoidance of manual handling, measures to avoid and reduce exposure, organizations of work stations</td>
</tr>
<tr>
<td>90/270/EEC (display screen equipment)</td>
<td></td>
<td>CPM: risk assessment (3), information for workers (6), health surveillance (9)</td>
<td>KR: daily work routine (7), minimum requirements for workstations (4,5)</td>
</tr>
<tr>
<td>2002/44/EC (vibration)</td>
<td>Reporting: E</td>
<td>CPM: risk assessment (4), information for workers (6), health surveillance (8)</td>
<td>CPM: preventive and protective services (4) KR: measures to avoid and reduce exposure (5) and exposure limit values and action values (3)</td>
</tr>
<tr>
<td>2003/10/EC (noise)</td>
<td>Reporting: E</td>
<td>CPM: risk assessment (4), information for workers (8), health surveillance (10)</td>
<td>CPM: preventive and protective services (4) KR: measures to avoid and reduce exposure (5,7), individual hearing protectors (6), exposure limit values (3)</td>
</tr>
<tr>
<td>2004/40/EC (electromagnetic fields)</td>
<td>Reporting: E</td>
<td>CPM: risk assessment (4), information for workers (6), health surveillance (8)</td>
<td>CPM: preventive and protective services (4) KR: measures to avoid and reduce exposure (5) and exposure limit values (3)</td>
</tr>
<tr>
<td>2006/25/EC (artificial optical radiation)</td>
<td></td>
<td>CPM: risk assessment (4), information for workers (6), health surveillance (8)</td>
<td>CPM: preventive and protective services (4) KR: measures to avoid and reduce exposure (5) and exposure limit values (3)</td>
</tr>
<tr>
<td>2004/37/EC (carcinogens or mutagens)</td>
<td>Reporting: E</td>
<td>CPM: risk assessment (3), information for workers (12), health surveillance (14)</td>
<td>KR: measures limiting worker exposure (5,7,10), three tiered approach (4,5)</td>
</tr>
<tr>
<td>98/24/EC (chemical)</td>
<td>Reporting: E</td>
<td>CPM: risk assessment (4), information for workers</td>
<td>KR: specific protection and prevention measures (6),</td>
</tr>
</tbody>
</table>
### Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States

<table>
<thead>
<tr>
<th>Agents</th>
<th>G: records of prohibitions (9)</th>
<th>(8), health surveillance (10)</th>
<th>Limit values (3,6,5), procedures for accidents, incidents and emergencies (7), prohibitions (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2009/148/EC (asbestos)</strong></td>
<td>E: notification before work commences (4), plan of asbestos-related work (13), register of asbestos-related activities and medical records (19)</td>
<td>CPM: risk assessment (3), information for workers (4, 17), health surveillance (18)</td>
<td>CPM: preventive and protective services (7)</td>
</tr>
<tr>
<td></td>
<td>G: register of recognised cases of asbestosis and mesothelioma (21)</td>
<td>KR: regularly measurement of exposure (7), registers of workers (19)<em>, register of cases (1)</em>, guidelines (3)*, notification system (4)</td>
<td>KR: exclusion from work (3), prohibition of use (5), measures to reduce exposure (6), maximum exposure limit (8), cessation of work (10), exceeding exposure limits (12), required measures (16)</td>
</tr>
<tr>
<td><strong>2000/54/EC (biological agents)</strong></td>
<td>E: list of exposed workers (11), results of risk assessments, accident/incident records, and medical records (7), notification of first time use of biological agents (13)</td>
<td>CPM: risk assessment (3,7), information for workers (9,10) health surveillance (14)</td>
<td>KR: substitution (5), measures to avoid and reduce exposure (6), measures in health and veterinary care facilities (15), special measures for industrial processes, laboratories and animal rooms (16)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KR: information for the competent authority (7), list of exposure workers (11), prior notification to competent authorities (13), classification on biological agents in group 2-4</td>
<td></td>
</tr>
</tbody>
</table>

* Obligations that generate costs for governments.

Table 7-9 shows that we have not identified any specific reporting requirements for the worker-specific Directives, and the other IOs can also be argued to be slight refinements to those provided for by the Framework Directive. The substantive compliance obligations do, however, add to the standard working condition requirements and thus affect the work organisation. For the Young People Directive, it concerns working time requirements, hereunder those for night work and rest periods. For the Pregnant/breastfeeding workers Directive, it concerns adjustments to work functions and a possible change of job or leave.
Table 7-9  IOs and substantive compliance obligations from worker-specific Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Information Obligation (Art. no)</th>
<th>Other IOs by CPM and KR</th>
<th>Substantive compliance obligations (Art. no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>94/33/EC  (young people)</td>
<td>CPM: risk assessment (4), information for workers (4)</td>
<td>KR: working time (8), night work (9), rest periods (10), annual rest (11), breaks (12)</td>
<td></td>
</tr>
<tr>
<td>92/85/EEC  (pregnant/breast-feeding workers)</td>
<td>CPM: risk assessment (4), information for workers (4)</td>
<td>KR: three-tiered approach including adjustment of work, change to another job and granting of leave, cases in which exposure is prohibited (5)</td>
<td></td>
</tr>
</tbody>
</table>

Finally, Table 7-10 shows that all five sector-specific Directives comprise additional reporting obligations for the enterprises. For example, the Construction Directive specifies that the employer must draw up a health and safety plan before setting up the construction site. Likewise, the client or the project supervisor must communicate a prior note to the relevant authority before the work starts. Further, the Commission document ‘Non-binding Guidance for Good Practice for Understanding and Implementing Council Directive 92/57/EEC’ that the safety and health plan is a dynamic document that should be updated throughout the project. Furthermore, in the Mineral Extracting Directive, it is specified that the health and safety plan must ‘be drawn up prior to the commencement of work and be revised if the workplace has undergone major changes, extensions or conversions’.

The other IOs mainly complement the obligations specified in the Framework Directive, while the substantive compliance obligations inherently are sector-specific. For example, the Fishing vessels and Medical treatment on board vessels Directives concern safety and health equipment suitable for being at sea, while the Drilling and the Mines and Quarries Directives cater for safety and health at work in more enclosed areas.
### Table 7-10 IOs and substantive compliance obligations from sector-specific Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Information Obligation (Art. no)</th>
<th>Reporting:</th>
<th>Other IOs by CPM and KR</th>
<th>Substantive compliance obligations (Art. no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>93/103/EC (fishing vessels)</td>
<td>E: reporting in ship's log of occurrences at sea affecting safety and health of workers (3)</td>
<td>E:</td>
<td>CPM: information for workers (8)</td>
<td>KR: minimum requirements (4-6), emergency equipment (7), personal protective equipment (7), skipper training (10)</td>
</tr>
<tr>
<td>92/29/EEC (medical treatment on board vessels)</td>
<td>E: check list of medicine and medical equipment (2), check list of antidotes (3), list of medical supplies (Annex II and IV),</td>
<td>G:</td>
<td>KR: inspection (6)*, information and medical training (5)</td>
<td>KR: minimal requirements as regards medical supplies (2), watertight medicine chests (2), sick bays (2), doctor on board (2), antidotes (3)</td>
</tr>
<tr>
<td>92/57/EEC (construction)</td>
<td>E: safety and health plan, and reporting of serious and/or fatal occupational accidents and situations of serious danger (2), notification of major construction works (3)</td>
<td>G:</td>
<td>CPM: information for workers (11)</td>
<td>KR: drawing up a health plan (3), prior notification (3)</td>
</tr>
<tr>
<td>92/104/EEC (mines and quarries)</td>
<td>E: safety and health document (3)</td>
<td>G:</td>
<td>CPM: risk assessment (3), information for workers (7), health surveillance (9)</td>
<td>KR: protecting from fire, explosions and health endangering atmospheres (4), escape and rescue facilities (5), communication, warning and alarm systems (6), minimum requirements for safety and health (10)</td>
</tr>
<tr>
<td>92/91/EEC (drilling)</td>
<td>E: safety and health document (3), protection plan regarding hydrogen sulphide or other toxic gasses (Annex, Part A)</td>
<td>G:</td>
<td>CPM: risk assessment (3), information for workers (7), health surveillance (8)</td>
<td>KR: safe workplaces (3,10), measures for protection from fire explosions etc. (4), escape and rescue facilities and warning systems (5,6)</td>
</tr>
</tbody>
</table>

* Obligations that generate costs for governments.

While we present our findings from the analysis of the magnitude of compliance costs in the next section, **Error! Reference source not found.** we also provide, from reviewing the Directives, our assessment of the types of actions required to fulfil the obligations, and so of the main cost parameters. The table shows, as already mentioned, that all obligations are recurrent, but that the exact frequency is not specified. In many cases, the frequency will depend on the practices within the enterprises. Moreover, as shown in the table, how enterprises should carry out the activities is not specified. Thus, findings clearly show that compliance costs will largely be determined by enterprises' operations, the working environment and the mode of implementation, and we have assessed that the main cost parameter related to the IOs is labour cost.
Finally, the above analysis shows that we have identified different types of substantive compliance obligations:

- obligations that require enterprises to change/alter the way the work is organised (work organisation);
- obligations that require enterprises to invest in safety equipment (safety equipment); and
- obligations that require enterprises to change physical working aspects, like equipment or workstations (physical aspects of work).

These categories represent different mechanisms that might impose substantive compliance costs for enterprises. Table 7-12 shows examples of the different actions related to these mechanisms. Moreover, as shown in the table, we assess that the main cost parameter generated from actions related to the organisation of work will be labour costs, while the main cost parameter regarding safety equipment is most likely to be equipment and supplies. Finally, actions related to the physical aspects of work are likely to generate costs both from
equipment and supplies and labour costs. It should be noted that some of the actions represent different opportunities for the employers. For instance, the Pregnant/breastfeeding workers Directive specifies that enterprises might temporarily adjust the work, change the job or grant leave.

Table 7-12 Examples of different types of substantive compliance costs

<table>
<thead>
<tr>
<th>Mechanisms</th>
<th>Examples of actions required</th>
<th>Main cost parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work organisation</td>
<td>Rest periods, breaks, prohibitions from executing certain types of work, different work tasks/working time etc., decontamination and disinfection procedures, temporary adjustment of work, change to another job, leave</td>
<td>Labour costs</td>
</tr>
<tr>
<td>Safety equipment</td>
<td>Safety signs, escape routes and rescue facilities, doctors on board vessels, medicine chests and medical supplies, antidotes, first aid and firefighting facilities, personal protective equipment, technical (and organizational) measures to protect against ATEX, individual hearing protectors, sick bays</td>
<td>Equipment and supplies</td>
</tr>
<tr>
<td>Physical aspects of work</td>
<td>Maintenance/repair and safety of work equipment, restrictions of use of work equipment, safe workstations (manual handling), Display screen workstations, communication and alarm systems</td>
<td>Equipment and supplies/labour costs</td>
</tr>
</tbody>
</table>

7.3.1 Assessment of the magnitude of compliance costs

As outlined in section 7.1.2, compliance costs are typically assessed based on survey data, interviews or administrative data collected from enterprises. However, in this evaluation, we had to rely on information gathered from the interviews with EU and national stakeholders and data from previous studies. We have outlined the main strengths and weaknesses in section 7.2 of these data sources.

To the extent possible, we distinguish between administrative and substantive compliance costs. In practice, the available data do not allow us to make a clear distinction between the two, because EU and national stakeholders rarely distinguish between administrative and substantive compliance costs. The main reason is that these are rather technical terms. In addition, the SCM does not cover substantive costs, and we therefore included cost studies that used different terminology and methodology (not distinguishing between the two).

EU and national stakeholders viewpoint

Figure 7-2 shows that the majority of national stakeholders claim that there has been compliance costs associated with the Framework Directive. Not surprisingly this applies, in most cases, to employers.
Many of the EU stakeholders interviewed found it difficult to put precise figures on actual compliance costs stemming from the implementation of the Framework Directive, although many of the national stakeholders (about half) suggested that the additional costs (both compliance and administrative costs) were significant – in particular for SMEs and microenterprises with limited resources, knowledge and time.

However, EU and national stakeholders generally expressed the opinion that the increased compliance costs could be regarded as an investment in safety and health improvements, and that the increased safety and health benefits, in many cases, outweigh the increased compliance costs. Thus, among many stakeholders, there is awareness and recognition of benefits. In other words, compliances costs are often seen as necessary short-term costs, incurred with the aim of realising long-term benefits.

In this context, as discussed when answering EQE3, it should be noted that while many Member States have assessed risk assessment to be the largest contributor to the effectiveness of the Framework Directive, it is not assessed to be the most costly CPM. More stakeholders point to the provision of information and training of workers as the most costly, along with ensuring preventive services and actions such as organising and adapting work to workers in the effort to improve safety and health. Other important cost items include access to safety and health expertise, be it internal or external, as well as the acquisition of equipment to meet proper safety and health standards.

The EU stakeholders representing authorities and employers assess that the compliance costs are higher among SMEs, because SMEs rarely have the expertise in-house and often have to rely on external experts or consultants.
We also asked the national and EU-stakeholders to assess if the Directives led to administrative costs or burdens. The main opinion among the EU stakeholders is that, if any, administrative costs or burdens are driven by the national transposition of the Directive, rather than by the Directive itself. This is contradictory to the national stakeholders, who express the opinion that the Framework Directive has increased administrative costs (albeit to lesser extent than the increase in compliance costs, which we will discuss later). This view should, however, only be considered indicative, as many of the stakeholders found it difficult to answer this interview question. In addition, there seems to be little consensus on what is covered by administrative costs.

Findings from the literature

The aim of this part of the literature review was to identify studies that have quantified the compliance costs and administrative burdens, which is a subset of administrative costs. Moreover, we also aimed to investigate if compliance costs are higher among SMEs.

Earlier we explained the difference between administrative costs and burdens. In brief, administrative costs can be divided into administrative burdens and business-as-usual. The latter covers activities that the enterprises would carry out regardless of legislative requirements; whilst administrative burdens only include costs that directly stem from legislative requirements (activities that are not part business-as-usual). There are a number of reasons for enterprises to carry out business-as-usual OSH activities. For example, enterprises might wish to achieve OSHAs 18001 certification, or OSH activities might also be a requirement from clients, insurers or partners (Newell, 2014).

We did not identify studies that have mapped or measured compliance costs arising from the OSH acquis in its entity at the EU-level. We identified three recent national studies (Ireland, Greece and the UK) investigating administrative costs and burdens of OHS legislation. These studies typically focus on selected information obligations.

In Greece, the OECD (2014) investigated administrative costs and burdens from information obligations related to OSH and employment relation regulation based on interviews with business and experts. The analysis included information obligations stemming from EU and national legislation as well as other regulation, but only covered a selection of all obligations relevant to OSH and employment relations (127):

- Obligation to report within 24 hours accidents at work (Framework Directive);
- Obligation to keep records relating to health and safety and physical agents – noise, vibration and optical radiation (Framework Directive and Vibration, Noise and Artificial Optical Radiation Directive); and

(127) Obligation to report information about individual employee joining and leaving an employer, Obligation to report and update the annual personnel list to the Labour Inspectorate, Obligation to maintain and retain records of employees annual leave, Obligation to produce payslips including minimum wage information and retain payslip records
Obligation to report and keep records relating to health and safety on construction sites (Construction Directive).

The OECD analyses found that the most burdensome information obligation related to OSH is the obligation to report and keep records relating to health and safety on construction sites. However, a high percentage (80 %) of this obligation was business-as-usual, which means that the enterprises would continue to fulfil this obligation irrespective of the legislation. The same applies for the two other obligations. Because administrative burdens only include those activities that are not business-as-usual, it follows that the actual burden is rather small. In Table 7-13, we have summarised some of the main findings concerning information obligations related to the OSH Directives.

<table>
<thead>
<tr>
<th>Directive</th>
<th>Information obligations</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 89/391/EEC (framework)</td>
<td>Obligation to report within 24 hours accidents at work</td>
<td>This obligation was one of the least burdensome information obligations and 70 % was considered business-as-usual. The actual practices vary significantly from enterprise to enterprise. However, most of the interviewed enterprises announced accidents by fax.</td>
</tr>
<tr>
<td>Directive 89/391/EEC (framework)</td>
<td>Obligation to keep records relating to health and safety and physical agents - noise, vibration and optical radiation</td>
<td>Most of this obligation is perceived as business as usual (80 %) due to internal safety standards in the enterprises or the service requirements set forth by manufacturers. It is also worth noting that most of the enterprises states that they would perform measurements irrespective of the obligation to assess how equipment is performing and whether there is a need of service.</td>
</tr>
<tr>
<td>Directive 2002/44/EC (vibration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directive 2003/10/EC (noise)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directive 2006/25/EC (artificial optical radiation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directive 92/57/EEC (construction)</td>
<td>Obligation to report and keep records relating to health and safety on construction sites</td>
<td>The process of maintaining records relating to health and safety on construction sites accounts for a large percentage of the administrative cost assessed in the study. However, the administration costs relating to the costs were considered to be business as usual (90 %) due to internal quality assurance processes (mainly in large enterprises) and because the records were considered evidence in case of a legal dispute. In terms of compliance, only a small proportion of SMEs appears to comply.</td>
</tr>
</tbody>
</table>

Source: OECD (2014). Measurement and reduction of administrative burdens in 13 sectors in Greece

The HSE (2005) in the UK has also used the SCM to assess the administrative burden of regulations for enterprises in 2005 (the ABME project). The ABME estimated the total annual administrative cost of health and safety legislation to be EUR 2.8 billion (£2.032 billion). Moreover, the ABME identified ten regulations that account for 77 % of the HSE’s total annual costs, shown in Table 7-14. However, there is little available information on the methodology and the content of the specific obligations.
Table 7-14  Top ten health and safety administrative burdens in the UK

<table>
<thead>
<tr>
<th>UK regulation</th>
<th>Top administrative burdens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management of Health and Safety at Work Regulations 1999 (transposing the</td>
<td>Risk management and risk assessment (includes the assessment of risk and the follow-up</td>
</tr>
<tr>
<td>Framework Directive)</td>
<td>measures to manage risks)</td>
</tr>
<tr>
<td>Gas Safety (Installation and Use) Regulations 1998 (128)</td>
<td>Landlords’ gas safety check</td>
</tr>
<tr>
<td>Lifting Operations and Lifting Equipment Regulations 1998 (transposing the</td>
<td>Checking and recording examinations of equipment</td>
</tr>
<tr>
<td>Work Equipment Directive)</td>
<td></td>
</tr>
<tr>
<td>Control of Substances Hazardous to Health Regulations 2002 (transposing the</td>
<td>Risk assessment</td>
</tr>
<tr>
<td>Biological Agents, Chemical Agents and the Carcinogens or Mutagens Directives</td>
<td>Employee training and maintaining records of training</td>
</tr>
<tr>
<td>Directive)</td>
<td>Information to employees</td>
</tr>
<tr>
<td></td>
<td>Health and safety information to employees</td>
</tr>
<tr>
<td>Control of Asbestos at Work Regulations 2002 (transposing the Asbestos</td>
<td>Compiling information on emergency arrangements for the emergency services</td>
</tr>
<tr>
<td>Directive)</td>
<td></td>
</tr>
<tr>
<td>Safety Representatives and Safety Committees Regulations 1977 (transposing</td>
<td>Providing information to safety representatives to enable them to fulfil their functions</td>
</tr>
<tr>
<td>the Framework Directive)</td>
<td></td>
</tr>
<tr>
<td>Construction (Design and Management) Regulations 1994 (transposing the</td>
<td>Preparing rules for the management of health and safety.</td>
</tr>
<tr>
<td>Construction Directive)</td>
<td>Updating the health and safety file and delivering it to the client on completion of the</td>
</tr>
<tr>
<td>Provision and Use of Work Equipment Regulations 1998 (transposing the Work</td>
<td>Job</td>
</tr>
<tr>
<td>Equipment Directive)</td>
<td>Checking and recording examinations of equipment</td>
</tr>
</tbody>
</table>

Source: [http://www.hse.gov.uk/simplification/annex2.htm](http://www.hse.gov.uk/simplification/annex2.htm)

Note: This figure takes into account the removal of ‘business as usual’ costs – costs for activities that businesses would do anyway regardless of legislation.

The report from HSE (2005) also highlights the fact that the costs of some requirements are large because the requirements apply to all enterprises, while other requirements only apply to enterprises in a certain sector, which minimises the total costs. This means that costs stemming from requirements that apply to all enterprises (such as risk assessments) can be quite small for the individual enterprise whilst, from the societal perspective, they are very costly. Moreover, the HSE also notes that health and safety regulations are of a goal-setting nature, and do not specify, for example, how information is to be disseminated to others, or how records are to be kept. Thus, the actual interpretation of legal requirements (by businesses, advisors, insurers, or others) can sometimes contribute towards high administrative costs when complying, rather than the law itself (HSE, 2005).

(128) It is not clear from the report what part of the OSH legislation this particular obligation refers to.
The third study by Newell (2014) is based on a survey among enterprises in Ireland. In the survey, the researchers asked the enterprises to select those OSH activities defined by the national OSH legislation that they considered to be most burdensome. These activities included:

- OSH training
- Inspections/audits
- Safety statements
- Contractor-related documentation
- Records of inspection of work equipment
- Risk assessments
- Maintaining a permit to work system
- Investigation of accidents/incidents.

Note that this study did not assess the degree to which obligations were business-as-usual. Moreover, it did not identify the specific pieces of legislation related to the activities above, nor did the survey quantify the time actually used.

Table 7-15 shows that the most burdensome obligation was completing the risk assessment (26 % of all respondents). There was no statistical significant difference between the size of the enterprises and what they considered to be most burdensome. It is not clear whether risk assessments include preventive health and safety measures.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintaining a permit-to-work-system</td>
<td>2</td>
</tr>
<tr>
<td>Investigation of accidents/incidents</td>
<td>2</td>
</tr>
<tr>
<td>Records of accidents and incidents</td>
<td>3</td>
</tr>
<tr>
<td>Contractor-related documentation</td>
<td>13</td>
</tr>
<tr>
<td>Inspections/audits</td>
<td>14</td>
</tr>
<tr>
<td>Safety statements</td>
<td>16</td>
</tr>
<tr>
<td>OSH training documentation</td>
<td>24</td>
</tr>
<tr>
<td>Risk assessments</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: Newell (2014) Workplace health and safety: Establishing the administrative burden of regulation, and assessing the use of information as a means of addressing the burden and improving perceptions

Costs according to enterprise size

The HSE in the UK conducted a large survey study (n=2015 enterprises), combined with on-site visits (n=30 enterprises), to assess the extent of disproportion in the cost of OSH compliance
across differently sized sectors. The study included enterprises from five sectors (agriculture/forestry, construction, manufacturing, transport and health). As well as general health and safety expenditure, five pieces of regulation were included in the study. These were Management of Health and Safety at Work Regulations (transposing the Framework Directive), Control of Pesticides Regulations (Transposing the Biological Agents Directive), Control of Substances Hazardous to Health (COSHH) Regulations (transposing the Carcinogens or Mutagens Directive), Manual Handling Operations Regulations (transposing the Manual Handling Directive) and Noise at Work Regulations (transposing the Noise Directive). It should be noted that the HSE study on compliance costs suffered from a low response rate (10-24 %, depending on sector) and that the study is not representative for all enterprises in the UK. For more details, we refer to the full report (HSE, 2003).

All respondents in the study estimated how much they had spent on health and safety during the previous 12 months (March 2001-March 2002). On average, smaller companies spent just over EUR 5,600 (£4,000), compared with more than EUR 37,800 (£27,000) for medium-sized companies, almost EUR 588,000 (£420,000) for large organisations, and almost EUR 882,000 (£630,000) for very large organisations.

When calculated per employee, the most noticeable finding is the relatively small amount spent per employee in large and very large organisations when compared with small and medium-sized organisations. The amount spent per employee is very similar across large and very large organisations. For organisations with less than 250 employees, the amounts spent per employee are also broadly similar. There are, however, some variations in relation to specific regulations. For example, SMEs spent considerably more per employee than larger organisations on the Noise at Work Regulations, Management of Health and Safety at Work Regulations, and on the Manual Handling Regulations, as shown in Figure 7-3.

![Figure 7-3](image_url)  
**Figure 7-3 Average spend per employee by size of enterprise**

The study also looked at the costs of more specific requirements under the different pieces of legislation. Figure 7-4 shows the average amount spent per employee in relation to the
Management and Safety at Health Regulation. The greatest expenditure, by far, relates to implementing control measures, followed by providing health and safety assistance. The smallest average spent amount relates to making other special arrangements for temporary staff, young people etc. and co-operation with employers with whom the respondent organisation shared the workplace.

For the other pieces of legislation, the study found that:

- **Noise**: The greatest expenditure was on reducing noise and ‘other’ actions. These ‘other’ actions primarily included audiometry tests, noise assessment tests and getting new, quieter equipment. The least expenditure was on maintenance and review.

- **Manual handling**: The greatest expenditure was on changing work practices and new equipment. The least expenditure was on risk assessments and reviewing assessments.

- **Pesticide control**: The greatest expenditure items were related to controlling and confining application of pesticides and the least on application notifications and restrictions.

- **COSHH**: The greatest expenditure was on control measures, and the least on the time spent deciding what to do.

In the section on the analysis of compliance costs, we referred to the difference in the goal-oriented and prescriptive approach. We explained that the CPMs (as set out in the Framework Directive) are based on a goal-oriented approach. A report from the UK (Department for Business Enterprise and Regulatory Reform, 2008) suggests that while the goal-oriented approach provides enterprises with flexibility, it may give rise to certain challenges for SMEs, especially regarding risk assessments, because this approach requires enterprises to have a degree of OSH understanding and knowledge. However, SMEs often lack specific criteria that can provide them with reassurance of
their compliance (which might lead to over or under compliance). Moreover, SMEs may not know where to look for guidance, including free support from local and national authorities.

Previously in the section on compliance (4.3), we found that the share of risk assessments being performed by internal staff increases along with the size of the establishment. This correlation reflects the fact that large enterprises have the necessary human resources to perform risk assessments in house, while microenterprises and SMEs often are forced to acquire the service from external providers, while having less financial resources at their disposal. According to the survey study from the Department for Business Enterprise and Regulatory Reform (2008), third parties (like business consultants, health and safety experts, lawyers, financial service companies, and occupational health professionals) play a significant role in shaping how employers experience and feel about health and safety. Today, health and safety consultancy is one of the fastest growing business-to-business sales sectors in the UK, with services to SMEs as a key growth area.

Third parties and the use of external services might affect the costs positively or negatively. On the one hand, competent advice on specific health and safety issues, where this is not already available in-house, is likely to be cheaper for enterprises. On the other hand, third parties are increasingly imposing their own health and safety requirements on businesses. More and more often, procurers, insurers and training providers demand health and safety assessments, compliance and/or forms of pre-qualification from clients that want to work with them. For many of the employers that face them, these requirements have become a significant source of health and safety bureaucracy.

SMEs in particular struggle to act as informed consumers of third party advice: knowing when – and when not – it is in their interest to buy in health and safety support. This is because they may not know what the law does – and does not – require. Thus, partially because of this lack of knowledge of their legal responsibilities, they are vulnerable to third parties who exaggerate what the law requires and/or the difficulties of self-compliance. Moreover, as mentioned earlier, SMEs are less likely to know what free advice and support is available and the cost of finding out what they need to do and what government advice is available can be high.

7.3.2 Triangulation of data sources

The previous section revealed that the different data sources consulted for assessing compliance costs often covered the topic in different ways – e.g. whether the costs were caused by the EU or national OSH provisions, or also by other regulation. Hence, the identified studies only assess fragments of the OSH legislation, e.g. only selected parts of some of the Directives. Furthermore, the included cost items are not always the same, and we did not identify any studies that explicitly distinguished between administrative costs associated with IOs and substantive compliance costs – nor did the interviewed EU and national stakeholders did not separate between administrative and substantive compliance.

This leaves us with rather fragmented data that cannot always be easily compared, which puts some limitations on the validity of findings from a triangulation exercise towards. With this in mind, we have as presented in the followed consolidated our findings via four cross-cutting themes regarding differences in compliance costs between: (1) Member States, (2) enterprises and (3) Directive and CPMs and (4) costs generated by overlaps and inconsistencies.
Differences between Member States

Our assessment of the implementation of the Directives in the Member States presented in chapter 4 suggests that compliance costs differ between Member States. One of the indications of this is that a few Member States have not transposed all Directives. We identified two reasons for non-transposition: the particular Directive is not relevant for a specific Member State (e.g. the vessels Directives are of no use to land-locked MSs which do not have ships sailing their flags) – and so there are inherently no compliance costs, the Member State has only transposed a former version of the current individual Directive – and so the enterprises may be subject to different obligations in different Member States.

Such Member State differences in obligations and compliance costs are also encouraged in that national legislations may impose different, more detailed or more stringent requirements than the minimum requirements laid down in the Directives. The Country Summary Reports identified many such instances. For example, regarding the Construction Directive, several Member States require a signed document for the appointment of a health and safety coordinator for a construction site and of his/her acceptation (whereas Directive 92/57/EEC (construction) only requires this appointment). Another example is the requirement that undertakings carrying out demolition or asbestos removal work should be in possession of an official licence (while Directive 2009/148/EC (asbestos) only requires firms to provide evidence of their ability in this field). These requirements are likely to generate additional administrative costs.

Moreover, we identified more stringent requirements that might increase substantive compliance costs. For instance, four Member States have extended the scope to include personal protective equipment used by all or some of the emergency or rescue services, when this is excluded from the Directive scope (PPE Directive). Moreover, in relation to the Directive 98/24/EC (chemical agents), a considerable number (17) of Member States set more stringent limits for some substances, or have limits for substances for which there is no EU limit. Similarly, more stringent limit values have been identified in eight Member States, in relation to Directive 2004/37/EC (carcinogens or mutagens). For more information on more detailed/stringent requirements, we refer to section 4.1.2. It should, however, be noted that not all detailed/stringent requirements are likely to impose higher compliance costs; some simply provide additional information and/or definitions. Moreover, many Member States already had OSH provisions in place before transposing the Directives (and some included more stringent requirements).

ESENER-2 also supports the assessment that compliance vary considerably between Member States. For instance, according to ESENER-2, 76 % of all enterprises in EU-28 carry out risk assessments on a regular basis, but compliance range from 94 % of establishments in Italy and Slovenia down to 37 % in Luxembourg (cf. section 4.3). Similarly, from consulting national stakeholders, we have found Member State differences in the amount of support available to enterprises, e.g. in terms of accompanying measures to aid a correct and effectively implemented legislation could reduce compliance costs for enterprises. Furthermore, differences in the use of derogations and transitional periods might also influence compliance cost (the use of derogations and transitional periods is described in detail in section 4.2). This said, the assessment of the effectiveness does not find evidence that neither derogations nor transitional periods have had an effect on the health and safety impacts of the Directives. Moreover, the general opinion expressed in the national stakeholder interviews is that, generally, the derogations constitute necessary exemptions that permit establishments to maintain compliance with the nationally transposed Directives. These findings do not allow us to draw any conclusion on the effect on compliance costs.
Finally, our analysis shows that most of the Member States follow a common structure, whereby the main principles and requirements are transposed in one single act, usually the framework law on OSH. This national framework legislation was not necessarily newly adopted after the entry into force of the Framework Directive; it is often the case that existing OSH legislation has been brought together into one main OSH Act or that an existing OSH Act has been amended to comply with the Framework Directive. A few other Member States (5) have adopted another approach, whereby the main principles and requirements are split between different laws. However, such instances are generally linked to the way legislation is shaped in a given country, and the main requirements and principles set in the Framework Directive are still transposed through primary legislation (129). Thus, the findings do not indicate that some Member States have transposed the legal requirements in a more or less cost effective manner.

Differences between enterprises

Our analysis shows that the majority of obligations fall on enterprises. Thus, we can with some certainty say that the Directives primarily generate compliance costs for employers. In this regard, it should be noted that the results from the OECD (2014) study from Greece show that a high proportion of the administrative cost are business-as-usual, and that these costs would exist without legislation. This suggests that the actual administrative burden is rather low. However, these findings are only related to one Member State. Moreover, CEPS (2013) have criticised the SCM methodology for being arbitrary, because it is unclear to what extent enterprises differentiate between what is business-as-usual and what is not.

The findings from this evaluation strongly suggest that compliance and compliance costs are likely to vary considerably between enterprises, because the Directives seldom stipulate how or how often obligations should be fulfilled. Many Directives are designed in a goal-oriented manner with emphasis on what is to be achieved with the implementation of Directives (without quantitative targets), and Member States and establishments therefore have a large degree of flexibility in choosing how to reach required safety and health standards at work places. Furthermore, as outlined in chapter 4, the assessment of compliance ideally involves the assessment of two equally important aspects of compliance: quantity and quality. Thus, on the one hand, such an assessment entails measuring the share of establishments that implements specific requirements. This is measured quantitatively, most often by means of surveys, and is a prerequisite for OSH compliance. On the other hand, compliance is not achieved solely by producing the required output, such as through the formulation of an OSH management plan. The plan may be incomplete, may lack essential elements, might not take all risks into account etc., all of which undermines compliance, since the Directives contain requirements which are essentially quality and content oriented rather than activity oriented.

While we expect compliance costs to be higher in enterprises that fully comply with the legislation compared with the non-compliant enterprises or enterprises with a low level of compliance, high costs could also contribute to non-compliance or low compliance, for instance if enterprises assess that some obligations are too expensive and time consuming. However, the analysis of compliance shows that the most cited reason for not conducting risk assessments among non-compliant enterprises is not, as could be expected, that this obligations is perceived to be too burdensome.

(129) Primary legislation is law adopted by the legislative branch. This contrasts with secondary legislation, which is usually adopted by the executive branch. Secondary (or delegated) legislation (i.e. statutory instruments, which have different appellations such as Orders, Regulations, Rules, Decrees) must be authorised by primary legislation, and conform to the boundaries it has laid down.
Rather, the most cited reason for non-compliance is that the enterprises believe that workplace hazards and risks are already known; or they simply believe themselves to have no major OSH problems. This implies that the enterprises perception of relevance might be an important factor for compliance. However, based on this information alone, we cannot rule out that the perceived costs have an effect on compliance.

Based on the findings described above, we assess that cost estimates that do not counter in non-compliance are likely to overestimate the actual costs generated at the societal level. This might be particularly prudent when assessing whether costs are distributed disproportionally across SMEs and large enterprises. However, the data points to a rather paradoxical situation regarding SMEs. On the one hand, the analysis of compliance shows that, in general, SMEs are less compliant. On the other hand, SMEs are also likely to experience higher compliance costs compared to other enterprises (It should be noted that we only identified one study that compared costs across different sizes of enterprises). There might be many factors that explain why SMEs experience both higher costs and lower compliance at the same time. Firstly, the evaluation showed that SMEs often lack specific criteria that can provide them with reassurance of their compliance that might lead to over or under compliance. Secondly, SMEs may not know where to look for guidance, including free support from local and national authorities. Thirdly, SMEs more often rely on external experts for help and often find it difficult to assess the quality of this help (e.g. external consultants might generate more costs, because SMEs are not aware of what is actually required by the law and what is not).

Differences across Directives and CPMs

The EU stakeholders expressed the opinion that administrative costs, in general, stem from complying with national legislation rather than the OSH acquis. The national stakeholders, however, did not share this viewpoint. The identified studies (based on the SCM) did not distinguish between costs stemming from national and/or EU legislation, and we can therefore not draw any firm conclusions in this regard. In other words, it is not straightforward on the basis of the available sources to consistently attribute compliance costs to Directives and further to the CPMs.

Our analysis indicates, however, that all Directives are likely to generate substantive compliance and administrative costs, and that the CPMs primarily generate administrative costs in terms of labour costs. According to the SCM, the average costs of the required administrative activity are estimated as the Price (P) multiplied with the Quantity (Q), that is, the total number of activities performed per year. The Price is estimated by multiplying a tariff based on the average labour cost per hour including overheads and the time required per action. The Quantity can be calculated as the frequency of required actions multiplied with the number of enterprises. Thus, the number of enterprises that must comply with the legislation could indicate those provisions and Directives that are likely to generate the highest costs for society. Thus, it is likely that the general Directives and the CPMs will generate the highest compliance costs, simply because they are applicable for most enterprises. This is also the conclusion in some of the sources from the literature review. For instance, a study conducted by the HSE in the UK finds that general provisions, such as risk assessments, are likely to generate higher costs for society.

It should be noted that this might not be the case from the enterprise perspective. Some obligations might be rather costly for the individual enterprise, but because the obligation only applies to a small sector or industry, the total cost from the societal perspective can be quite small, and vice versa. This might also explain why EU and national stakeholders do not identify risk assessment as the most costly CPM.
Assuming that non-compliance will not generate costs for enterprises, the level of compliance might also give some indications regarding the magnitude of costs. The analysis of compliance (presented in section 4.3) shows that the level of compliance varies significantly from Directive to Directive and from CPM to CPM. Even within the framework of the same Directive, the level of compliance varies significantly from Member State to Member State and from CPM to CPM, and follows no clear pattern. For instance – according to the limited data available in the Member States – the level of reported compliance with the individual CPMs of the Manual Handling Directive ranges in compliance from 8% to 90% in enterprises. Likewise, compliance with the Biological Agents Directive varies from sector to sector, as establishments that are intentional users or handlers of biological agents have a much higher level of compliance than establishments that do not have biological agents as their core business.

Another example is the Drilling Directive, which is complied with to a large extent, partly on account of the Directive provisions, partly spurred on by the self-interest of the often large establishments that operate in the sector. In contrast, the AOR Directive is characterised by a low level of compliance in Member States, as the issue of artificial optical radiation is regarded as a complex issue. Employers within this field find the technicalities and acquired competency to measure, monitor and assess difficult to understand and/or attain. This paints a rather complex picture, which makes it difficult to draw conclusions.

Compliance costs related to overlaps and inconsistencies

Finally, our analysis of costs arising from overlaps and inconsistencies in legislation draws on the findings presented in chapter 8. From a legal perspective, the analysis on the internal coherence of the 24 OSH Directives did not identify major coherence issues. There are no contradictory provisions and very little overlap between the OSH Directives. The legal articulation between OSH Directives through in-built mechanisms (e.g. specific scope, ‘without prejudice’ clauses, exemptions, and the lex specialis principle) has, in most cases, contributed towards reducing overlaps and contradictions between provisions, as explained in chapter 8. Furthermore, among those overlaps identified, the majority do not, legally, result in double regulation (e.g. double reporting requirements).

However, the analysis of the interlinkage of the CPMs across Directives reveals that the collected OSH legislation is unnecessarily complex, in part, due to a seemingly unstructured and unsystematic inclusion (or lack thereof) of CPMs into the individual Directives. These problems are often transferred into the national legal frameworks, preventing a fully coherent and cohesive approach. This, in turn, has caused some confusion at the enterprise level, and particularly amongst SMEs, leading to misinterpretations of the provisions of legislation or Directives and, according to some OSH experts, some unnecessary duplication of effort. Thus, whilst the overlaps might not legally result in double regulation, the practical implications might result in higher compliance costs.

7.3.3 Conclusions on compliance costs

The aim of this section was to assess what costs arise for society, workers, and employers as a result of fulfilling the requirements (including compliance costs and administrative burdens). The analysis shows that all Directives are likely to generate both substantive compliance and administrative costs. We classified almost all of the CPMs as information obligations (generating administrative costs). Moreover, we also assessed that the main cost category related to these obligations is labour cost. Finally, we found that the substantive obligations (stemming primarily
from the KRs) will generate costs as a results of the following main group of activities (mechanisms):

› Obligations that requires enterprises to change/alter the way the work is organised (work organisation);
› Obligations that requires enterprises to invest in safety equipment (safety equipment); and
› Obligations that requires enterprises to change physical working aspects, like equipment or workstations (physical aspects of work).

The costs generated by these activities are likely to include a range of different cost categories including labour costs (especially for reorganisation work), equipment and supplies (especially for safety equipment) and outsourcing costs (e.g. for preventive and protective services).

Based on the analysis of the different types of obligations, it is not possible to estimate the actual monetary costs or estimate the time used. This is because the Directives generally do not specify how or how often obligations should be performed. Thus, to make such an assessment other sources are needed.

We outlined the different methodologies for assessing cost, explaining that most methods (including the SCM) require that data is collected from enterprises. In this evaluation, we did not interview enterprises, thus we had to rely on data from interviews with EU and national stakeholders. These stakeholders, however, were not able to provide a quantitative assessment, and most of the stakeholders did not distinguish between administrative or substantive compliance costs. Likewise, we also encountered challenges regarding the literature review, which showed that our current knowledge is limited and fragmented. This means that it is not possible to directly compare the results from the studies, because they differ in methodology and because they cover different pieces of legislation, IOs and Member States. However, the available data leads us to the following conclusions:

› The vast majority of administrative and substantive compliance obligations are directed at enterprises. Thus, it is most likely that compliance costs primarily fall on employers.

› The General Directives, especially the Framework Directive, and the CPMs target all enterprises, and are therefore likely to generate the highest costs (from a societal perspective). However, this might not be the case from the enterprise perspective. Some obligations might be rather costly for the individual enterprise, but because the obligation only applies to a small sector or industry, the total cost from the societal perspective can be quite small and vice versa. This might also explain why EU and national stakeholders do not identify risk assessment as the most costly CPM.

› The literature indicates that a substantial part of administrative costs are likely to be business-as-usual. Consequently, the actual burden is rather small. However, it should be noted that the assessment of business as usual has been somewhat criticized for often being conducted arbitrarily.

› The costs are likely to vary considerably from Member State to Member State and from enterprise to enterprise. Our analysis strongly indicates that workplace operations, working environments and modes of implementation strongly affect compliance costs. Firstly, the Directives do not specify how or how often they should be performed. Secondly, while most
Member States have transposed all the Directive into the national legislation, the analysis of compliance in enterprises shows that compliance varies considerably. As many cost models, like the SCM, are based on the assumption of full compliance, such studies might overestimate actual costs. This might especially be the case for SMEs.

The literature indicates that costs are likely to be higher in SMEs. It should be noted that this conclusion is based on one study from the UK. This study showed that while SMEs spent less (measured in absolute numbers) compared to large enterprises, the costs per employee is considerably higher.

Moreover, another study from the UK shows that external consultancy might have a strong effect on costs. In the evaluation of compliance, we found that the use of external consultants increases inversely according to enterprise size. The reason might be that larger enterprises more often have the competency in-house. However, this also means that the third sector is likely to play a considerable role for costs of compliance among SMEs. It is not possible to draw any definitive conclusion in this regard, as external consultancy could both positively and negatively affect costs. In the UK, the third sector is one of the fastest growing sectors and their relevance in the future is therefore likely to increase.

Whilst overlaps and inconsistencies have not resulted in double regulation from a legal perspective, the practical implications for enterprises might result in higher compliance costs due to confusion.

Finally, the general experience from conducting the literature review is that there is a lack of national and EU-level data on compliance costs arising from the OSH legislation. The lack of EU-level data are likely to be related to methodological challenges. Moreover, while we distinguished between administrative and substantive compliance costs, following the SCM, this model has been heavily criticised e.g. for being very imprecise and for assuming full compliance. Moreover, the ETUI also challenged whether the model can be applied for OSH legislation. More specifically, the ETUI questions whether legal requirements can be translated into substantive compliance costs and information obligations (administrative costs and burdens). In accordance with the SCM, we categorised most CPMs as IOs. However, we agree that these obligations are the cornerstones in the OSH acquis. In this sense, the differentiation is somewhat artificial and do not reflect the interconnectedness of the requirements. Moreover, it is also an important of the different costs models, like the SCM, do not consider the benefits of the requirements.

7.4 Benefits, broader effects and side-effects

The aim of this section is to assess what benefits arise from the OSH acquis (related to the health impacts) and to what extent the acquis generates broader effects and side effects for society and the economy. As we have outlined previously in section 7.1.2, assessing benefits stemming from the OSH activity is very challenging. First of all, data on the effectiveness on health and safety impacts is the cornerstone in an assessment of the economic benefits and careful assessment is necessary to ensure that observed benefits are attributable to the specific intervention, programme or legislation. Faulty assumption on type of causality can have serious repercussions on the validity of the results. Moreover, a specific challenge in assessing costs and benefits of OSH interventions is that while costs are incurred immediately, benefits are harvested at a later point in time and. This is especially the case when considering long-latency diseases, such as cancer (EU-OSHA, 2014f).
The assessment of benefits builds on the effectiveness evaluation presented in chapter 1. Clearly, the economic benefits depend on whether the acquis generated health impacts in terms of reducing accidents and/or ill health. In brief, the evaluation on the effectiveness has shown a reduction in the number of workplace fatal and non-fatal accidents. This reduction, however, can be attributed to a range of different factors, including structural labour market changes, such as, change of jobs from high-risk economic sectors to lower risk tertiary sectors.

The trend in occupational diseases is less promising and the analysis of the major causes of occupational diseases are likely to remain, such as psychosocial job strain. Moreover, a particular concern is the increasing number of cases of sick leave due to stress or musculoskeletal disorders (MSD) (not sufficiently covered by the OSH acquis).

To estimate the monetary benefits, we have interviewed national and EU stakeholders and reviewed the literature.

The assessment of broader effects and side effects includes effects that go beyond health and safety impacts. These effects include:

› Agenda setting, influencing national priorities and motivation of workers
› Learning, innovation, quality of production/services
› Employment, competitiveness, higher productivity and economic growth

These effects were therefore not covered in the assessment of effectiveness in chapter 6. The evaluation of the implementation in Member States (Chapter 4) and some of the individual Directive Reports have provided some valuable inputs indicating that the acquis might have generated broader effects as well as potentially unwanted side effects. However, the primary source for the assessment of the broader effects and side effects is interviews with national and EU stakeholders and the literature review.

This section follows a different structure that section 7.3 on compliance costs, because the analysis is based on a different approach. This section is divided into three sub-sections: First we present the findings from the interviews with the EU and national stakeholders, followed by the analysis of the literature review. Finally, we triangulate the data sources and draw on the findings from the analyses of the effectiveness and implementation as well as findings from the Directive Reports.

7.4.1 EU and national stakeholders’ viewpoint

We asked the EU stakeholder to assess the benefits and the broader effects. These assessments represent subjective evaluations that cannot be quantified in economic terms. Moreover, while the stakeholders generally assess that the OSH acquis has generated health and safety impacts, the stakeholders were generally more uncertain about the extent to which the Directives have generated broader effects. A more detailed analysis of these assessments is presented separately for benefits and broader effects in this section.

Benefits

The analysis on the Directives’ effectiveness showed that the majority of both national and EU stakeholders assessed that the OSH acquis has contributed positively to the safety and health of workers. Moreover, the stakeholders emphasised the importance of risk assessments (although national stakeholders more often than EU stakeholders emphasised the importance of risk
assessments). Finally, the interviews with national stakeholders showed that interviewees felt that injuries and ill health at work might be particularly burdensome to SMEs as major work accidents could result in closure, whereas this is not likely in the case of large enterprises.

**Broader effects**

Figure 7-5 shows the national stakeholders assessment of broader effects. The figure shows that the national stakeholders rate motivation of workers, agenda setting and learning highest. Some differences are seen between different groups of stakeholders and the figure shows that they in general assess these benefits to be small to moderate.

Not surprisingly, the largest impact – but probably least wide ranging – is that of increased awareness and knowledge about occupational safety and health, which is the conclusion of all national stakeholders. This impact has, for example, materialised through the incorporation of accident prevention and safety and health issues into the curriculum in various apprenticeship training programmes. Furthermore, it has materialised via public OSH related databases, which have grown in both scope and number.

The broader or long-term impacts such as productivity, competitiveness and employment are almost equally valued, while there are fewer expectations to innovation. Some stakeholders also argue that gains to competitiveness can be negative, this is especially the case in Member States where the degree of compliance with the legislation is very low. It is also an issue facing micro establishments and SMEs, as the degree of compliance in smaller companies tends to be low. Non-complying small enterprises can, thus, gain a competitive edge in comparison to their complying counterparts; and hence skew competition.

*Figure 7-5 Extent to which the transposition of the Framework Directive has contributed to broader effects in society according to national stakeholders*

Source: Member State interviews.

Note: Average stakeholder scores, across all Member States, to the question: ‘To which extent do you consider that the implementation of the legislation transposing the Directive(s) you are commenting on has contributed to creating broader/unintended effects in society? (rate on a scale of 1-5)’. 
The EU-stakeholders also report several broader effects of the OSH Directives:

- Stakeholders representing employer organisations often report that compliance with the Directives leads to improved company image and employment.
- Stakeholders representing worker organisations report that compliance with the Directives leads to higher motivation of workers.
- Stakeholders representing authorities assess that the Directives ensure more people in the labour force.

### 7.4.2 Findings from the literature review

The aim of the literature review was to assess what types of benefits and broader effect that are most likely to arise as a result of the OSH *acquis* and for whom. Moreover, we specifically looked for studies focusing on SMEs. The literature review, however, revealed that the number of studies quantifying the benefits and broader effects of health and safety is limited. The literature on broader effects is particularly scarce, and we only identified two quantitative studies. The paucity of studies that actually empirically sets out to measure a relation between OSH legislation/activities and productivity, competitiveness etc. hampers our ability to draw solid conclusions.

Moreover, while we primarily searched for benefit studies conducted at the EU-level, most studies were conducted at the national level. Clearly, the lack of European studies is a major shortcoming, as this limits transference of findings. Moreover, it is important to note that the studies do not present estimates of avoided costs (rather the total costs of work-related accidents and ill health).

Finally, we did not identify any CBA studies (or other types of full economic evaluations) of OSH legislation – at either Member State or European level. We did, however, identify several reports and scientific studies assessing both costs and benefits from the enterprise perspective (profitability studies). These studies do not directly relate to specific pieces of OSH regulation, rather, specific interventions, which could be categorised as preventive and protective measures under the *acquis*. For more information on the literature review, we refer to section 7.2.2).

### Costs of work-related accidents and ill health in Europe – at a glance

As reported earlier there is a lack of EU-level estimates of the cost of occupational accidents and ill health in general. In 2003 Eurostat (2004) conducted a pilot study to estimate the costs of accidents based on data from LFS and ESAW and a survey among companies and victims of accidents at work (not work-related illness). Eurostat estimated that in year 2000, the cost of accidents at work stand at EUR 55 billion in the EU-15, corresponding to 0.64 % of GDP. This was a pilot study, however, and the authors reported several shortcomings in the methodology (as described in section 7.2.2).

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(130) We also looked for ex-ante evaluations, but we did not find any. This might relate to the fact that most of the Directive was adopted more than 20 years ago.
However, we did identify estimates from different Member States (measured as the share of GDP). These findings are presented in Table 7-16, which is based on estimates presented at a technical meeting that brought together experts to explore means to estimating the costs of poor occupational safety and health at the EU-28 level (131). The meeting built on EU-OHSA’s project ‘Estimating the cost of accidents and ill health at work’. These estimates show a large variation between MSs in the economic burden resulting from accidents and ill health (ranging between 1-3 % of GDP). Note that the methods and cost models to derive an estimate for the individual countries vary considerably (for instance, the estimates do not include the same cost categories). Moreover, as shown in the table, the estimates cover different years. Therefore, we caution against comparing these estimates directly.

Table 7-16  Occupational accidents and ill-health costs as percentage of GDP

<table>
<thead>
<tr>
<th>MS</th>
<th>Estimate</th>
<th>% share of GDP</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>3.0</td>
<td>2004</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>2.0</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>1.7</td>
<td>2004</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>1.0</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>3.5</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>3.1</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>2.7</td>
<td>2008</td>
<td></td>
</tr>
</tbody>
</table>


These figures, however, show that the costs of work-related accidents and ill health puts a considerable economic strain on society. Today, the costs of disability following work-related ill health stems primarily from MSDs and mental health problems. For instance, in the Netherlands, Koningsveld (2003) estimated (in 2001) that these diagnoses are responsible for 83 % of the cost of work-related ill health: MSDs (43 %) and psychosocial disease (40 %). Other diagnoses resulting in relatively high costs are: heart and vascular disease (5 %), nervous system, including the eyes and ears (4 %), and occupational accidents (4 %).

According to OECD (2010), several MSs experienced a rise in the number of disability claims because of mental health problems. Thus, mental health problems are now the biggest single cause for a disability benefit claim in most countries and accounts for almost half of all new claims in Denmark, the Netherlands, Sweden and Switzerland. One major explanation for the increasing number of inflows into disability benefits on grounds of mental health conditions can be attributed to changes in the workplace that have increased the prevalence of work-related stress.

Costs of work-related accidents and ill health by type, stakeholder and severity

In the section, we look more specifically into costs by type, stakeholder and severity. All of the identified studies are based on national estimates and, because of the paucity of studies, we also included studies from a non-MS (Australia). The transferability of these studies to Europe might be questionable, and we therefore present the findings according to the country of origin.

Moreover, we explained that we (in accordance with an EU-OSHA report) distinguish between the following types: productivity costs, healthcare costs, quality of life losses, administrative costs and insurance costs. In the context of benefits, costs refer to avoided costs following reductions in work-related accidents and ill health. However, it is important to note that the literature typically use different definitions and classifications of benefits.

Finland

The Ministry of Social Affairs and Health in Finland (2014) estimated the total costs of direct and indirect costs due to occupational accidents and ill health. However, the Ministry of Social Affairs and Health used a different categorisation of direct and indirect costs than that of the HSE. The Ministry defined direct costs as lost labour input and health care costs, whereas indirect costs included all other costs, such as lost production, loss of sales, image losses etc. Based on insurance data, the Ministry of Social Affairs and Health estimated the total indirect costs at EUR 487 million in Finland. Moreover, the Ministry noted that currently no reliable ratio between direct and indirect costs exists, but that a conservative estimate implies that the indirect costs are 3-4 times higher (the report, however, does not specify how this ratio was produced).

UK

The HSE in the UK also estimated costs of workplace injury and ill health. Table 7-17 shows the appraisal values representing the aggregated costs for society per case (2012 prices). The HSE also estimated costs specifically for workers and employers (data not shown in the table). Whilst the appraisal values reflect a broad range of cost categories, for simplicity of presentation the appraisal values can be divided into two main component costs: non-financial human costs and financial costs. Non-financial human costs represent quality of life losses and financial costs are the sum of the following:

- Net lost income, taking into account the offsetting of transfers from one party to another, e.g. benefits payments are a cost to Government, but an equal and opposite offsetting benefit to individuals;
- Cost of insurance and less compensation pay-outs to individuals;
- Production disturbance costs, such as cost of recruitment and work reorganisation;
- Health and rehabilitation costs, such as NHS costs; and
- Administrative and legal costs, such as costs of administering benefit claims.

Table 7-17  Unit values for workplace injuries in the UK

<table>
<thead>
<tr>
<th>Cost to society per case - average appraisal value estimates in Euro (£ in 2012 prices)</th>
<th>Non-Financial Human Costs (rounded)</th>
<th>Financial Costs (rounded)</th>
<th>Total Costs (rounded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal injuries</td>
<td>1,558,200 EUR (1,113,000£)</td>
<td>623,000 EUR (445,000£)</td>
<td>2,181,200 EUR (1,558,000£)</td>
</tr>
<tr>
<td>Non-fatal injuries (7 or more days absence)</td>
<td>27,720 EUR (19,800£)</td>
<td>13,580 EUR (9,700£)</td>
<td>41,160 EUR (29,400£)</td>
</tr>
<tr>
<td>Non-fatal injuries (up to 6 days absence)</td>
<td>532 EUR (380£)</td>
<td>756 EUR (540£)</td>
<td>1,274 EUR (910£)</td>
</tr>
<tr>
<td>Ill-health (7 or more days absence)</td>
<td>26,600 EUR (19,000£)</td>
<td>23,520 EUR (16,800£)</td>
<td>50,120 EUR (35,800£)</td>
</tr>
<tr>
<td>Ill-health (up to 6 days absence)</td>
<td>460 EUR</td>
<td>784 EUR</td>
<td>1,190 EUR</td>
</tr>
</tbody>
</table>
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>absence</th>
<th>£290</th>
<th>£560</th>
<th>£850</th>
</tr>
</thead>
</table>

Source: HSE. [http://www.hse.gov.uk/economics/eauappraisal.htm](http://www.hse.gov.uk/economics/eauappraisal.htm)

Figure 7-6 shows the trend in the cost of workplace injuries and ill health in the UK from 2006/07 to 2012/2013. The figure shows that costs have fallen by 14% since 2006/07, reflecting downward movements in the number of cases. The total cost shows signs of levelling off in recent years. Although these numbers might not be directly transferrable to the whole EU, they give an indication that the decreasing trends in accidents have been followed by a considerable cost savings. Moreover, HSE found that whilst non-fatal injuries and work-related injuries resulting in under six days of absence from work account for 65% of cases, their contribution to total costs is small (less than 5%).

Figure 7-6 Costs to Britain of workplace injuries and new cases of work-related illness, 2006/07 to 2012/13 (2012 prices)

Source: Costs to Britain of workplace fatalities and self-reported injuries and ill-health 2012/2013
Note: Costs for 2006/07, 2007/08, 2008/09 and 2012/13 are shown in dark grey and include an error bar to show the 95% confidence interval around the estimate. Cost estimates for 2012/13 are independent of cost estimates for 2006/07-2008/09 and can be reliably compared to these.

Figure 7-7 shows that non-financial human costs (which we refer to as quality of life losses) account for 57% of total costs of workplace injury and ill health. Productivity losses (which we refer to as indirect costs) accounts for 31% of total costs, followed by health and rehabilitation costs (6%), administrative costs (1%) and compensation (4%), which we refer to as insurance costs.
Moreover, Figure 7-8 shows that costs vary according to stakeholders: 57 % of the total costs fell on the workers, whilst 23 % fell on government and 20 % on the enterprises. Moreover:

› Non-financial human costs account for almost all the costs borne by workers. The financial losses arising from lost income, healthcare costs and administrative costs are offset by the compensation payments received (note that the compensation costs for workers shows as negative, since it is an inflow for the worker).

› The major costs to employers arise from productivity costs (equivalent to the occupational/statutory sick pay payments made) and Employers Liability Compulsory Insurance premiums.

› Lost income, in terms of state benefits paid and lost tax receipts accounts for around three-quarters of government costs, with the majority of the remainder attributed to ‘Health and Rehabilitation’ costs (incurred through the National Health Service funding).
Australia

We also identified a large study from Safe Work Australia (2012) on the cost of work-related injury and ill health. The findings are not directly comparable to the estimates from HSE, because Health Work Australia used a different methodology and included different cost categories including:

› production disturbance costs – costs incurred in the short term until production is returned to pre-incident levels;
› human capital costs – long-run costs, such as loss of potential output, occurring after a restoration of pre-incident production levels;
› medical costs – costs incurred by workers and the community though medical treatment of workers injured in work-related incidents;
› administrative costs – costs incurred in administering, compensation schemes, investigating incidents and legal costs; and
› transfer costs – deadweight losses associated with the administration of taxation and welfare payments, and other costs (includes costs not classified in other areas, such as the cost of carers and aids, and modifications).

Safe Work Australia (2012) estimated that only 5 % of the total costs fall on employers (compared to 23 % in the HSE study), whereas 74 % fall on workers and 21 % on the community/society \(^{(132)}\). Finally, the average cost to the individual worker is considerably higher for work-related diseases ($143,500) than for an injury ($46,100). In contrast, the cost to the community is not as dependent on the type of incident ($19,700 per incident for injury compared with $23,400 per incident for disease).

\(^{(132)}\) The report does not specify the term community/society. However, as the community/society is listed as a distinct cost bearer, we assume that this is equivalent to government...
Figure 7-9 shows the percentage of the cost of work-related injuries and ill health for Australian employers, workers, and the community/society in 2008/09 by severity of cases. This figure shows that the share of costs borne by the individual worker and community rises sharply with severity. Employers and the community bear most of the cost of short-term injuries and diseases, whilst costs shift to workers as the level of severity increases. The majority of economic costs associated with full incapacity are borne by the community, through social welfare and other support schemes, and loss of potential.

Finally, the average cost to the individual worker is considerably higher for work-related diseases ($143,500) than for an injury ($46,100). In contrast, the cost to the community is not as dependent on the type of incident ($19,700 per incident for injury compared with $23,400 per incident for disease).

Figure 7-9 Distribution of total costs of work-related injury and illness by severity category 2008-09 in Australia

![Chart showing percentage of total costs by severity category]

Source: Safe Work Australia (2012). The cost of work-related injury and illness for Australian employers, workers and community: 2008-09

Furthermore, Safe Work Australia (2012) showed that, in the period 2000-01 to 2008-09, the proportion of costs borne by workers increased, while the proportion of costs borne by government decreased. This difference is mainly accounted for by the growth in average weekly earnings and the effect this has on human capital costs and the distribution between worker and government. Thus, the share of costs borne by the worker and community rises with severity, whereas the employer bears most of the costs of short-term injuries and diseases.

SMEs
Quantifying benefits for SMEs has proven to be a very difficult task, because SMEs rarely track the costs and benefits of initiating OSH initiatives. Instead, OSH is often an integral part of
management. However, the costs of work-related accidents and ill health are a particular concern for SMEs. A serious incident can lead to closure of a business due to the direct costs of dealing with the incident or the loss of contracts/custumers. For example, 60 % of companies that have a disruption which lasts for more than nine days go out of business (European Parliament, 2010). Thus, it is usually more difficult for SMEs to recover from a serious accident, because key workers cannot easily be replaced and because short-term interruptions to business can lead to dissatisfied clients/breach of contract (European Parliament, 2010).

Despite that the burden of occupational injury and ill-health might be a particular concern among SMEs, recent research shows that SMEs are less likely to perceive that injuries and ill-health are a substantial cost compared to large enterprises. A survey among 300 SMEs and 80 large companies show that only 10 % of SMEs reported that injuries represent a substantial business cost (compared to 56 % of large companies). Most of the SMEs were unsure about the financial impact of work-related illness.

The SMEs did not measure costs related to injuries, and only 12 % of SME representatives recognized the benefits of costing health and safety failures, whereas two-thirds of those from large organizations recognized some benefit in measuring cost. Finally, the survey also showed that health and safety investments are driven by a range of different factors (not just cost reduction) and that human cost is also an important consideration for SMEs (Haslam, 2010).

**Broader effects**

As explained earlier, we only identified two studies (from BenOSH and ISSA) that assess broader effects of OSH. Figure 7-10 shows results from the ISSA (2013) report on how enterprises assess the direct and indirect effects on OSH activities (the majority of which were non-MS). The results are based on quotations from 300 companies from 16 different countries (of which the majority are non-European countries). Note that the figure includes both broader benefits as well as direct and indirect financial benefits. The enterprises score the impact on increased hazard awareness, reduced hazards, reduced breaches and reduced accidents highest.
Based on two previous studies, the BenOSH study also looked into the relation between health and economic performance. The first study by Ridge et al. investigated the link between health and economic performance including GDP, growth, productivity and the level of employment. The study showed that if the proportion of people with ill health increases, economic growth would slow down. Furthermore, work-related factors play an important role, since 11% of the impact of general health on economic performance is attributable to work-related ill health.

The other study by Suhrcke et al. found that health is a strong predictor of economic growth. Health leads to economic growth by increased savings, investment in human capital, labour market participation, foreign direct investment and productivity growth. However, the relation and influence of health on economy (and economic growth) is complex. It is clear that human capital is necessary for a successful economic outcome, and since health is an important component of human capital, it has an influential effect. At the same time, economic constraints (job insecurity, etc.) in turn effect worker health. These mechanisms make it difficult to determine the impact of health on the economy (European Commission, 2011).

Figure 7-11 shows that countries with the best records on accidents at work are the most competitive. According to the authors of the BenOSH study, this shows that poor working conditions put a heavy burden on the economy and hinder economic growth.
Figure 7-11 Competitiveness and accidents at work

Source: ILO, 2006


Notes: The graph is based on data from the World Economic Forum and the Lausanne International Institute for Management Development (IMD), coupled with data from the ILO.

Business cases: costs and benefits from the enterprise perspective

While the above analysis looked into the costs and benefits of OSH actions for enterprises, workers as well as for the society as a whole, the focus in business cases is inherently on the enterprises. Furthermore, the focus in business cases is not directly on the costs and benefits of complying with the safety and health requirements provided for by the OSH acquis, but on the costs and benefits of voluntarily taking safety and health actions – i.e., from the perspective that it actually may be profitable for a given enterprise to do so.

Hence, it could be argued that such business case analysis is outside the scope of assessing the impacts of the OSH acquis. However, it should at the same time be acknowledged that not all enterprises may take the safety and health actions that could be profitable for them, simply because they are not aware of the possible positive return on such actions. It could then be argued that increasing this awareness does not necessarily call for legislative action, but could be achieved via providing more guidance to the enterprises. However, it should then be acknowledged that there are many enterprises who are not aware of existing guidance, who do not have the skills to use guidance, or who are not inclined to resort to guidance when considering improvements to safety and health. Hence, it could be expected that legislative actions may force, or rather encourage, such enterprises to take profitable actions – and in this context, it could be expected that the OSH acquis has had such positive influence.

Furthermore, from the perspective of future developments of the OSH acquis, the following business cases may inspire the Commission's future actions regarding how to address emerging risks, how to encourage improvements within the construction sector which remains a high-risk
sector, and how to ensure that also SMEs take all the necessary safety and health actions. To do this, we analyse five business cases with the following headings:

› MSD – as musculoskeletal disorder is considered an emerging risk that exists in many sectors, and that today is only specifically covered by the Manual Handling Directive.

› Work-related stress – that apart from the Framework Directive, only is referred to in the DSE Directive in the form of mental stress.

› Aggression at work – that is not covered by any specific Directive, but in principle is covered by the Framework Directive.

› Construction – which already is covered by the Construction Directive, but where there still is room for improving safety and health at construction sites.

› SMEs – where the aim is to find better ways to ensure that the OSH *acquis* is appropriate for and complied with by SMEs.

As already mentioned, we analyse safety and health actions from the perspective of the bottom line of an enterprise. The bottom line measurements that we make use of are guided by those used in the literature consulted when developing the business cases – e.g. a profitability index or payback period:

**Profitability index** (PI) is defined as the presented value of expected cash flows divided by the costs of the initial action. A PI of one yields the internal rate of return, a PI of less than one suggests that the action should be rejected, and value greater than one suggests that the action should be taken. If there is a choice between two or more alternative safety and health actions, the one with the largest PI should be chosen.

› **Payback period** (PP) is the amount of time before the initial costs of the action are earned back, or the length of time required for cumulative incoming returns to equal the cumulative costs of an action. The PP is usually measured in years. A PP of 2 to 3 years is usually accepted in industry. Because of increasing uncertainty, the time horizon of economic decisions rarely exceeds a period of 4 years.

**MSD**

MSD is considered an emerging safety and health risk that, for example, causes back problems that lead to sickness absence and in the worst case causes disability that may lead to labour market departure. Several OSH Directives aim at preventing MSD, most specifically the Manual Handling Directive, which includes specific key requirements to avoid, or reduce, risks associated with manual handling of loads, including training of workers and ensuring preventive or protective services.

So far, the literature review shows that interventions that are based on a combination of several active components are most likely to be effective (Tullar et al., 2010). Tompa et al. (2009) conducted a review of the financial merits of ergonomic interventions. The review concluded that there was strong evidence of financial merit from ergonomic interventions in the manufacturing and warehouse sector, moderate evidence of financial merit in the administration and health care sectors and insufficient evidence of financial merit in other sectors.
EU-OSHA (2014f) reviewed existing case studies, including economic evaluations from the enterprise perspective. In total, the review identified 91 individual studies (of which eight case studies were conducted in the EU, whereas the majority of studies came from North America). That review found that the strongest evidence was for the profitability of ergonomic interventions and disability management programmes. Ergonomic interventions were also the most common type of intervention in the literature. Possible explanations of the profitability of ergonomic interventions might be related to the low costs of the interventions (training, simple equipment etc.), and the high relevance of ergonomics, because MSD is a major cause of absenteeism and low productivity (EU-OSHA, 2014f). For example, offering workers in a small German floor covering company back-strengthening training showed to have a PI of 1.71 and PP of only 2.16. Similarly, an investment by a Dutch window pane mounting company in new mechanical equipment (cranes, telescopic handlers and tower wagons), accompanied with safety training for the staff, reduced the absenteeism rate and led to almost zero occupational accidents. From the bottom-line perspective, this investment showed to have a PI of 1.40.

The BenOSH study (EC, 2011) has also analysed business cases which focus on preventing back pain in health care. Table 7-18 summarises the results of analysing three scenarios where actions are taken to reduce MSDs among hospital personnel, especially among nurses who lift and move patients. Actions include investments in equipment such as high-low beds and in training in lifting techniques. The conclusion from these scenarios is that the costs caused by work-related absenteeism must fall by more than 50 % to make the investments profitable from an enterprise perspective.

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>The total investment including 150 high-low beds that make is easier for nurses to move residents + training in proper use for 75 caregivers (EUR 125,430). The first scenario is based on the assumption that cost due to back pain could be reduced by 50 %</td>
<td>Same investment as scenario 1. This scenario is based on the assumption that cost due to back pain could be reduced by 60 %</td>
<td>The total investment includes the investment in high-low beds combined with a three hour training session on lifting and moving techniques (EUR 5,175). Based on this combination the calculation is based on the assumption that costs due to back pain is reduced by 70 %</td>
</tr>
<tr>
<td>A negative present value (PI: 0.98)</td>
<td>A positive present value (PI: 1.16)</td>
<td>A positive present value (PI: 1.05)</td>
</tr>
</tbody>
</table>

Note: Profitability index: PI (EUR returned for each EUR invested).

The MSD business case is therefore not convincing. Although the literature, as shown above, provides examples where actions make sense seen from the bottom line of an enterprise, returns on the investments are not that high. Hence, uncertainty regarding the size of the benefits may deter other enterprises from taking similar actions. This may then call for societal action (e.g. legislation) to make sure that MSD actions that have higher societal returns on the investment are made.
Work-related stress

Significant changes to workplaces over the past decades have resulted in new occupational safety and health challenges, including a faster work pace and more intense work periods. In addition, the economic crisis has resulted in increasing pressure being placed on both employers and workers to remain competitive (EU-OSHA, 2014g). This EU-OSHA report concluded also that appropriately planned and implemented workplace interventions, focusing on preventing stress, improving the psychosocial work environment and promoting mental health, are cost effective. Moreover, there is some evidence that positive work factors, such as work engagement and job resources, might be related to employee health and performance.

The BenOSH study (European Commission, 2011) presents also a business case on preventing stress in a small consultancy company employing 10 experts and administrative personnel. Table 7-19 summarises the results of analysing three scenarios. The outset or baseline for these scenarios was that the company experienced financial difficulties and one of the employees suffered a nervous breakdown and was off sick for 514 days. The company paid his salary for six weeks (EUR 7,020).

The question was then whether this nervous breakdown could have been avoided, and so how to avoid similar incidences in the future. The prevention measures considered for this were internal discussions in the company as well as training courses for the board and for the management to improve social relations and the collaboration in the company.

Such prevention measures are assessed to be difficult to directly ensure the use of via an OSH Directive. However, a focus on work-related stress may well be encouraged within the Framework Directive, e.g. by mentioning it within the context of the CPMs and by highlighting that prevention measures are likely to be low-cost measures. Such highlighting may be inspired by the high profitability suggested by scenario 2 in Table 7-19.

Table 7-19 Stress in a small consultancy company: a cost-benefit analysis from the enterprise perspective

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal discussion among staff and management on how to provide more support (250 EUR). The first scenario is based on the assumption of cost due to stress cases of 1 %</td>
<td>Same investment as scenario 1. This scenario is based on the assumption on a cost reduction due to stress of 5 %</td>
<td>Same investment as in scenario 1 and 2 plus an additional training course for the board and management (2,400 EUR first year, hereafter 1,200 EUR). The scenario is based on the assumption of a cost reduction of 30 %</td>
</tr>
<tr>
<td>A negative present value ( (\text{PI}: 0.93) )</td>
<td>A positive present value ( (\text{PI}: 3.39) )</td>
<td>A positive present value ( (\text{PI}: 1.16) )</td>
</tr>
</tbody>
</table>


Note: Profitability index: PI (EUR returned for each EUR invested).

Aggression at work

Aggression – including verbal and physical abuse – from clients and customers is a particular concern among human service workers. Exposure to aggression can have severe physical and mental consequences for the worker and might lead to sickness absence and disability. The
BenOSH study provides in this context a business case on the profitability of investing in prevention of aggression and violence against bus drivers. The case study was conducted in a large public transport company in Berlin (BVG). Annually, BVG recorded 200 annual assaults (mainly targeting security personnel and inspectors) which resulted in fewer than three days absence and 400 attacks which resulted in more than three days absence.

Table 7-20 shows that it was profitable for the bus company to organise de-escalation courses for all drivers. Such training included discussions of the situations that were experienced by the bus drivers, and role-plays provided the opportunity to test and practice the newly learned skills. In addition, the busses were equipped with video surveillance systems.

Similar to the prevention measures for work-related stress, it seems not straightforward to directly include such aggression-at-work measures in an OSH Directive. This said, they could be emphasised when interpreting the CPM requirements to workers’ consultation and involvement when establishing prevention measures, and to the training of workers.

Table 7-20  Prevention of aggression against bus drivers

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>The total investment included de-escalation courses for about 300 bus drivers. The first scenario is based on the assumption that cost would be reduced by 70 %</td>
<td>Same investment as scenario 1. This scenario is based on the assumption that cost could be reduced by 90 %</td>
<td>Same scenario as 1 and 2 + staff involvement in preventive activities, coordination with police and incident log/prevention guide. Based on this combination the calculation is based on the assumption of a cost reduction of 95 % in the long run</td>
</tr>
<tr>
<td>A positive present value (PI: 1.20)</td>
<td>A positive present value (PI: 1.50)</td>
<td>A positive present value (PI: 1.10)</td>
</tr>
</tbody>
</table>

Note: Profitability index: PI (EUR returned for each EUR invested).

Construction

The construction sector is characterised by a high incidence of accidents and workers exposed to risks such as slipping, stumbling, falling and loss of control of hand-held tools and objects. Furthermore, the construction sector reports the highest level of exposure to ergonomic risk factors, biological and chemical risk factors and noise/temperature risk factors. Traditionally, work in the construction sector has been rendered dirty, difficult and dangerous, contributing to the poor image of construction work.

The current OSH acquis includes a Construction Directive – that is also covered by this evaluation –that tailors the principles of the Framework Directive specifically to the construction sector and supplements it with more stringent and specific provisions. Hence, the Construction Directive lays down minimum requirements for the sector in order to increase the focus on the prevention of occupational risks.

The question within this business case analysis is thus partly whether safety and health actions required by the Construction Directive would have been taken anyway from the bottom-line
perspective of enterprises, and partly whether there are good, profitable actions that could inspire future revisions of the Directive.

EU-OHSA (2014f) found six economic evaluations that focused on the construction sector. As summarised in Table 7-21, many of the safety and health actions taken have short payback periods, which indicates profitability. The first case in the table was also used in the discussion of MSD-related actions above, where the conclusion was that training of workers in lifting may pay off. The second case, that has a PP of less than one year, indicates also a benefit from the training of construction workers (here, individual training sessions with a physiotherapist to reduce the impact of the physical workload, secure sufficient rest periods, and increase construction workers’ influence at worksites).

The remaining four business cases look into the payoff from investing in equipment that improves safety and health at work. This includes new mechanical equipment within a window pane mounting company (see also the MSD case above), tools to lift stone slabs during paving, and equipment to facilitate the transportation of heavy goods and debris at construction sites. The finding is that such equipment investments have payback periods well within what could be accepted by the employers.

The six business cases thus indicate that the focus on training of (construction) workers should be maintained in the OSH acquis, and that safety and health requirements, which may require the purchase of new equipment, will not necessarily be an economic burden for the affected enterprises.
SMEs

The final business case looks into the possibility of finding better ways to ensure that the OSH acquis is appropriate for and complied with by SMEs. This aim has arisen from the analysis in the previous section, where we assessed the costs and benefits from compliance with the OSH regulation. In short, we found that SMEs have higher compliance costs, but also may have higher benefits, because accidents typically will have more significant negative impacts on SMEs. However, small enterprises are less likely to measure the costs of accidents and less likely to perceive OSH as a financial investment. Many owners consider OSH an economic burden, which is too costly and unrealistic for small enterprises to implement. Moreover, accidents are, typically, a rare incident in most small enterprises, thereby supporting an ad hoc approach to safety and health (Hasle & Limborg, 2006). Thus, it should be kept in mind that, as SMEs have relatively small workforces, interventions targeting low-probability incidences (such as serious accidents) could possibly be underestimated as they are unlikely (EU-OSHA, 2014f).

EU-OSHA (2014f) reports on a number of business cases where the enterprises in question are SMEs. Some of these have already been covered by the construction sector business cases in Table 7-21. Hence, Table 7-22 concentrates in SMEs in other economic sectors – mainly manufacturing.

The first case in Table 7-22 concerns an ergonomic furniture factory in Lithuania, where an investment in air cleaning and supply systems that improved protection against dust, metal particles and welding fumes had a PP of only one year via improved productivity. Similarly,
improvements to air conditions in a German bakery led to the elimination of asthma cases and resulting sick leaves. Although the PP here was 3.40 years, this is not considered to be long time for getting rid of a respiratory disease.

The third case then shows that basic training in measures against slip and trip accidents and basic protective equipment in a German waste management company reduced accidents in a profitable manner. Similarly, road safety training in a German bakery reduced delivery accidents so much that the PP was less than one year.

In the fifth case, a Dutch cucumber producer found that the implementation of equipment to reduce physical strain in load handling led to significant improvements in job tenure and productivity. However, the PP exceeded four years. Finally, a Greek cheese producer experience a PP of two years when he introduced a reduction of manual handling of loads via automation.

Hence, together these six business cases show that there is much room for improving safety and health in SMEs without it being costly for the employers. However, it may well be argued that these cases are not only applicable for SMEs, but for all enterprises.

### Table 7-22 Examples of business cases in SMEs

<table>
<thead>
<tr>
<th>Sector</th>
<th>Description</th>
<th>Results</th>
<th>Payback period: PP (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Purchase of individual air cleaning and supply systems, in collaboration with workers</td>
<td>Improved productivity due to enhanced protection</td>
<td>1.00</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Implementation of equipment to reduce concentration of flour particles in the air</td>
<td>Elimination of baker’s asthma cases</td>
<td>3.40</td>
</tr>
<tr>
<td>Waste management</td>
<td>Training and improved PPE to reduce slip and trip accidents</td>
<td>Reduction in accidents (20 %)</td>
<td>1.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Training and issuing of Instructions</td>
<td>Reduction in delivery accidents (67 %)</td>
<td>&lt;1.00</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Implementation of equipment to reduce physical strain in load handling</td>
<td>Improvement job tenure, improvement in productivity</td>
<td>&gt;4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Use of lifting equipment and a film-stretching machine in the packaging sector</td>
<td>Reduction in back pain, improvement in productivity and reliability.</td>
<td>2.00</td>
</tr>
</tbody>
</table>


### Conclusion

The conclusion from the above business cases is that there are many safety and health actions that are profitable, as seen from the perspective of the enterprises. Such cases can inspire the OSH acquis regarding future revisions:

- The MSD case is not convincing, as uncertainty regarding the size of the benefits may refrain enterprises to take actions. This may then call for societal action – e.g. legislation – to make sure that MSD actions that have higher societal returns on the investment are made.

- The work-related stress case concerns prevention measures that are assessed to be difficult to directly ensure the use of via an OSH Directive. However, a focus on work-related stress
may well be encouraged within the Framework Directive, e.g. by mentioning it within the context of the CPMs and by highlighting that prevention measures are likely to be low-cost measures.

› The aggression at work case concerns similarly prevention measures that are not straightforward to directly include in an OSH Directive. This said, they could be emphasised when interpreting the CPM requirements to workers’ consultation and involvement when establishing prevention measures, and to the training of workers.

› The construction case indicates that the focus on training of (construction) workers should be maintained in the OSH acquis, and that safety and health requirements, which may require the purchase of new equipment, will not necessarily be an economic burden for the affected enterprises.

› The SME case shows that there is much room for improving safety and health in SMEs without it being costly for the employers. However, it may well be argued that these cases are applicable not just for SMEs, but for all enterprises.

7.4.3 Triangulation of data sources

The previous section showed that the data sources for the assessment of benefits vary with respect to the coverage of Directives and so, also with respect to the types of occupational accidents and diseases addressed. Furthermore, the individual Directives often cover more than one disease, especially those Directives that are of general nature or target specific types of workers (and all diseases are in principle covered by the Framework Directive). Therefore, disentangling the effect of one Directive from another is challenging, as the Directives sometimes overlap or supplement each other, and because legislation in other fields might also play a role (see more on this topic in the chapter on coherence). Thus, it is very difficult, if not impossible, to quantify the effect of one single Directive. Moreover, it is important to keep in mind that changes in prevalence and incidence are not just driven by changes in OSH.

As an introduction to how the different data sources contribute to our assessment of the benefits derived from the implementation of the OSH acquis, Table 7-23 gives an overview of the main categories of work-related health effects for some of the Directives. In addition, it should be emphasised that the Noise Directive contains provisions to reduce noise-induced hearing loss, and that health and safety impacts for vulnerable workers (Pregnant/breastfeeding workers, Young People, and Temporary workers) are addressed specifically in individual Directives. The Pregnant/breastfeeding workers Directive differs from most other Directives, as it concerns not just the health and safety of the worker, but also that of their offspring. For the remaining Directives, no conclusion can be drawn regarding the health effect, including the OSH signs Directive and the Workplace Directive, which make general provisions which potentially influence both safety and health in the workplace.
Table 7-23 Overview of work-related health effects

<table>
<thead>
<tr>
<th>Health effect</th>
<th>Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosocial problems</td>
<td>Apart from the Framework Directive, and a reference to mental stress in the DSE Directive there are no EU OSH Directives which can be regarded as having a potential impact on such hazards.</td>
</tr>
<tr>
<td>MSDs</td>
<td>The hazards associated with MSDs are covered by several Directives, primarily the Manual Handling Directive, the Display Screen Directive and the Vibration Directive. In the latter case, back pain is seen as a potential consequence of excess exposure to whole body vibration, whilst excessive hand-arm exposure can lead to Hand-Arm Vibration Syndrome (HAVS) or, according to some authorities, Carpal Tunnel Syndrome (CTS).</td>
</tr>
<tr>
<td>Cancers</td>
<td>Work-related cancers are primarily covered in the Carcinogens or Mutagens Directive and the Asbestos Directive</td>
</tr>
<tr>
<td>Skin and respiratory diseases</td>
<td>AOR Directive, Chemical Agents Directive (and subsequent Directives listing OELs for additional substances), Biological Agents; and the Use of PPE Directive</td>
</tr>
</tbody>
</table>

Benefits stemming from effects on work-related accidents

Our effectiveness evaluation shows that fatal and non-fatal accidents decreased during the evaluation period. Although, many other factors affect these trends, it appears likely that the decrease in the incidence of accidents at work can, at least to some extent be ascribed to the implementation of the Directives, as this can be linked to the level of compliance with the CPMs. Increasing safety and reducing accidents is a key element in any risk assessment.

It would of course have been valuable to have had good estimates of the economic benefits of the health effects of the OSH acquis. This would have required two types of data: 1) data on the number of work-related accidents and ill health that have been avoided as a result of implementing the Directives in the EU, and 2) unit costs of work-related accidents and ill health at the EU level. However, neither is currently available, and only the UK has estimated unit costs for work-related accidents and ill health. Whilst we recognise that these unit prices cannot reasonably be extrapolated to the Member States, they can provide some provide some additional input of the magnitude of costs resulting from the reduction in fatal accidents (because of different definitions of accidents, we can only make this assessment for fatal accidents).

Hence, the data from the effectiveness evaluation shows that the total number of fatal accidents fell from 5,682 to 3,453 in EU-27 from 2007 to 2012. Thus, fatal accidents fell by 39% (2,229 accidents). The appraisal value for fatal accidents was EUR 2,181,200 in the UK. Thus, based on this appraisal value, we estimate that the reduction in fatal accidents corresponds to EUR 4.9 billion in rounded numbers. This estimate, however, only gives a very rough estimate and only

\[133\] The Work Equipment Directive also includes references to poor working postures from inadequate attention to ergonomics principles, which could give rise to posture-related MSDs, although this is not usually seen as a primary focus of this Directive.
include the costs of fatal accidents. However, it does give an impression of the magnitude of potential economic benefits at the EU-level. In addition, estimates from the HSE show that from 2007 to 2012, the costs of accidents and ill health have declined by 14% in Britain. As reported earlier, we cannot quantify how much of this decline can be attributed to the OSH acquis, but taken together these data indicate that the OSH acquis has resulted in avoided costs, assuming the trends in Britain can be extrapolated to other MSs. As outlined previously, generalising from one Member State to another is very problematic.

Benefits stemming from work-related diseases and ill health
At the general level, the effectiveness evaluation provides indications that workers generally appear to consider their health and safety to be less at risk (2013) than they did previously (2007) and that they are less likely to report that their work (adversely) affects their health across the same time period. These effects might have translated into benefits in terms of quality of life losses and reductions of pain and suffering. Data from the HSE shows that such benefits account for 57% of total work-related ill health and accident costs in the UK. These benefits, however, primarily fall on the worker.

Moreover, the effectiveness evaluation also provides indices that various occupational diseases have remained constant or increased, except for a few specific cases. While quantitative material relating to occupational diseases and ill health is less readily obtained than data on accidents, it is a key concern that apparent exposures to risks related to various occupational diseases have typically remained stable or increased during the implementation period. The two most prominent work-related diseases, stress and MSDs, have both seen substantial increases in exposure to related risk factors. Moreover, there are no specific OSH provisions which address psychosocial risks, and whilst MSDs do have two specific Directives, which address two major hazards contributing to MSDs, these do not address all of the recognised risk factors. From an economic viewpoint, MSDs and psychosocial ill health are among the leading causes for sickness absence and disability in Europe and therefore contribute significantly to the costs of work-related ill health. Thus, it is clear that the acquis has not fulfilled its full potential in terms of reducing costs for workers, enterprises and society.

Agenda setting, influencing national priorities and motivation of workers
The findings from the evaluation of compliance shows that the OSH acquis have had a positive effect have influenced agenda setting and national priorities in Members State and have created more awareness at the enterprise level. The evaluation of the national transposition based on the CSRs shows very clearly that the EU OSH acquis is the reference frame for national OSH regulatory regimes, and therefore contributed to agenda setting and have influenced national priorities. The significance of the Directives in setting the scene for OSH regulation in the EU is therefore very high.

Furthermore, the evaluation of compliance at the enterprise level shows that the existence of legal obligations, i.e. national provisions, including enforcement by labour inspectorates, are the most important reason for addressing OSH. The second most highlighted reason for addressing safety and health is the demand of employees and employee representatives, which is a direct result of OSH awareness. While increased awareness on safety issues across the EU is not simply a result of the OSH acquis alone, EU and National stakeholders agree that the OSH acquis, and its accompanying actions, such as campaigns from social partners, have contributed to this increased awareness and learning and motivation of workers to a moderate extent.
Learning, innovation, quality of production/services

It is more complex to assess the potential effects of the OSH *acquis* on innovation and improved production and services, because technological improvements and innovations might also contribute to better OSH (reverse causality). For example, improved trawling equipment on fishing vessels, improved personal protective equipment, and machinery that produces less noise or vibration, all contribute to the improved safety and health of workers. Yet, to claim that such technological improvements stem from the implementation of the OSH *acquis* would clearly be a simplification, as technological improvements are largely a result of market demand.

Employment, competitiveness, higher productivity and economic growth

We identifies two studies that investigated the link between health and safety at work and economic growth. The first study showed that if the proportion of people with ill health increases, economic growth would slow down. The other study by Suhrcke et al. found that health is a strong predictor of economic growth. Health leads to economic growth by increased savings, investment in human capital, labour market participation, foreign direct investment and productivity growth. However, the relation and influence of health on economy (and economic growth) is complex. It is clear that human capital is necessary for a successful economic outcome, and since health is an important component of human capital, it has an influential effect. At the same time, economic constraints (job insecurity, etc.) in turn effect worker health. These mechanisms make it difficult to determine the impact of health on the economy.

In contrast, some interviewed stakeholders argue that gains to competitiveness can be negative. This is especially the case in Member States where the degree of compliance with the legislation is very low. It is also an issue facing micro establishments and SMEs, as the degree of compliance in smaller companies tends to be low. Non-complying small enterprises can, thus, gain a competitive edge in comparison to their complying counterparts; and hence skew competition.

Other broader effects

The evaluation of the individual Directives Reports also points to the possibilities of broader effects, which go beyond the health and safety of workers. For instance, the Pregnant/breastfeeding workers Directive focus is on exposures that could have potential negative effects on the pregnancy and/or the child. Thus, the relevance of the Directive is broader than the woman herself. That is, benefits could also extend to the next generation, which implies that this Directive could generate broader benefits in terms of extending beyond health and safety effects for the workers. However, the evaluation does not provide evidence that the Directive has had an effect on offspring, and we cannot therefore conclude that this is, in fact, the case.

Likewise, the Medical treatment on board vessels Directive primarily focuses on the provision of medical facilities and resources on board vessels. As such, it does not have a direct bearing on the incidence of accidents or ill-health on board vessels. It ensures that facilities are available in the event of an injury or illness, irrespective of whether or not the illnesses warranting treatment are work-related. While the evaluation did not lead to a definitive conclusion on the health and safety effects of this Directive, the evaluation of the relevance showed that the provisions have implications for those travelling as passengers, not just crew, thus widening the potential relevance of this Directive.

Negative side effects

The evaluation also points to potential unwanted negative side effects. Most notably, the evaluation points to some side effects stemming from the CPMS. While the majority of stakeholders most
often assess the risk assessment to be the most important driver for the effectives, others point out that the requirement of performing regular risk assessments might divert attention away from the actual goal of managing those risks associated with e.g. certain exposure levels established in other Directives. This issue was repeated and emphasised by several stakeholders at the Validation Seminar held in Brussels on December 9, 2014, as part of the present evaluation. Here, stakeholders expressed concern that inappropriate emphasis on risk assessments might serve as an obstacle for risk management and preventive measures.

Other negative side effects are only related to the specific provisions in the individual Directives. For instance, one the one hand, the Pregnant/breastfeeding workers Directive considers pregnant/breastfeeding workers to be a particular vulnerable group. The preventive measure includes, among other provisions, risk assessment, information for workers and the initiating of working accommodations – or change of work task/job if working accommodations are not possible. On the other hand, the Directives stresses that these measures should not be on the expense of equal treatment of women. Our analyses indicates that keeping a balance between protecting pregnant/breastfeeding workers and still ensuring equal treatment is a challenge for the enterprises, as data on implementation indicates that job change/leave are often initiated on the expense of working accommodations. EU-stakeholders representing workers organisations have therefore strongly criticised the Directive for discriminating against women.

7.4.4 Conclusions on benefits

Disentangling the effect of one Directive from another is challenging, as the Directives sometimes overlap or supplement each other, and because legislation in other fields might also play a role. Thus, it is very difficult, if not impossible, to quantify the effect of one single Directive. We have therefore addressed the question regarding benefits and broader effects from the level of the acquis. This means that we do not seek to attribute benefits to specific Directives or specific CPMs.

Estimates of the costs of work-related accidents and ill health at the EU-level is scarce, and we therefore had to rely on national data. These data shows that work-related accidents and ill health generates substantial costs to society. Data from seven Member States found that the costs range between 1-3 % of GDP, which underlines the magnitude of costs at societal level.

In the UK, quality of life losses account for 57 % of total costs of workplace injury and ill health. Productivity losses (indirect costs) accounts for 31 % of total costs followed by health and rehabilitation costs (6 %), administrative costs (1 %) and compensation (insurance costs) (4 %). Moreover, these cost primarily fall on the workers (57 % of the total costs), whilst 23 % fall on government and 20 % on the enterprises. Quality of life losses account for almost all costs borne by the worker, whilst the majority of costs for employers arise from productivity losses. Lost income, in terms of state benefits paid and lost tax receipts accounts for around three-quarters of government costs, with the majority of the remainder attributed to health and rehabilitation costs.

Work-related accidents

The effectiveness evaluation shows that the incidence of accidents has decreased during the evaluation period. Although there are many variables involved, it appears likely that this decrease, at least to some extent be ascribed to the implementation of the Directives. At the same time, estimates from the HSE in UK have shown that the societal costs of work-related accidents and ill health have fallen by 14 % from 2006/07 to 2012/13. Thus, it is likely that the reductions in work-related accidents also have translated into economic benefits for workers, enterprises and society.
Considering that HSE in the UK estimate that the cost of one fatal accident to be EUR 2,181,200 and that fatal accidents in EU decreased from 3,616 to 2,770 in the period 2007-2012 (a reduction of 838 accidents), the economic benefits might have been considerable.

Work related diseases and ill health

Conclusions on the effectiveness of occupational diseases and ill-health is less readily drawn due to a lack of reliable data. However, the effectiveness evaluation shows that apparent exposures to risks related to various occupational diseases have typically either remained stable or increased during the implementation period. Most notably, the two most prominent work-related diseases, stress and MSDs, have both seen substantial increases in exposure to related risk factors. Today, the costs of disability following work-related ill health stems primarily from MSDs and mental health problems. For instance, in the Netherlands, Koningsveld (2003) estimated (in 2001) that these diagnoses are responsible for 83 % of the cost of work-related ill health: MSDs (43 %) and psychosocial disease (40 %). Other diagnoses resulting in relatively high costs are: heart and vascular disease (5 %), nervous system including the eyes and ears (4 %), and occupational accidents (4 %). Thus, it is unlikely that the acquis has achieved its potential for generating economic benefits.

Broader effects and side effects

The analysis also points to several broader societal benefits. While there are few empirical studies on the subject, data from the interviews shows that stakeholders primarily highlight increased OSH awareness. Moreover, the analysis of the national transposition of the OSH acquis clearly shows that the Directives have influenced national agendas and the awareness of OSH in enterprises. The evidence for innovation, quality of products, competitiveness is much weaker, but the available literature also points to a link between competitiveness and accidents. No conclusions, however, can be drawn in this regard. Finally, the evaluation also points to negative side effects. Most notably, stakeholders expressed concern that inappropriate emphasis on risk assessments might serve as an obstacle for risk management and preventive measures.

SMEs

The data from the literature and interviews shows that SMEs might particularly benefit from health and safety effects, because a serious incident can lead to closure of a business due to the direct costs of dealing with the incident or the loss of contract/costumers. Thus, it is usually more difficult for SMEs to recover from a serious accident, because key workers cannot easily be replaced and because short-term interruptions to business can lead to dissatisfied clients/breach of contract.

7.5 Summary of the magnitude of costs and benefits

We did not identify any CBA of OSH at the societal level. Thus, we do not have solid evidence that the benefits outweigh compliance costs. Thus, our evaluation is based on a more qualitative assessment drawing on data that measures costs and benefits separately.

Table 7-24 summaries the findings presented previously in this chapter. While it is not possible to quantitatively assess cost and benefits, we have ranked the magnitude of the different types of cost and benefits according to stakeholder group (+++high, +++ medium, ++low and +very low). An empty cell indicate that no significant costs or benefits were identified for the specific stakeholder group. These ranking are conducted separately for costs and benefits. Consequently, the table cannot be used for inferences about the cost-benefit ratio. That assessment will follow later.
Table 7-24 Overview of the magnitude of costs and benefits according to stakeholder group.

<table>
<thead>
<tr>
<th></th>
<th>Enterprise</th>
<th>Worker</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance costs</td>
<td>++++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Administrative burden</td>
<td>++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productivity costs</td>
<td>++++</td>
<td>+</td>
<td>++++</td>
</tr>
<tr>
<td>Health care costs</td>
<td>+</td>
<td>+++</td>
<td></td>
</tr>
<tr>
<td>Quality of life losses</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration costs</td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Insurance/compensation costs</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall, the analyses show that administrative and substantive compliance costs primarily fall on the employer. Thus, we assess that compliance costs fall on the enterprises to a high extent and on the governments to a low extent (compared to enterprises). Although we only have information on administrative burdens from one Member State, this data indicate that a high proportion of administrative costs are business as usual (70 -90 %). Therefore, we have ranked administrative burdens as low for enterprises and very low for governments.

All stakeholder groups are likely to benefit from health and safety effects (as shown in the table). The assessment of benefits is based on data from the UK. Moreover, this data does not actually provide estimates of avoided costs stemming from the Directives. Rather, the data provide estimates of the costs of workplace accidents and ill health. While we caution against generalising findings from one MS to other MSs (and to the entire EU), the data might provide us with indications on the distribution of benefits. More specifically:

› Quality of life losses for workers account for a substantial proportion of total costs of work-related ill health and accidents (57 % in the UK). We therefore assess that workers benefit from avoided quality of life losses to a high extent and will benefit from avoided productivity losses and health care costs to a lower extent.

› Productivity losses account for the second largest proportion of total costs (31 %), and we therefore assess that enterprises and governments benefit to a high extent from avoidance of such costs.

› Whilst health care costs only account for 6 % of total costs, they make up a substantial part of costs for governments and we have therefor assessed that government benefits from avoided health care costs to a medium extent.

› Administrative costs (1 %) and compensation/insurance costs (4 %) only account for a small proportion of the total costs, and we therefore assess as them as very low.

Our analysis also points to several broader societal benefits, but it is not possible to rate the magnitude of these effects. While there are few empirical studies on the subject, data from the interviews and other surveys shows that stakeholders primarily highlight increased OSH awareness. Moreover, the analysis of the national transposition of the *acquis* clearly shows that the
Directives have influenced national agendas and contributed to higher OSH awareness in enterprises. The evidence for innovation and quality of products are weaker, but the available literature also points to a link between competitiveness and accidents.

A central question in any economic analysis is to assess whether benefits outweigh costs. As shown in the table, the OSH acquis is unlikely to bring any substantial costs for the worker. At the same time, health and safety effects are likely to bring substantial benefits for the workers. Thus, from the workers perspective, the benefits will most likely to outweigh costs.

From the societal perspective, benefits are also likely to outweigh costs (although this assessment is a bit more speculative than for workers). As shown earlier, costs of work-related accidents and ill health range between 1-3 % of BNP in the EU, which gives an impressive of the magnitude of these costs for society. However, the cost-benefit ratio clearly depends on whether the acquis actually has generated health and safety effects. The effectiveness evaluation indicates that, while this might have been the case regarding accidents, the lack of data on work-related ill health does not allow us to draw strong conclusions. However, the evaluation indicates that the Directives have not achieved their full potential regarding health and safety effects related to some of the major occupational diseases, such as MSDs and psychosocial problems.

Finally, the evaluation shows that the majority of benefits generated by health and safety effects fall on the individual worker, while most of the compliance costs fall on the enterprises. This does not necessarily imply that OSH is not profitable for enterprises. We identified a number of case studies showing that OSH can indeed be profitable for enterprise, including SMEs. While these studies provide positive evidence, it should be noted that it is too simplistic to conclude that OSH always will always be profitable for enterprises. Some OSH activities might not be profitable – either because the intervention is not effective, or because the intervention is too costly. Moreover, economic evaluation of OSH is still in its infancy and most studies suffer from serious methodological challenges. To date, most economic evaluations focus on disability management and ergonomic interventions. Thus, our knowledge is more limited regarding other types of interventions – and especially regarding interventions targeting SMEs. Finally, it is also important to note that the business cases presented earlier were not developed to assess the profitability of the OSH legislation per se, nor do they provide evidence of profitability at the societal level.
8 Assessment of coherence

This chapter describes the main findings in relation to both internal coherence, i.e. between the 24 OSH Directives covered by the evaluation; and external coherence, i.e. between on one hand the EU OSH *acquis*, and, on the other hand, other measures and/or policies at both the European and international levels.

8.1 Coherence and complementarity between the OSH Directives (EQC1)

**EQC1:** What, if any, inconsistencies, overlaps, or synergies can be identified across and between the Directives (for example, any positive interactions improving health and safety outcomes, or negative impact on the burdens of regulation)?

8.1.1 General observations on ‘internal’ coherence

This section provides an overview of findings related to the ‘internal’ coherence of the OSH *acquis*, its internal logic and legal structure. It focuses first on inconsistencies, overlaps or synergies per Common Processes and Mechanisms on a pan-Directive level, as defined for the purposes of this assessment (see section 2.2.2), and then considers other key requirements for which some issues of internal coherence have been identified, namely limit values, protection of workers at particular sensitive risks, inspection and enforcement measures.

Our preliminary findings were supplemented by additional analysis of the legal articulation between OSH Directives through in-built mechanisms (e.g. specific scope, ‘without prejudice’ clauses, exemptions, the *lex specialis* principle, definitions).

While mapping potential interfaces, overlaps and inconsistencies, we complemented our findings with information from interviews of EU and national stakeholders, and from the NIRs.

8.1.2 Common Processes and Mechanisms

This section is divided per CPM. With regard to the CPMs, the evaluation is presented per directive or group of directives, as follows:
The grouping of the directives facilitates the identification of potential overlaps and inconsistencies between Directives regulating similar sources of risks.

CPM 1: Conducting a risk assessment across the Directives

The assessment of coherence (potential overlaps and inconsistencies) of this CPM covers:

- The procedure to conduct the risk assessment;
- The employer obligation to be in possession of an assessment including groups exposed to particular risks; and
- Requirements linked to the adoption of risk management measures derived from the risk assessment are also covered in each sub-section below.

As shown in the table below, the obligation to carry out a risk assessment is reflected in different ways across the directives: only a few directives do not set risk assessment procedures. Out of those which include an obligation to carry out a risk assessment, the majority (15) establish detailed risk assessment procedures. Eight directives provide for an obligation to be in possession of an assessment. Out of the 24 directives that provide for some form of risk assessment procedures, all except one refer to risk management measures, undefined or detailed.

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(134) These groups include the following directives: Directive 89/654/EC (workplace) and Directive 92/58/EEC (OSH signs), Directive 2009/104/EC (work equipment) Directive 89/656/EEC (Use of PPE), Directive 1999/92/EC (ATEX)
Table 8-1  Overview of obligations to carry out risk assessments in the Directives

<table>
<thead>
<tr>
<th>No risk assessment procedure</th>
<th>89/391 (framework)</th>
<th>88/654 (workplace)</th>
<th>92/58 (OSH signs)</th>
<th>92/656 (work equipment)</th>
<th>2009/104 (work equipment)</th>
<th>92/57 (construction)</th>
<th>92/29 (medi.treatment)</th>
<th>92/85 (fish. vessels)</th>
<th>91/383 (temporary)</th>
<th>94/33 (young workers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General risk assessment procedures</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific and detailed risk assessment procedures</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Obligation to be in possession of the risk assessment</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>No risk management measures derived from risk assessment</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference to undefined risk management measures</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
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Source: Consultant’s analysis of the Directives’ provisions
Framework Directive

The requirement to conduct a risk assessment is set as a general, ‘*a minima*’, principle in the Framework Directive, while most Directives regulating specific risks and requesting employers to carry out a risk assessment define in detail the elements/risks that must be covered by this assessment. However, in some cases, these detailed provisions are not directly linked to the specific scope and could apply to all workers regardless of the risks or the sector. Therefore, these requirements could bring an added value to the general principles set in the Framework Directive.

Most OHS Directives with a risk assessment procedure require the update or periodical repetition of the risk assessment, although this requirement varies from one Directive to another. Directive 89/656/EEC (Use of PPE) provides that the assessment shall be reviewed if any changes are made to any of its elements. The two extractive industry Directives (92/104/EEC and 92/91/EEC) require that the health document, which contains the risk assessment, must be kept up-to-date. According to all four physical agents Directives and Directive 98/24/EC (chemical agents), the risk assessment shall be kept up-to-date on a regular basis, particularly if there have been significant changes which could render it out-of-date, or when the results of health surveillance show it to be necessary. Moreover, all four physical agents Directives set the obligation to carry out the risk assessment at suitable intervals. Finally, Directive 2004/37/EC (carcinogens or mutagens) and Directive 2000/54/EC (biological agents) mention that the assessment shall be renewed regularly and in any event, in case of change. Such differences may be confusing for the employer, e.g. in terms of timing and circumstances, which trigger an update of the risk assessment. In workplaces with several agents, the employer may need to update or review the risk assessment under different circumstances for each agent. This can lead to an additional burden for employers.

In some cases, requirements under the daughter Directives establish a more multidisciplinary, integrated approach reflecting the complementarity of all CPMs when it comes to achieving the maximum possible degree of workers’ protection. This connection between different CPMs could bring added value if associated with a general requirement set within the Framework Directive and applicable across all specific Directives. The analysis has identified two such instances:

› All physical agents Directives require that the employer must give particular attention, when carrying out the risk assessment, to appropriate information obtained from health surveillance, including published information, as far as possible. A similar requirement is set under Directive 98/24/EC (chemical agents). This connection between the results of health surveillance and the assessment of the risks can have an added value within the general principle of conducting a risk assessment.

› All physical agents Directives and Directive 92/85/EEC (pregnant/breastfeeding workers) provide that the risk assessment shall be planned and carried out by competent services or persons taking particular account of the provisions of Article 7 of the Framework Directive (protective and preventive services).

The Framework Directive requires employers to be in possession of an assessment of the risks to safety and health at work, including those facing groups of workers exposed to particular risks. With regard to this provision, the four physical agents Directives stipulate that the risk assessment shall be recorded on a suitable medium; according to national law and practice and also that the data obtained from the risk assessment shall be preserved in a suitable form to permit consultation.
at a later stage. This requirement is general and reflects an aspect of the principle of prevention that is potentially applicable in all risk assessment procedures.

The Framework Directive provides that subsequent to the risk assessment and as necessary, the preventive measures and the working and production methods implemented by the employer must ensure an improvement in the level of protection afforded to workers with regard to safety and health and be integrated into all the activities of the undertaking and/or establishment and at all hierarchical levels. The risk management measures set in the other Directives are very specific and cannot be replicated to all occupational risks, with the exception of the provision of Directive 2013/35/EC (electromagnetic fields), requiring that the amended protection and prevention measures must be preserved in a suitable traceable form to permit consultation at a later stage.

Workplaces, Work Equipment, OSH signs, Use of PPE, ATEX

Directive 89/654/EC (workplace) and Directive 92/58/EEC (OSH signs) do not contain any risk assessment procedure and derived risk management measures. Directive 89/654/EC (workplace) relies on minimum requirements and control measures to avoid occupational risks at workplaces. Directive 92/58/EEC (OSH signs) requires employers to take into account any risk assessment as set out in Article 6(3) of the Framework Directive when providing OSH signs, where hazards cannot be avoided or adequately reduced by other means. This lack of risk assessment measures under these Directives is not considered an inconsistency, since their scope and aim do not really entail the need for a specific risk assessment. The risk assessment is covered under the Framework Directive and the relevant individual Directives.

Directive 2009/104/EC (work equipment) and Directive 89/656/EEC (Use of PPE) include specific risk assessment provisions. One inconsistency was identified between Directive 2009/104/EC (work equipment) and some physical agent Directives. Pursuant to Directive 2009/104/EC (work equipment). In selecting the work equipment, the employer must pay attention to the specific working conditions and characteristics and to the hazards present in the undertaking or establishment, in particular at the workplace, for the safety and health of the workers, and any additional hazards posed by the use of the work equipment in question. Several other Directives include references to work equipment in their risk assessment.

Physical agents

Directive 2002/44/EC (vibration), Directive 2003/10/EC (noise) and Directive 2006/25/EC (artificial optical radiation) require employers to take information provided by the manufacturers of work equipment in accordance with the relevant EU Directives into account in their risk assessment. Such a requirement is however relevant to all work equipment, and not only to the ones that are sources of noise, vibration and/or artificial optical radiation.

The physical agents Directives, as the majority of OSH Directives, contain provisions on risk assessment. They cross-refer and specify the provisions of Directive 89/3891/EEC (Framework Directive) on risk assessment in order to cover the particular risks caused by noise, vibration or optical radiation. The risk assessment procedures are very similar across the physical agents Directives with some differences linked to the specificities of each directive. For example, Directive 2003/10/EC (noise) contains specific provisions related to noise (e.g. exposure to impulsive noise, interactions between ototoxic substances and between noise and vibration, availability of hearing protectors with adequate attenuation characteristics).
However, the employer obligation to give particular attention to the extension of exposure beyond normal working hours as set by Directive 2003/10/EC (noise). While such requirement is also relevant to exposure to vibration and artificial radiation, it is not covered by the relevant directives. The extension of exposure beyond normal work hours can also increase the risk from vibration. This is sometimes taken into account by national legislation. To the extent that some adverse effects of AOR exposure relate to the effects of chronic rather than acute exposure, a similar provision is also relevant in case of exposure to artificial optical radiation.

The Physical Agents Directives have quite similar approaches to control risks from exposure. All the Directives mention that the risk arising from exposure must be eliminated or reduced to a minimum. They all set two types of management measures derived from the risk assessment procedure depending on either the exceedance of action limit values/action levels, or exceedance of exposure limit values with the exception of Directive 2006/25/EC (artificial optical radiation), which requires employers to take risk management measures only if the risk assessment indicates that exposure limit values may be exceeded, and in cases where they are exceeded. Furthermore, the content of the risk management measures, despite certain specificities linked to the particular physical hazards, are quite similar between the four Directives.

Despite similarities in the risk management measures between the four physical agents, only Directive 2003/10/EC (noise) sets as a follow-up measure to eliminate or reduce exposure to a minimum appropriate work schedules with adequate rest periods. Such a requirement could, however, apply to workers exposed to all physical agents independently of their specificities and level of risk. There are also a number of requirements which although present in other physical agents directive are not included in Directive 2002/44/EC (vibration), as follows:

- The risk assessment should be followed by measures related to the limitation of the duration and intensity of the exposure. It is, however, so difficult to justify due to the characteristics of the risks derived from vibration that such a measure does not apply in this case.

- Appropriate personal protective equipment should be available. However, such a requirement is considered less appropriate for risks derived from vibration where the main measures to limit vibration are the choice of appropriate work equipment. Furthermore, there is currently no personal protective equipment able to limit the risks from vibration.

- The delimitation of areas and access restriction in case of exceedance of exposure limit values: the characteristic of the risk and its diffusion (it is unlikely that all a surface area is subject to vibration) explain that such a requirement is not relevant to vibration.

- Conversely, only Directive 2003/10/EC (noise) sets as a follow-up measure in case of exceedance of limit values and appropriate work schedules with adequate rest periods. Such measures would also be effective in relation to workers exposed to vibrations independently of their specificities and level of risk.

\(^{135}\) For example, the UK Regulation on vibration (The Control of Vibration at Work Regulations 2005) requires that the risk assessment must take into account any extension of exposure at the workplace to whole-body vibration beyond normal working hours, including exposure in rest facilities supervised by the employer.
Chemical agents

All the directives relating to chemicals provide that the risk assessment must take into account the nature, degree and duration of worker’s exposure to chemicals agents. Since Directive 98/24/EC (chemical agents) contains such provision, it is unnecessary for Directive 2004/37/EC (carcinogens or mutagens) to replicate it under its risk assessment requirement. Such overlaps, however, do not lead to double regulation in practice.

Since the provisions of Directive 98/24/EC (chemical agents) must apply without prejudice to the more stringent and/or specific provisions contained in Directive 2004/37/EC (carcinogens or mutagens), the following risk assessment measures under Directive 98/24/EC (chemical agents) will also apply to carcinogens and mutagens:

- Information on safety and health to be provided by the supplier;
- The circumstances of work involving such agents;
- The effect of preventive measures taken or to be taken;
- The conclusions to be drawn from any health surveillance already undertaken;
- Additional information needed for the risk assessment that the employer must obtain from the supplier or from other readily available sources; and
- Assessment in case of activities involving exposure to several hazardous chemical agents, based on the risk presented by all such chemical agents in combination.

However, one provision from Directive 2004/37/EC (carcinogens or mutagens) requiring employers to supply authorities responsible, at their request, with the information used for making the assessment could also apply to all chemical agents under Directive 98/24/EC (chemical agents). This provision is not tailored to the specific hazards and risks derived from carcinogens and mutagens.

The provisions of Directive 2004/37/EC (carcinogens or mutagens) on risk assessment state that the assessment shall be renewed regularly, and in any event when any change occurs in the conditions which may affect workers' exposure to carcinogens or mutagens. They also require that the employer shall supply the authorities responsible, at their request, with the information used for making the assessment. They finally require employers to give particular attention to any effects concerning the health or safety of workers at particular risk. Although these provisions are more favourable to the health and safety of workers, they do not apply under the current EU acquis to workers exposed to asbestos.

The three Directives relating to chemicals follow different approaches with regard to the derived risk management measures. This is mainly due to the specificity of the risk covered and the different hazardous properties of these agents (e.g. carcinogens or mutagens/ asbestos/ hazardous chemical agents). All Directives set less stringent risk management measures if the risk of exposure according to the risk assessment is low, apart from the Carcinogens or Mutagens Directive. The lack of exemptions is justified by the specific hazard posed by carcinogens and mutagens.

- Demarcation of risk areas
Only Directive 98/24/EC (chemical agents) does not set measures related to the demarcation of risk areas and use of adequate warning and safety signs, including ‘no smoking’ signs in areas where workers are exposed or likely to be exposed. Such a requirement could limit worker exposure to all hazardous chemical agents.

- **Provision on the register of workers**

Directive 2004/37/EC (carcinogens or mutagens) and Directive 2009/148/EC (asbestos) both contain provisions requiring employers to register workers’ exposure. However, the provisions under Directive 2009/148/EC are more stringent, since they require employers to indicate the nature and duration and the exposure to which they have been subjected, whereas Directive 2004/37/EC (carcinogens or mutagens) requires employers to indicate only the exposure to which they have been subjected, if available. As there are no major differences of risk between the characteristics of the substances covered by these Directives (asbestos is a carcinogen), such difference in the wording of these two provisions does not seem to be justified.

- **Substitution requirements**

Directive 98/24/EC (chemical agents) provides that, in order to eliminate, or reduce to a minimum, exposure to hazardous chemical agents, substitution shall be the preferred solution, whereby the employer shall avoid using a hazardous chemical agent by replacing it with an agent or process that, under its condition of use, is not hazardous or less hazardous to worker safety and health.

Directive 98/24/EC (chemical agents) requires the employer to reduce the use of a carcinogen or mutagen at the workplace, in particular by replacing it, insofar as is technically possible, by a substance, preparation or process which, under its conditions of use, is not dangerous or less dangerous to workers’ health or safety.

The substitution requirements under Directive 98/24/EC (chemical agents) are less stringent. Substitution must be the preferred option, whereas the Directive 2004/37/EC obliges employers to substitute these agents but sets exceptions (insofar as is technically possible or if the nature of the activity so permits). One could argue that the substitution requirements under the Directive 2004/37/EC could also apply to all hazardous substances independently of the level or type of risk, as is the case in certain MSs (e.g. Germany\(^{[136]}\)). On the other hand, the more serious potential health outcome from exposure could justify the current setting with more stringent requirements of substitution in relation to carcinogens and mutagens. In addition, any more stringent requirement on substitution may involve a significant compliance cost for employers.

**Biological agents**

Directive 2000/54/EC (biological agents) contains a detailed risk assessment procedure. Although chemical agents and biological agents entail very different hazards and risks, certain risk assessment requirements under Directive 98/24/EC (chemical agents) could also apply to the risk assessment of biological agents:

- the effect of preventive measures taken or to be taken must be included in the risk assessment procedure;

\(^{[136]}\) The Federal Ordinance for the Protection against Hazardous Substances of 26 November 2010 applies the substitution requirements of Directive 2004/37/EC to all hazardous substances
the employer shall obtain additional information which is needed for the risk assessment from the supplier or from other readily available sources, considering that certain biological agents such as bacteria can be sold to laboratories for research purposes;

the risk assessment must take into account conclusions to be drawn from any health surveillance already undertaken;¹³⁷;

certain activities within the undertaking or establishment, such as maintenance, in regard to which it is foreseeable that there is a potential for significant exposure, or which may result in deleterious effects to safety and health for other reasons, even after all technical measures have been taken, shall be included in the risk assessment;

the risk assessment may include a justification by the employer that the nature and extent of the risks make a further detailed risk assessment unnecessary.

CPM2: Preventive and protective services

Framework Directive

Article 7 of the Framework Directive requires the designation of preventive and protective services, internal or external. The employer may take responsibility for the protective and preventive measures, provided he/she is competent and if Member States have defined the categories of undertakings in which this is possible (in the light of the nature of the activities and size of the undertakings).

This CPM applies to establishments/undertakings rather than to specific risks. Every establishment/undertaking should have such services or persons designated as responsible for protective and preventive activities that cover all the risks present in this establishment or undertaking and all personnel (including any specific and/or vulnerable group of workers). The analysis has not revealed any coherence issues, nor have stakeholders raised concerns in relation to this CPM. Only one instance of possible streamlining has been identified in relation to the Framework Directive and Directive 91/383/EEC (temporary workers).

Directive 91/383/EEC (temporary workers) includes more specific requirements on the duties of preventive and protective services in relation to temporary workers. Member States must ensure that workers, services or persons designated to carry out preventive and protective activities are informed of the assignment of temporary workers to the extent necessary to carry out adequately their protection and prevention activities for all the workers. This requirement is potentially applicable to all new workers and workers who need specific attention (such as young workers and pregnant/breastfeeding workers) due to the risks they encounter.

¹³⁷ Note that Directive 2000/54/EC (biological agents) under Article 14 requires that workers must undergo health surveillance prior to exposure which would implicitly mean that the result of health surveillance is taken into account for the risk assessment. Furthermore the risk assessment under Directive 2000/54/EC requires taking into account knowledge of a disease from which a worker is found to be suffering and which has a direct connection with his work.
CPM3: Information to Workers

Framework Directive

Article 10 of the Framework Directive regulates the workers’ right to information concerning the safety and health risks, protective and preventive measures and activities with respect to both the undertaking and/or establishment in general, each type of workstation and/or job, and the implementation of measures on first aid, fire-fighting and evacuation. Information rights extend to the external workers’ employers. Finally, Article 10(3) sets out more advanced information requirements towards workers with specific safety and health functions or responsibility, in order to carry out their functions, including access to the risk assessment and protective measures, to the list/reports on occupational accidents and information relevant to the implementation of the preventive and protective measures, e.g., information yielded from inspection agencies.

The Framework Directive sets out the requirement of providing information to workers in a general manner. This general wording could potentially cover and include every kind of specific information. Moreover, all individual Directives (apart from the ATEX Directive) also contain specific provisions on information for workers that apply to the specific risks or workplaces they cover. Furthermore, all these Directives apart from Directive 2004/37/EC (carcinogens or mutagens), Directive 2009/148/EC (asbestos), Directive 2000/54/EC (biological agents) and Directive 92/29/EEC (medical treatment on board vessels), include a ‘without a prejudice clause’ referring to Article 10 of the Framework Directive, but this shall not be considered a consistency issue because these provisions:

› only repeat the requirement to provide information on all the measures to be taken concerning safety and health of worker that is already included in the Framework Directive information-related requirement; or

› specify, detail and list more examples in a non-exhaustive way, without contradicting the general principle set out in the Framework Directive.

However, in some cases, these additional details and examples of information to be communicated to the workers are more general and could bring an added value to the general principles set in the Framework Directive:

› Directive 2009/104/EC (work equipment), Directive 98/24/EC (chemical agents), Directive 92/57/EEC (construction), Directive 92/104/EEC (mines and quarries) Directive 92/91/EEC (drilling) and Directive 93/103/EC (fishing vessels) require that the information should be comprehensible to workers concerned, not only in specific sectors of activity or in relation to specific equipment, but also in relation to, e.g., specific risks. This may entail additional cost (e.g. translation if needed for non-native speaker workers, simplification of technical information).

› The physical agents Directives as well as Directive 98/24/EC (chemical agents), Directive 2009/148/EC (asbestos) and Council Directive 92/85/EEC (pregnant/breastfeeding workers) all specifically include the outcome/results of the risk assessment in the information to be communicated to workers and do not reserve this right only to workers with specific functions in protecting the safety and health of workers, or workers’ representatives with specific responsibility for the safety and health of workers as under the Framework Directive.
The physical agents Directives require additionally that information relating to the results of the risk assessment shall include an explanation of their significance and potential risks. The scope of these Directives does not justify limiting this requirement only to them. Widening the scope of such a provision would contribute to improving the quality and comprehensiveness of the information provided to workers.

The physical agents Directives mention the circumstances in which workers are entitled to health surveillance as part of their right to information. As health surveillance is a general requirement set out by the Framework Directive, it seems logical that information on the circumstances under which workers are entitled to health surveillance is part of the general information requirement.

The physical agents Directives and Directives 2004/37/EC (carcinogens or mutagens), 2009/148/EC (asbestos) and 2000/54/EC (biological agents) include safe working practices to minimise exposure or risks from exposure as part of the information for workers. Information on safe working practices could be part of the information communicated to workers also in other cases (e.g., manual handling of loads, display screen equipment, work equipment, etc.). The same can be argued about the requirement to provide workers with information on how to detect health effects of exposure and how to report them, which is only set out in the physical agents Directives.

Some Directives lay down specific requirement on information for workers in particular cases; Directive 2004/37/EC (carcinogens or mutagens) in the case of abnormal situations, Directive 2009/148/EC (asbestos) in case of excess of exposure limit values, Directive 2000/54/EC (biological agents) in cases of accidents or incidents. Workers shall be informed as soon as possible of the occurrence of such cases and receive information on the causes and mitigation measures. Similarly, Directive 2009/104/EC (work equipment) requires ensuring that all workers have at their disposal adequate information that contains at least information concerning foreseeable abnormal situations. Accidents, incidents or abnormal situations may occur in relation with other risks and not only carcinogens or mutagens, asbestos, biological agents and work equipment (e.g. chemicals, ATEX) and this in all types of workplace.

Only Directive 91/383/EEC (temporary workers) sets a requirement regarding the timing of providing information to workers stipulating that this should be done before workers take up activity. Although this is justified by the specific character of temporary or fixed-term employment, it reflects a general principle that could apply to all workers.

Workplaces, Work Equipment, OSH signs, Use of PPE, ATEX

Directive 1999/92/EC (ATEX) is the only individual directive that does not include a requirement in relation to information for workers. The Framework Directive applies.

The risk of explosion in workplaces covered by the mineral-extracting industries does not fall under Directive 1999/92/EC (ATEX). However, both Directive 92/104/EEC (mines and quarries) and Directive 92/91/EEC (drilling) require that information is provided to workers, inter alia, on the measures taken to avoid, detect and combat the starting and spread of fires and explosions, and to prevent the occurrence of explosive and/or health-endangering atmospheres. There is no clear justification why such a requirement would not apply to risk from explosion.
Physical agents
In relation to information to be provided to workers, all physical agents directives include a ‘without prejudice’ clause referring to the relevant article of the Framework Directive while setting additional requirements which are relatively general and found in an almost systematic way in all physical agents directives. In some instances, requirements that could be applicable to all physical agents are not included in all physical agents Directives, as follows:

› Only Directive 2003/10/EC (noise) includes a requirement to provide information relating to ‘the nature of the risks’.

› Only Directive 2003/10/EC (noise) and Directive 2006/25/EC (artificial optical radiation) include a requirement on information to workers on the proper/correct use of PPE.

› Finally, only Directive 2013/35/EU (electromagnetic fields) sets a specific information requirement concerning workers at particular risk, as referred to in this Directive (i.e. workers who wear active or passive implanted medical devices, such as cardiac pacemakers, workers with medical devices worn on the body, such as insulin pumps, and pregnant/breastfeeding workers).

Chemical agents
Similarly to the physical agents Directives, Directive 98/24/EC (chemical agents) includes a ‘without prejudice’ clause referring to the Framework Directive and additional requirements, such as information on the hazardous chemical agents occurring in the workplace, access to any safety data sheet provided by the supplier. Some provisions on information in Directive 2004/37/EC (carcinogens or mutagens) and Directive 2009/148/EC (asbestos) could also apply to all chemical agents since they are unlikely to be tailored to the specific hazards and risks derived from carcinogens, mutagens and asbestos:

› Directive 2004/37/EC (carcinogens or mutagens) is the only of the three directives relating to chemicals:

› to establish access of workers and/or any workers’ representatives to anonymous collective information.

› to require the employer to keep an up-to-date list of the workers engaged in the activities posing an occupational risk and to ensure access rights to the list (for the doctor and/or competent authority/persons and the exposed workers themselves).

› Details concerning information relevant to PPE are not provided under Directive 98/24/EC (chemical agents) whereas the other two chemical agents directives include information on wearing and use of PPE.

Some information requirements under Directive 2004/37/EC (carcinogens or mutagens) could also apply to workers exposed to asbestos since they are considered more favourable for their protection:

› workers’ information on the steps to be taken by workers, including rescue workers, in the case of incidents and to prevent incidents
timely information to workers and/or their representatives, on the causes of abnormal exposure and the mitigation measures taken or to be taken.

Biological agents

Directive 2000/54/EC (biological agents) sets two types of information requirements. One general requirement applies to all workers exposed to biological agents (e.g. information and training on potential risks to health, hygiene requirements). It also sets more specific requirements requiring employers to provide written instruction to workers in case of serious accident or incident, or in case of handling a group 4 biological agent.

Several physical agent Directives place an obligation on the employer to inform on how to detect the health effects of exposure and how to report them. Since there are adverse health effects of exposure to biological agents, such an information obligation could also apply for biological agents.

CPM4: Training of Workers


Framework Directive

The Framework Directive sets the general principle of ensuring adequate training to all workers, in particular, in the form of information and instructions specific to their workstation or job. At the same time, most individual Directives also contain specific provisions on training of workers that apply to the specific risks or workplaces they cover, and most of these provisions include a ‘without prejudice’ clause referring to Article 12 of the Framework Directive. This shall not be considered a consistency issue because, as in the case of the requirement relevant to information for workers, these provisions:

- either only repeat the requirement to provide information on all the measures to be taken concerning safety and health of worker that is already included in the Framework Directive information-related requirement; or

- detail and list more examples in a non-exhaustive way, concerning the type of information to be provided to workers, without contradicting the general principle set out in the Framework Directive.

However, in some cases, the additional details and examples of training that should be provided to the workers are more general and could bring an added value if applied to all workers:

- Although this is mentioned only in Directive 89/656/EEC (Use of PPE), a requirement for the employer to organise demonstrations could constitute an effective form of training, complementing information and instructions in various other cases, apart from the use of PPE. For example, demonstrations would also be compatible with work equipment, in relation to manual handling of loads (e.g. how to lift loads) but also in relation to specific risks (e.g. how to execute tasks involving biological agents or asbestos).
Similarly, training should result in workers being able to perform and execute their tasks safely, bearing in mind the risks they are exposed to when tasks are not performed correctly. Such a requirement is explicitly set only in Council Directive 90/269/EEC (manual handling of loads) that refers to ‘proper training and information on how to handle loads correctly’ and potential risks if these tasks are not performed correctly. The rational of this requirement could be of general application.

Directive 89/656/EEC (Use of PPE), Directive 2009/148/EC (asbestos), Directive 92/104/EEC (mines and quarries), Directive 93/103/EC (fishing vessels) explicitly mention that training instructions must be understandable/comprehensible to the workers concerned. Instructions given in the course of training should be comprehensible to workers concerned not only in specific sectors of activity or in relation to specific equipment or risk factors, but in general.

All physical agents Directives include safe working practices among the training topics. Similarly, precautions to be taken to prevent exposure are listed among the training topics in Directive 2004/37/EC (carcinogens or mutagens), Directive 98/24/EC (chemical agents) and Directive 2000/54/EC (biological agents). Hence, this requirement already applies to all risks and, for clarity, could be set as a general principle in the Framework Directive.

Only the new EMF Directive (2013/35/EU) links training (and information) to workers at particular risk. As this group of workers can be present in any workplace and perform activities that could entail any of the risks covered by the Directives, any link between them and training would make sense in a more general context and not exclusively in relation to electromagnetic fields.

Directive 2004/37/EC (carcinogens or mutagens), Directive 2000/54/EC (biological agents) and Directive 2009/148/EC (asbestos) include special circumstances and what to do in that case among the issues to be covered by training. In principle, all workers, in all sectors of activity should be prepared and able to cope with any potential exceptional situation like an incident, an accident etc.

Workplaces, Work Equipment, OSH signs, Use of PPE, ATEX

Directive 89/656/EC (Use of PPE) complements the general principle of the Framework Directive as regards training, requirement to use instructions and, if appropriate, specific demonstrations in the wearing of PPE. These requirements are not set in a separate provision but included in subparagraphs of Article 4 (General obligations). Several other individual directives include specific training of workers related to the correct use of PPE:

- Directive 2003/10/EC (noise) – training on correct use of hearing protectors
- Directive 2006/25 (artificial optical radiation) - training on proper use of appropriate PPE
- Directive 2004/37/EC (carcinogens or mutagens) - training on wearing and use of protective equipment and clothing
- Directive 2000/54/EC (biological agents) training on wearing and use of protective equipment and clothing

The above duplications could be seen as overlaps, to the extent that Annex II of the Use of PPE Directive comprises a non-exhaustive list of items of PPE that are covered by its scope, including hearing protection, respiratory protection, skin protection etc. Training of workers under the Use of PPE Directive should, in that case, be sufficient to cover all kinds of PPE used in different activities, and linked with a variety of risks.
Directive 2009/104/EC (work equipment) provides that, without prejudice to Article 12 of the Framework Directive, employers must take the necessary measures to ensure that workers given the task of using work equipment receive adequate training, including on any risks which such use may entail; and in case of repairs, modifications, maintenance or servicing.

Other Directives also include requirements on training of workers linked to work equipment. Council Directive 92/104/EEC (mines and quarries) and Council Directive 92/91/EEC (drilling) define written instructions specifying rules to be observed to ensure the safety and health of workers and the safe use of equipment (including emergency equipment) as a minimum safety and health requirement for every workplace within their scope.

The scope of the work equipment Directive covers work equipment in the sense of ‘any machine, apparatus, tool or installation used at work’ and applies in all sectors of activity as covered by the Framework Directive, with no differentiation of workplaces. Therefore, it could be argued that multiple references to training in these four Directives relating to work equipment could be seen as overlaps.

Physical agents
All physical agents Directives include a common provision on information and training, without distinguishing what should constitute the object of information and what should be part of training. Therefore, the above findings on information for workers also apply as regards training.

Chemical agents
Some provisions on information from Directive 2004/37/EC (carcinogens or mutagens) and Directive 2009/148/EC (asbestos) are relevant to all chemical agents as they are not tailored to the specific hazards and risks derived from carcinogens or mutagens and asbestos:

- Hygiene requirements are a part of training only under Directive 2004/37/EC.
- Finally, while health surveillance is of equal importance in relation to all chemical agents, only Directive 2009/148/EC (asbestos) includes the requirement to provide training on medical surveillance requirements.

CPM5: Health Surveillance
Article 14 of the Framework Directive set general principles on health surveillance of workers, in particular the employer’s obligation to ensure that all workers receive health surveillance appropriate to the risks they incur at work, and at regular intervals.

The Framework Directive only regulates few aspects of health surveillance of workers. The table below shows in details how the health surveillance provisions are drafted across Directives outlining differences and similarities. It only covers those directives which have established more detailed and specific health surveillance requirements.
### Table 8-2  Health surveillance provisions across Directives

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<td>Directives setting requirements on health records</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Directives providing practical recommendations for the health surveillance/clinical assessment of workers in an Annex</td>
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<td>X</td>
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<tr>
<td>Explanation on the purpose/aim/objective of health surveillance</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Health surveillance to be taken into account in the application of risk management measures</td>
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<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Health surveillance in cases of exposure above limit values</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Health surveillance compulsory in cases where a binding biological limit value has been set</td>
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<td>X</td>
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<tr>
<td>Type of health surveillance to be carried out – specific examinations</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Health surveillance 'at regular intervals'</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Specific time when health surveillance shall take place (prior to work, exposure, once every x years etc.)</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>Medical examinations or surveillance made available during hours chosen by the worker</td>
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<tr>
<td>No financial cost (especially in relation to health surveillance) for the employees</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Doctor or authority responsible for health surveillance to be familiar with each worker’s exposure conditions or circumstances</td>
<td></td>
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<td>X</td>
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<tr>
<td>Employer ensure access to the results of risk assessment for the person/authority responsible for health surveillance</td>
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<tr>
<td>Workers to be informed by whoever carrying out the health surveillance on the results which relate to them personally</td>
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<tr>
<td>Workers to be informed regarding any health surveillance to undergo after the end of exposure</td>
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<tr>
<td>Employer to be informed of any significant findings from the health surveillance, taking into account confidentiality</td>
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<tr>
<td>The employer shall review the risk assessment</td>
<td>X</td>
<td>X</td>
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<tr>
<td>The employer shall review the risk management measures</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Employer to take account advice from those responsible for health surveillance in implementing risk</td>
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<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
</tbody>
</table>
management measures

| Employer to arrange continued surveillance and provide for a review of the health status of other worker similarly exposed | X | X | X | X | X | X |

Source: consultant’s analysis of the Directives’ provisions
Framework Directive

Some individual directives set general health surveillance provisions that could potentially bring an added value to the general principle of health surveillance under the Framework Directive:

› Only Directive 2013/35/EU (EMF) specifies that medical examinations or surveillance shall be made available during hours chosen by the worker. This is applicable to any health surveillance procedure.

› Directive 2006/25/EC (artificial optical radiation) sets an additional, more specific requirement for the employer to ensure that the person responsible for the health surveillance, has access to the results of the risk assessment where such results may be relevant to the health surveillance. There is a similar requirement under Directives 2004/37/EC (carcinogens or mutagens), 2009/148/EC (asbestos) and Directive 2000/54/EC (biological agents), according to which those responsible for the health surveillance must be familiar with the exposure conditions or circumstances of each worker. Similarly, this general requirement could apply to all risk assessment.

› The Framework Directive does not set specific follow-up measures to health surveillance such as informing the employer of any significant findings from the health surveillance, taking into account medical confidentiality, etc. (see Table above). It does not seem justified that follow-up measures as a general principle are applied only for some agents. The same provision could apply to all health surveillance procedures, as it is not exclusively linked with the specific nature of each risk.

The Framework Directive does not regulate health records, whereas almost all individual Directives containing a provision dedicated to health surveillance include specific requirements and specifications about health records (e.g. access rights, duration). The requirement to keep health records is directly linked with the requirement to ensure that workers receive health surveillance appropriate to the health and safety risks they incur at work. Therefore it does not seem justified to include a relevant obligation only in relation with specific risks; this obligation could apply to all health surveillance procedures.

Physical agents

All physical agents directives set requirements on health surveillance. The relevant provisions contain a ‘without prejudice’ clause referring specifically to Article 14 of the Framework Directive, while at the same time establishing more detailed requirements regarding health surveillance. These provisions are, overall, similar across the physical agents Directives, with the following exceptions:

› The requirement to take into account health surveillance in the application of risk management measures only applies in relation to vibration and not to all physical agents, but this difference does not seem to be justified by the specific scope.

› The requirement to inform workers on the results which relate to them personally is set by all physical agents directives except the Noise Directive.

› Only Directive 2002/44/EC (vibration) requires that the employer shall be informed of any significant findings from the health surveillance, taking into account any medical confidentiality.
Two requirements are included in all physical agents Directives but Directive 2013/35/EC (electromagnetic fields): the obligation placed on the employer to review the risk assessment on the basis of findings from health surveillance and the requirement for the employer to take into account advice from persons responsible for health surveillance in implementing risk management measures (including the possibility to assign alternative work).

Chemical agents
All the three Directives set health surveillance requirements. Directive 98/24/EC (carcinogens or mutagens) provides a specific definition for health surveillance as the assessment of an individual worker to determine the state of health of that individual, as related to exposure to specific chemical agents at work. The health surveillance provisions under the other two chemicals directives follow a similar approach, while containing some additional requirements specific to the risks they cover (e.g. specific chest examinations for asbestos). However, two requirements on health surveillance from Directive 98/24/EC could also apply to all chemical agents, since they are unlikely to be tailored to the specific hazards and risks derived from asbestos:

- The doctor or the authority responsible for the health surveillance must be familiar with the exposure conditions or circumstances of each worker; and
- The workers concerned or the employer can request a review of the results of health surveillance.

Directive 2009/148/EC (asbestos) requires mandatory health surveillance prior to exposure, whereas Directive 2004/37/EC (carcinogens or mutagens) only requires health surveillance to be carried out for workers for whom the results of the risk assessment reveal a risk to health or safety. Directive 2004/37/EC provides for health surveillance at regular intervals, if appropriate, whereas under Directive 2009/148/EC, a new assessment must be available at least once every three years for as long as exposure continues. Unlike Directive 2009/148/EC, the health surveillance requirements under Directive 2004/37/EC do not provide that the person responsible for medical surveillance may indicate that medical surveillance must continue after the end of exposure for as long as they consider it necessary to safeguard the health of the person concerned.

The health surveillance requirements under Directive 2009/148/EC (asbestos) are therefore more stringent than the ones under Directive 2004/37/EC (carcinogens or mutagens). Such a difference is not justified by the specific hazards of asbestos, which is classified as a carcinogen.

Biological agents
Among the Directives that sets health record requirements, only Directive 2000/54/EC (biological agents) does not explicitly require keeping them up to date.

CPM6: Worker Consultation
The provisions on consultation of workers across Directives do not give rise to any coherence issues. Most of the individual Directives simply make a cross-reference to the relevant provisions of the Framework Directive, while some set specific consultation requirements.

8.1.3 Other key requirements

Limit values
None of the physical agent Directives contain the same requirements concerning the procedure of adoption of limit values. Directive 2002/44/EC (vibration) and Directive 2003/10/EC (noise) do not include provisions related to the procedure of adoption of new or amended limit values. Directive
2002/44/EC (vibration) only provides that amendments of 'non-essential elements' and of a purely technical nature to the Annex can be done through comitology. Directive 2003/10/EC (noise) provides that amendments of a purely technical nature shall be adopted by the Commission in line with:

› the adoption of directives in the field of technical harmonisation and standardisation with regard to the design, building, manufacture or construction of work equipment and/or workplaces;

› technical progress, changes in the most appropriate harmonised European standards or specifications and new findings concerning noise.

The limit values and action levels set under Directive 2013/35/EC (electromagnetic fields) and the risk they cover cannot be compared to those ones under Directive 2003/10/EC (noise) or Directive 2002/44/EC (vibration) concerning action values. However, under Directive 2013/35/EC, the Commission is empowered to adopt delegated acts under certain conditions amending, in a purely technical way, Annexes, so as to, among others, make adjustments to action levels where there is new scientific evidence, provided that employers continue to be bound by existing emission limit values.

Unlike the other physical agent directives, Directive 2006/25/EC (artificial optical radiation) explicitly mentions that any modification of the exposure limit values set out in the Annexes must be adopted by the European Parliament and the Council, in accordance with the procedure laid down in Article 137(2) of the Treaty.

Workers at particular sensitive risks

Directive 89/654/EEC (workplace), Directive 92/57/EEC (construction) and the two Directives on mineral extracting industries provide that pregnant women and nursing mothers must be able to lie down to rest in appropriate conditions \(^{(138)}\). Directive 2013/35/EU (electromagnetic fields) prescribes that, when carrying out risk assessment, the employer must give particular attention to, among others, pregnant workers. Directive 98/58/EC (pregnant/breastfeeding workers) does not include references to electromagnetic fields in its Annexes I and II. The fact that provisions on pregnant workers are spread across different directives can lead to a lack of clarity.

Inspection and enforcement measures

The Framework Directive does not set a general principle on penalties; only Directive 2013/35/EU (electromagnetic fields), Directive 2006/25/EC (artificial optical radiation) and Directive 2009/148/EC (asbestos) stipulate that MS shall provide for adequate penalties in the event of infringement of transposed legislation. Directive 94/33/EC (young people) also requires that MS shall lay down any necessary measures applicable in the event of failure to comply with transposing legislation.

Finally, only Directive 92/85/EEC (pregnant/breastfeeding workers) sets a specific judicial protection provision to enable all workers who should themselves be wronged by failure to comply with the obligations arising from this Directive to pursue their claims by judicial process and/or, in accordance with national laws and/or practices, by recourse to other competent authorities.

\(^{(138)}\) Note that Directive 98/58/EC (pregnant/breastfeeding workers) prohibits underground mining work for pregnant workers, workers that have recently given birth and workers who are breastfeeding.
Directive 92/57/EEC (construction) sets requirements concerning inspection of specific work equipment usually used in a construction site (scaffolding, lifting devices and accessories, cofferdams). This inspection obligation is fulfilled by the employer and it only applies to certain types of work equipment, complementing the general obligation of employers to inspect work equipment under Directive 2009/104/EC (work equipment). Work equipment is defined as ‘any machine, apparatus, tool or installation used at work’ and could therefore also cover those used in a construction site.

Hence, the requirements of Directive 2009/104/EC (work equipment) to record and keep the results of inspections and keep them at the disposal of the authorities concerned, as well as to provide physical evidence that the last inspection has been carried out when work equipment is used outside the undertaking, also apply to work equipment used in construction sites. In the absence of a ‘without prejudice’ clause, this leads to an overlap as far as the work equipment covered by Directive 92/57/EEC (construction) is concerned.

8.1.4 Conclusion

Overall, the EU OSH acquis is coherent. Contrary to some stakeholders’ views and comments, no contradictions or overlaps leading to double regulation between the requirements of the OSH Directives have been identified, with the exception of one instance concerning Directive 2009/104/EC (work equipment) and Directive 92/57/EEC (construction) in relation to inspection requirements.

Specific Directives have been developed in line with the Framework Directive, by setting additional requirements in relation to specific places, activities, risks or groups of workers. As the specific Directives have been adapted from 1989 to 2013, some provisions of a general nature which could be considered part of a framework have been introduced in the different specific Directives. The table below lists these provisions by CPM and key requirements.
CPM1: Risk assessment and derived risk management measures

- To update or periodically repeat the risk assessment
- To record the risk assessment on a suitable medium and to preserve in a suitable form the risk assessment to permit consultation at a later stage
- To take particular attention, when carrying out the risk assessment, to appropriate information obtained from health surveillance, including published information, as far as possible.
- To preserve in a suitable traceable form the protection and prevention measures derived from the risk assessment.
- To review the risk assessment based on the outcome of health surveillance

CPM2: Preventive and protective services

- To ensure that workers/services/persons designated for carrying out preventive and protective activities are informed and remain updated on all new workers and on the status of duties of all workers and/or about any specific element (e.g. young, pregnant) so as to be able to perform their duties covering all the personnel in the establishment/undertaking in an effective way.

CPM 3: Information to workers

- To inform all workers concerned in a comprehensible manner
- To inform all workers on the outcome/results of the risk assessment including an explanation of their significance and potential risks, on the circumstances in which workers are entitled to health surveillance, on safe working practices, in cases of abnormal situations, and before they take up an activity.
- To inform workers about any significant findings from the health surveillance, taking into account any medical confidentiality

CPM 4: Training requirements

- To organise training demonstrations where relevant
- To train workers on safe working practices to minimise exposure and on how to perform and execute tasks to avoid risks
- To ensure that workers at particular risk are subject to particular attention when drawing up and/or providing training.
- To ensure that workers are trained on how to act in case of special/abnormal circumstances (e.g. accident, incidents)

CPM 5: Health surveillance

- To ensure that medical examinations or surveillance must be made available during hours chosen by the worker
- To ensure that the doctor, the occupational health professional or the medical authority responsible for the health surveillance, has access to the results of the risk assessment where such results may be relevant to the health surveillance.
- To ensure that the doctor or the authority responsible for the health surveillance must be familiar with the exposure conditions or circumstances of each worker
- To take into account advice from the people/authority responsible for health surveillance in implementing risk management risks including assigning alternative work
- To ensure that result of health surveillance are kept under health records

Inspection and enforcement requirements

- MS shall provide for adequate penalties in the event of infringement of transposing legislation
- MS must introduce into their national legal systems such measures as are necessary to enable all workers who should themselves wronged by failure to comply with the obligations arising from this Directive to pursue their claims by judicial process (and/or, in accordance with national laws and/or practices) by recourse to other competent authorities.

The same types of findings were identified, but within groups of Directives that regulate very similar types of risks and contain very similar risk-management measures. This is mainly the case for the Physical Agent Directives (see Table 8-2) and the Chemical Agent Directives (see Table 8-3).
Textbox 8-2  Provisions which could apply to all physical agents

**CPM1: Risk assessment and derived risk management measures**

- The risk assessment must give particular attention to the extension of exposure beyond normal working hours under the employer's responsibility.
- The risk assessment must be followed by measures related to the limitation of the duration and intensity of the exposure.
- As a follow-up measure in case of exceedance of limit values, appropriate work schedules with adequate rest periods must be set up.

**CPM 3 and 4: Information and training to workers**

- Workers must be informed and trained on the nature of the risk.
- Specific information and training measures for workers at particular risk must be set up.

**CPM 5: Health surveillance**

- Health surveillance must take into account the application of risk management measures.
- Workers must be informed on the result of health surveillance which relate to them personally.
- Employers must be informed of any significant findings from the health surveillance, taking into account any medical confidentiality.
- Obligation to review the risk assessment based on the findings from health surveillance.
- Employer’s obligation to take account of advice from health surveillance bodies.

Concerning the Directives relating to chemicals, it is important to note that the provisions of Directive 98/24/EC (chemical agents) apply without prejudice to more stringent and/or specific provisions contained in Directive 2004/37/EC (carcinogens or mutagens), and that the provisions of Directive 2004/37/EC (carcinogens or mutagens) apply to asbestos whenever these provisions are more favourable to health and safety at work. Therefore, the analysis focused on the identification of provisions under Directive 2004/37/EC (carcinogens or mutagens) and Directive 2009/148/EC (asbestos) that could apply to all chemicals, and on measures under Directive 2009/148/EC (asbestos) that could apply to carcinogens or mutagens.

The table below lists the provisions that could apply to all hazardous chemical agents independently of the level and type of risk they entail.
Provisions which could apply to all chemical agents

**Textbox 8-3**

<table>
<thead>
<tr>
<th>CPM1: Risk assessment and derived risk management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>› The obligation to supply the authorities responsible at their request with the information used for making the assessment</td>
</tr>
<tr>
<td>› Measures related to the demarcation of risk areas and use of adequate warning and safety signs for relevant hazardous chemical agents. This would involve the development of selection criteria as to which hazardous chemical agents should be covered by this management measure.</td>
</tr>
<tr>
<td>› Substitution requirements</td>
</tr>
</tbody>
</table>

**CPM 3 and 4: Information and training to workers**

› Access of workers and/or any workers’ representatives to anonymous collective information

› Employer obligation to keep an up-to-date list of the workers engaged in the activities posing an occupational risk and to ensure access rights to the list (for the doctor and/or competent authority/persons and the exposed workers themselves).

**CPM 5: Health surveillance**

› Measure requiring that the doctor or the authority responsible for the health surveillance must be familiar with the exposure conditions or circumstances of each worker and the possibility to review the results of the health surveillance, upon request of the worker concerned or the employer.

Some provisions under Directive 2009/148/EC (asbestos) are applicable to all carcinogens:

› Employer obligation to indicate, in the register on worker exposure, the nature and duration and the exposure to which they have been subjected;

› Mandatory health surveillance prior to exposure;

› Health surveillance at regular intervals;

› Medical indication where necessary to continue health surveillance after exposure.

The analysis identified similar types of findings concerning Directive 2009/104/EC (work equipment), Directive 1999/92/EC (ATEX) and Directive 2000/54/EC (biological agents).

Despite the differences between the Chemical Agent Directive and Directive 2000/54/EC (biological agents), several provisions applying to workers exposed to chemical agents could also apply to worker exposed to biological agents. These are:

› The obligation during the risk assessment to take into account the effect of preventive measures, to obtain additional information from suppliers, to take into account conclusions to be drawn from health surveillance, to include activities with foreseeable exposures in the risk assessment and include a justification by the employer that the nature and extent of the risks make a further detailed assessment unnecessary;

› The obligation to update health record;

› The obligation to inform workers on how to detect health effects of exposure and how to report them as required under certain physical agent Directives.

By virtue of its structure, the OSH _acquis_ includes similar common processes and mechanisms (CPMs) that are regulated across directives. However, while the general requirement is set by the
Framework Directive, the other OSH directives refers to the Framework Directive (typically through a cross-reference to the provision relevant to a specific CPM) or establishes more detailed requirements targeting to the particular risks covered by the individual directive, hence not leading to overlaps as the various requirements for one CPM will apply in a complementary and tailored to the risk fashion. The few overlaps identified, i.e. when an identical requirement features in different directives, do not lead to double-regulation, as the similar requirements are set by directives that do not apply to the same workplace or workers, or the employer will apply this identical requirement only once. These include:

- Directive 89/656/EC (Use of PPE) sets requirements to use instructions and, if appropriate, specific demonstrations, in the wearing of PPE while several other individual directives include specific training of workers related to the correct use of PPE. Such duplication could be seen as overlaps, since training of workers under the Use of PPE Directive should be sufficient to cover all kinds of PPE used in different activities and linked with a variety of risks.


8.2 Coherence between the OSH Directives and other EU measures and/or policies and international instruments (EQC2)

**EQC2**: How is the interrelation of the Directives with other measures and/or policies at European level also covering aspects related to health and safety at work, such as EU legislation in other policy areas (e.g. legislation: REACH, Cosmetics Directive\(^{(139)}\), Machinery Directive, policy: Road Transport Safety, Public Health, Environment Protection), European Social Partners Agreements or ILO Conventions?

8.2.1 General observations on ‘external’ coherence

This section presents the findings related to the ‘external’ coherence of the OSH *acquis*; the interrelation of OSH Directives with other measures and/or policy measures also covering aspects related to health and safety at work, at both the European and international levels.

The methodology followed for EQC 2 is similar to the methodology followed under EQC1. However, in addition to mapping overlaps and inconsistencies, we also mapped interfaces and gaps.

Following the same approach as EQC1 while mapping potential interfaces, overlaps and inconsistencies, we complemented our findings with information from the interviews of EU and national stakeholders.

Results of the interviews on the one hand complemented the identification of non-OSH EU legal acts and, on the other hand, provided additional information on the evaluation of coherence between OSH and non-OSH EU legislation. As for sub-question 1, any available information relevant to the evaluation of coherence has also been extracted from the NIRs.

\(^{(139)}\) Now the Cosmetics Regulations
8.2.2 Coherence between OSH Directives and relevant, non-OSH EU legislation

The overview of interfaces (overlaps, inconsistencies, gaps, synergies) between OSH Directives and relevant, non-OSH EU legislation shows that, in several cases, one specific non-OSH EU act or several inter-related non-OSH EU acts are relevant in terms of coherence to a group of OSH Directives. Therefore, such interfaces are introduced below per non-OSH EU legislation.

Machinery Directive

Directive 2006/42/EC (machinery) applies to machines which include interchangeable equipment, safety components, lifting accessories, chains ropes and webbing and removal mechanical transmission devices. In order to be allowed to place machinery on the market, manufacturers must ensure, among other items, that it complies with relevant health and safety requirements set under Annex I of the Machinery Directive. This Directive presents interfaces with a number of OSH Directives.

Interfaces with the Work Equipment Directive

With regard to the Work Equipment Directive, the definition of work equipment is broader than that of machinery, but machinery for professional use accounts for an important category of work equipment.

Pursuant to the Work Equipment Directive, employers are required to make available to workers work equipment suitable for the work to be carried out, which complies both with the provisions of any relevant EU Directive that is applicable to it and with the minimum requirements laid down in Annex I, to the extent that no other Directive is applicable. In other words, the machinery falling under the scope of the Machinery Directive will have to comply in priority with the health and safety requirements under the Machinery Directive and not the ones set under Annex I to the Work Equipment Directive.

The Machinery Directive does not apply to the placing on the market of used or second-hand machinery. As underlined by the guide on the application of the Machinery Directive, machinery that was placed on the market before the application of the Machinery Directive is therefore subject to the Work Equipment Directive Annex I health and safety requirements (140).

The health and safety requirements under the two Directives are not similar, as the requirements under the Machinery Directive are often more elaborated, e.g. the lighting ergonomic requirements. The Machinery Directive contains requirements that do not exist under the Work Equipment Directive (e.g. on design of machinery to facilitate its handling). However, these differences can be explained by the difference of approach: the Machinery Directive considers the equipment from a manufacturing perspective, whereas the Work Equipment Directive sets requirements applicable at the workplace during the use of the equipment.

Under the Machinery Directive, manufacturers must provide several types of instructions to ensure that machinery is used safely (e.g. indication whether a specific training is required, indication on

the type and frequency of inspections and maintenance required\(^{(141)}\). These instructions constitute an essential tool to enable employers to apply the provisions under the Work Equipment Directive. Therefore, there is an instance of positive synergy between the two Directives.

Interface between the Machinery Directive and the physical agent Directives

Concerning the physical agents Directives, Annex I to Directive 2006/42/EC (machinery) includes health and safety requirements on physical agents, like the reduction of noise, vibration and radiation as part of the machinery design and construction.

Employers can rely on information on machinery and equipment physical effects as generated under Directive 2006/42/EC (machinery) when carrying a risk assessment on relevant individual risks. Such synergies are sometimes reflected in the individual OSH directives, such as Directive 2003/10/EC (noise), which requires employers to give particular attention to information on noise emission provided by manufacturers of work equipment, in accordance with the relevant EU directives.

Interface between the Machinery Directive and the Use of PPE Directive

The Machinery Directive provides that machinery must be designed and constructed to take account of the constraints to which the operator is subject as a result of the necessary or foreseeable use of PPE. It also requires that instructions for protective measures must include, where appropriate, the PPE to be provided. Such requirements are seen as positive synergies leading to a better application of the Use of PPE Directive.

Interface between the Machinery Directive and the ATEX Directive

Concerning explosions, Annex I point 1.5.7 of the Machinery Directive requires that machinery must be designed and constructed in such a way as to avoid any risk of explosion posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery. It adds that Machinery must comply, as far as the risk of explosion due to its use in a potentially explosive atmosphere is concerned, with the provisions of the specific Community Directives. The application of Directive 2006/42/EC (machinery) prevents or limits worker exposure to explosions at the workplace.

Directive 2013/30/EU Safety of offshore oil and gas operations

Directive 2013/30/EU sets minimum requirements for preventing major accidents in offshore oil and gas operations, and limiting the consequences of such accidents. In particular, the Directive sets extensive requirements to the operator/owner (report on major hazards, internal emergency response plan and design notification). Unlike Directive 92/91/EEC (drilling), Directive 2013/30/EU does not set minimum safety requirements (e.g. on rescue, fire safety) but rather sets procedures to ensure that these safety requirements are correctly applied and implemented.

Directive 2013/30/EU mentions that it applies without prejudice to the requirements laid down in Directive 92/91/EEC (drilling). In other words, the requirements of these two Directives will both apply to offshore oil and gas sites.

Operators/employers of an off-shore oil and gas operation will have to prepare both a health and safety document under Directive 92/91/EEC (drilling) and reports on major hazards, internal

\(^{(141)}\) See for further details Point 1.7.4 Annex I to Directive 2006/42/EC on instruction requirements
emergency response plan and design notification under Directive 2013/30/EU. Several instances of potential overlaps between the reporting requirements under the two Directives have been identified. These are to some extent justified by the different scope of the two directives. Directive 92/91/EEC (drilling) sets measures targeting health and safety of workers, whereas Directive 2013/30/EU set general safety measures to avoid major accidents which are not specific to workers.

In order to limit these overlaps and to build synergies between the two reporting requirements, Recital 26 of Directive 2013/30/EU provides that the report on major hazards should be complementary to the safety and health document referred to in Directive 92/91/EEC (drilling). In the same vein, Annex I to Directive 2013/30/EU requires that the report on potential hazards, the notification of well operations must contain information relevant to other requirements under this Directive, obtained pursuant to the major accident prevention requirements of Directive 92/91/EEC (drilling).

The Drilling Directive also requires that employer must, without delay, report to the competent authorities any serious and/or fatal occupational accidents and situations of serious danger. This information can be used by competent authorities to report information required under Annex IX, point 2) of Directive 2013/30/EU (i.e. fatal accident, serious injuries to five or more persons).

Member States must ensure that workers’ representatives are consulted at the relevant stages in the preparation of the report on major hazards for a non-production installation. Recital 18 provides that such consultation should be carried out in accordance with Directive 92/91/EC (drilling).

Employment rights related acts

Several EU legal texts set employment rights related to pregnant/breastfeeding workers. Firstly, both the Charter of Fundamental Rights of the European Union and Directive 2006/54/EC (equal treatment) set provisions aiming at protecting workers against discrimination linked to pregnancy and maternity. In addition, Directive 2003/88/EC (working time) sets rules on working time. Directive 92/85/EEC (pregnant/breastfeeding workers) also sets rules that relate to employment rights/labour law, notably on night work, maternity leave, time-off for pre-natal examination and employment rights as such. Member States have often transposed the Directive through a combination of labour law and OSH-related legislation reflecting the dual nature of the Directive. However, the objectives of these texts are different. Directive 92/85/EEC (pregnant/breastfeeding workers) specifically aims at improving the safety and health at work of pregnant workers and workers who have recently given birth or who are breastfeeding, while Directive 2006/54/EC (equal treatment) focuses on ensuring the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation. In addition, Directive 2006/45/EC contains a ‘without prejudice’ clause which refers to provisions concerning the protection of women as regards pregnancy and maternity, and would therefore apply to Directive 92/85/EEC (pregnant/breastfeeding workers). Therefore, it is considered that there is no coherence issue in this instance.

Both Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people) set specific night work requirements. Directive 94/33/EC (young people) also sets specific working time and rest periods for young workers.
According to Recital 14 of Directive 2003/88/EC (working time), specific standards laid down in other Community instruments relating, for example, to rest periods, working time, annual leave and night work for certain categories of workers should take precedence over the provisions of this Directive. The working time provisions under both Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people) are very specific to a category of worker at particular risk, and take precedence over the general requirements under Directive 2003/88/EC (working time). There is no coherence issue in this instance.

**EU legal framework on public procurement**

Public procurement policy includes certain considerations relevant to occupational health and safety. The legal framework in the EU is provided by the Procurement Directives, namely Directive 2014/24/EU replacing Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts; Directive 2014/25/EU replacing Directive 2004/17/EC coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors; and Directive 2014/23/EU on the award of concession contracts.

All these directives specifically stipulate in their recitals that 'measures aiming at the protection of health of the staff involved in the production process, the favouring of social integration of disadvantaged persons or members of vulnerable groups amongst the persons assigned to performing the contract or training in the skills needed for the contract in question can also be the subject of award criteria or contract performance conditions provided that they relate to the works, supplies or services to be provided under the contract'. Examples of such criteria or conditions cover the employment of long-term job-seekers, the implementation of training measures for the unemployed or young people. The relevant provision concerning the award criteria mentions ‘social characteristics’ as a possible criterion, without further detail or specific reference to occupational health and safety obligations on behalf of the tenderers.

Moreover, all EU public procurement Directives define ‘work’ as the outcome of building or civil engineering works taken as a whole which is sufficient in itself to fulfil an economic or technical function and include an elaborate listing of construction works in their Annexes. Therefore, this Framework interacts with the works carried out at construction sites.

It should be noted here that the previous Directive, 2004/18/EC, explicitly included obligations relating to employment protection provisions and working conditions as obligations to be considered when executing the works. The new Directive 2014/24/EU only sets the non-payment of taxes or social security contributions as a ground for exclusion.

The existence of the guidelines Buying Social – a guide to taking account of social considerations in public procurement (142) partially addresses the taking into account of occupational health and safety aspects in public procurement, albeit to a lesser extent. In order to promote the implementation of OHS requirements, the Commission encourages contracting authorities to include social considerations and take into account social policies through the implementation of socially responsible public procurement (SRPP) procedure. As regards the construction sector, the document Buying Social – a guide to taking account of social considerations in public procurement, gives indicative examples of how social concerns can be included in the technical specifications of

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(142) DG Employment, social affairs and equal opportunities (2010), Buying Social – a guide to taking account of social considerations in public procurement.
public works contracts (inter alia, compliance with certain ILO Conventions, adoption of measures aiming at avoid accidents on the construction site, such as signposting, conditions for storage of dangerous products or routes for transport of equipment).

Directive 97/70/EC (safety regime for fishing vessels of 24 meters)

The Fishing vessels Directive has a broader scope than Directive 97/70/EC, as the latter applies to fishing vessels of 24 meters and more (compared to 15 or 18 metres for the Fishing vessels Directive). Directive 97/70/EC (safety regime for fishing vessels of 24 metres) applies without prejudice to the Fishing vessels Directive. In other words, the requirements of both Directives both apply to fishing vessels over 24 metres.

Directive 97/70/EC lists safety standards for sea-going vessels. Some of the requirements of the annexes of the Fishing vessels Directive are also covered under Directive 97/70/EC (e.g. seaworthiness and stability, mechanical and electrical installations, radio installation, fire detection and firefighting). However, the requirements set by Directive 97/70/EC to avoid accidents at sea are more focused on the design and structure of the vessels, while the Fishing vessels Directive concerns primarily the safety of workers while the vessel is at sea.

Therefore, there are no overlaps between the minimum health and safety requirements under the Fishing vessels Directive and the safety standards under Directive 97/107/EC, but both Directives are complementary. However, it was highlighted during EU stakeholder interviews and in the NIRs that the fact that the annexes to the Fishing vessels Directive cover similar issues as Directive 97/70/EC is problematic and causes unnecessary confusion. It was thus stated that fewer pieces of EU legislation was preferable, and should be sought whenever fusion is possible.

REACH Regulation
Article 2(4) of Regulation (EC) No 1907/2006 (REACH) provides that it applies without prejudice to EU workplace legislation, including Directive 98/24/EC (chemical agents), and Article 14(1) of REACH states that a chemical safety assessment (CSA) shall be performed and a chemical safety report (CSR) completed without prejudice to Article 4 of Directive 98/24/EC (chemical agents) on risk assessment. At the same time, Article 1(3) of the Framework Directive provides that it ‘shall be without prejudice to existing or future national and Union provisions which are more favourable to protection of the safety and health of workers at work’. This shows that the legislator’s intention was to ensure that OSH legislation (including Directive 98/24/EC) and REACH acts could co-exist without one prevailing over the other, because of their difference of scope, actors involved and obligations as underlined in the paragraphs below.

The aim of REACH as described in Article 1(1) is ‘to ensure a high level of protection of human health and the environment, including the promotion of alternative methods for assessment of hazards of substances, as well as the free circulation of substances on the internal market while enhancing competitiveness and innovation.’ It covers workers, self-employed professionals, consumers and the environment whereas Directive 98/24/EC only focuses on the protection of workers.
Whereas REACH places obligations on manufacturers, importers, and downstream users in the supply chain, Directive 98/24/EC (chemical agents) imposes requirements on the employers, who could be manufacturers, importers, downstream users, distributors or suppliers under REACH.

REACH applies to the manufacture, placing on the market or use of substances (chemical elements and their compounds as defined in REACH Article 3(1)) on their own, in mixtures or in articles and to the placing on the market of mixtures. In contrast, OSH chemical legislation applies to worker exposure to chemical agents released by any work activity, whether or not produced intentionally and whether or not placed on the market.

A risk assessment under REACH is carried out by registrants of chemical substances, which must consider all stages of the life-cycle of the substance resulting from the manufacture and identified uses (143) whereas, under Directive 98/24/EC (chemical agents), employers must carry out a risk assessment at a specific workplace.

Worker exposure to chemical substances is initially controlled under REACH through risk management measures identified by registrants and circulated in the supply chain by safety data sheets (SDS). SDS should reflect all the identified uses of the chemical substances in the supply chain and related control measures. Under Directive 98/24/EC (chemical agents) worker exposure to chemical agents is mainly controlled by measures identified through the employers risk assessment. The employer risk assessment must take into account the information provided in the SDS for the chemicals present and used in the workplace.

The REACH Registration procedure sets differentiated requirements and exemptions based on the tonnage of chemical substances manufactured and placed on the market (144). However, other obligations under REACH, namely authorisation and restrictions, apply regardless of the tonnage of the chemical substance. In contrast, Directive 98/24/EC (chemical agents) applies to all chemical agents at the workplace, independent of the quantity used at that workplace.

SDS are the main tool for ensuring that suppliers communicate enough information along the supply chain to allow safe use of their substances and mixtures. Annex II to REACH, which sets the requirements for the compilation of SDS, refers a few times to Directive 98/24/EC (chemical agents). These references relate to the use of data from the SDS generated through REACH in the implementation of OSH requirements. REACH requires that the information provided relates to the protection of human health and safety and the environment in order to help employers implement suitable working procedures and organisational measures in accordance with OSH legislation. It also specifies that the information on the SDS must enable the employer to determine whether any hazardous chemical agents are present in the workplace to assess any risk to the health and safety of workers arising from their use (i.e. information on occupational exposure controls) and to set control measures according to Article 5 of the Chemical Agents Directive (i.e. handling and storage of chemicals).

(143) Annex I to REACH
(144) The authorisation and restriction obligations are not based on tonnage.
As mentioned in the guidance for employers on controlling risks from chemicals \(^{(145)}\), occupational exposure limits (OELs) are reference levels for control of exposure to hazardous substances. An OEL is the level that describes ‘adequate control of exposure by inhalation’.

OELs can differ from one country to another. For any chemical agent for which an indicative OEL value is established at the EU level, Member States must establish a national exposure limit value, taking into account the Union indicative limit value (IOEL), determining its nature in accordance with national legislation and practice \(^{(146)}\). In other words Member States can set national OELs higher, lower, or with the same values as the values of the EU IOELs for the same substance. According to Article 3(9) of the Chemical Agents Directive, the Commission shall carry out an assessment of how MSs have taken account of IOELs in establishing national OELs, although no such analysis has been seen. Binding OELs (BOELs) are adopted, taking into account socio-economic factors, feasibility factors, as well as the factors considered when establishing IOELs. For any chemical agent for which a BOELV value is established at the EU level, Member States must establish a corresponding national binding OEL value which can be stricter than, but cannot exceed the Community limit value \(^{(147)}\). These OELs are adopted based on the independent opinion of the SCOEL and in cooperation between Member States and the Commission.

REACH introduced a new approach to setting exposure reference levels for chemicals based on human health and environmental effects covering all exposure routes and environmental compartments. Manufacturers or importers manufacturing or importing more than 10 tonnes per year of a chemical substance subject to registration must derive levels of exposure to the substance above which humans should not be exposed, known as Derived No Effect Levels (DNELs) in their registration dossier (See Annex I point 1 of REACH). All relevant exposure routes must be taken into account when defining DNELs (i.e. oral, dermal and inhalation).

REACH also requires that Derived Minimum Effect Levels (DMELs) must be set by registrants for substances where no safe threshold can be set (e.g. carcinogenicity).

DNELs/DMELs are also part of the risk characterisation to determine an unacceptable risk that would justify a restriction. Member States Competent Authorities or ECHA and ECHA’s Risk Assessment Committee (RAC) set up the DNELs/DMELs on the basis of the registration dossier. DNELs/DMELs established by registrants are also part of the risk characterisation in the authorisation procedure in view of assessing if the applicant’s proposed risk management measures are appropriate and effective. The RAC may re-define DNELs/DMELs during evaluation of applications for authorisation and establish a ‘reference DNEL’ and dose response curves for non-threshold substances. Unlike OELs, the DNELs cannot differ from one Member State to another.

The main differences between DNELs and OELs are their objectives and the methodologies used for their derivation. OELs are explicitly developed for occupational safety purposes, whereas DNELs have been set up to support industry in doing risk assessments and fulfilling obligations under REACH, as well as to establish a high level of protection during the use of chemicals. The

\(^{(145)}\) European Commission, guidance for employers on controlling risks from chemicals Interface between Chemicals Agents Directive and REACH at the workplace (October 2010)

\(^{(146)}\) Information retrieved from explanatory text on OELs and their procedure of adoption available at: file:///C:/Users/fp/Downloads/EMPL-2008-01677-00-00-EN-ORI-00-%20(3)%20(2)%20(1).pdf

\(^{(147)}\) Ibid.
REACH guidance for DNELs suggests using default factors if substance specific data is missing, whereas for OELs most countries, as well as SCOEL, argue that expert judgment is needed to fill this data gap and that no default factors should be provided\(^\text{148}\). Furthermore the point of departure of the analysis is not similar\(^\text{149}\). The table below contains the DNELs and IOELs for the same substances.

<table>
<thead>
<tr>
<th>Substance</th>
<th>DNELs</th>
<th>IOELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,4 dichlorobenzene</td>
<td>0.6 ppm</td>
<td>20 ppm</td>
</tr>
<tr>
<td>N-methyl-2-pyrrolidone</td>
<td>10 mg/m3 ≈ 2.5 ppm</td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

Source: ECHA and SCOEL websites

It is important to note that, since 1991, around 200 IOELs have been adopted. In comparison, since 2008 around 12,500 DNELs have been set through the REACH registration procedure.

Section 8 of Annex II to REACH requires that the SDS must specify currently applicable specific control parameters including the national occupational exposure limit values and biological limit values that correspond to EU occupational exposure limit values and biological values in accordance with Directive 98/24/EC (chemical agents) and Directive 2004/37/EC (carcinogens or mutagens). It also mentions that, where a Chemical Safety Report is required, DNELs must be given for the relevant exposure scenarios. This scenario creates confusion in particular for downstream users which may see two different values reported in the SDS for the same substance. The process of adoption of OELs under Directive 98/24/EC (chemical agents), which unlike DNELs are only applicable to workers exposed to chemical agents, and the methods used to derive them\(^\text{150}\), are different from those for DNELs under REACH. However, neither the REACH Regulation nor Directive 98/24/EC (chemical agents) set a mechanism to articulate the application of OELs under national legislation\(^\text{151}\) and DNELs for the same chemical substances\(^\text{152}\). This can lead to potential overlaps and confusion among employers about which limit values they must take


\(^{\text{149}}\) Information retrieved from a presentation of Tim Bowmer RAC Chairman, DNEL setting using ECHA Guidance: NMP and DCB as examples at the REACH and Occupational Safety and Health (OSH) legislation, November 2014 available at: http://ec.europa.eu/enterprise/sectors/chemicals/reach/events/index_en.htm#h2_2

\(^{\text{150}}\) Mainly through an independent body SCOEL whereas most DNELs are set by registrants. However, as already mentioned in the main text, DNELs can be revised by Member State Authorities and RAC during the restriction and authorisation procedures.

\(^{\text{151}}\) The values introduced at the national level can be more stringent from the ones adopted at Union level and can differ from one country to another.

\(^{\text{152}}\) Please note however that Articles 5(4) and 5(6) of Commission Decision 95/320/EC setting up SCOEL contain provisions requiring the collaboration of SCOEL with other scientific committees and Union Agencies.
into account in their risk assessment. In particular, as indicated above, the SDS under REACH mentions both the OELs and the DNELs applicable to the chemical, while OELs and DNELs values may differ. This raises confusion as to which value must be used for the risk assessment with some consequences for the choice of appropriate risk management measures.

Employers carrying out risk assessment procedures and setting management measures under the Chemical Agents Directive and Carcinogens or Mutagens Directive must rely on the information transmitted down the supply chain through the SDS under REACH (including results of the Chemical Safety Assessment (CSA), such as exposure scenarios and information on exposure control measures and on handling and storage).

Section 7 of Annex II to REACH provides that information in the SDSs on handling and storage must assist the employer in devising suitable working procedures and organisational measures according to Article 5 of Directive 98/24/EC.

Section 8.2.1 of Annex II to REACH provides that information on appropriate control measures (e.g. personal protective equipment) under SDSs must be sufficient to enable the employer to carry out an assessment of risk to the safety and health of workers arising from the presence of the substance or mixture, in accordance with Articles 4 to 6 of Directive 98/24/EC.

Moreover, information on chemical substances generated under REACH and communicated through SDSs can be useful for drawing up safety and health guidance documents. Information on workers’ exposure to chemicals generated under REACH could also be useful for the health surveillance of workers and to fulfil essential health and safety requirements, including in relation to protection from harmful atmospheres. In other words, the SDSs provide important information to employers to perform their risk assessment at the workplace and to adopt the adequate risk management measures.

If the exposure scenarios annexed to the SDS do not match the specific conditions of use of downstream users (e.g. employers), they should communicate to their suppliers these specific conditions. This may lead to revision of the SDS by the supplier: to include the specific conditions of the downstream user; to the downstream user changing their conditions of use; to the downstream user conducting their own CSR; or to the downstream user changing suppliers to one that has included their conditions of use in its SDS. However, some employers expressed their concern on the difficulties they encounter to use information from the SDSs. They stress that it is a very complex and burdensome exercise to use information from SDSs.

Article 6 of Directive 98/24/EC (chemical agents) provides that, in order to eliminate or reduce to a minimum the risk from a hazardous chemical agent to the safety and health of workers at work, ‘substitution shall by preference be undertaken’. Directive 2004/37/EC (carcinogens or mutagens) provides that the employer must reduce the use of a carcinogen or mutagen at the place of work, in particular by replacing it, insofar as is technically possible, by a substance, preparation or process which, under its conditions of use, is not dangerous or is less dangerous to workers' health or safety, as the case may be. Under REACH the substitution principle applies, under the provisions on both restriction and authorisation. In the case of restriction, substitution is encouraged by the limitations (which may be a prohibition) imposed on the manufacture, use and/or placing on the market of the substance, while authorisation puts strong pressure on companies to move to alternatives within a defined timeframe. In both cases, the REACH objective to ensure the protection of human health (including workers) is enhanced.
One could argue that REACH will generate more data, which will support employers’ identification of alternatives that are less hazardous than the chemical substances previously used.

According to Article 58(2) of REACH it is possible to exempt from the authorisation requirements uses or categories of uses ‘provided that, on the basis of the existing specific Community legislation imposing minimum requirements relating to the protection of human health or the environment for the use of the substance, the risk is properly controlled’. The decision to grant an exemption from the authorisation requirement under Article 58(2) of REACH is taken by the Commission, based on ECHA’s recommendations. The applicability of Article 58(2) of REACH on the basis of OSH legislation has been interpreted by the EU Court of Justice on 25 September 2015 (Case T-360/13). The Court mentioned that, in absence of a specific limit value [for chromium trioxide] under Directive 98/24/EC and Directive 2004/37/EC the reference to the application of these Directives does not constitute ‘existing specific Community legislation imposing minimum requirements relating to the protection of human health or the environment for the use of the substance’ within the meaning of Article 58(2) of REACH (153).

Concerning the interface between REACH and Directive 2009/148/EC (asbestos), entry 6 of Annex XVII to REACH prohibits the manufacture, placing on the market and use of asbestos fibres and of articles and mixtures containing these fibres added intentionally. It allows, however, MSs to exempt the placing on the market and use of diaphragms containing chrysotile under very strict conditions. It also permits the use of articles containing asbestos fibres already installed and/or in service before 1 January 2005, although MSs may restrict, prohibit or make the use of such articles subject to specific conditions until they are disposed of or reach the end of their service life (154).

Such restrictions are in line with Directive 2009/148/EC (asbestos), which provides that, without prejudice to the application of other Union provisions on the marketing and use of asbestos, activities which expose workers to asbestos fibres during the extraction of asbestos or the manufacture and processing of asbestos products or the manufacture and processing of products containing intentionally added asbestos must be prohibited, with the exception of the treatment and disposal of products resulting from demolition and asbestos removal, which includes recycling of waste containing asbestos.

It is interesting to note that in the opinion by RAC and SEAC (as part of the on-going process to amend the restriction in entry 6 of Annex XVII to REACH), the benchmark value used in the worker risk assessment considered by the Committee was of 250 f/m$^3$, which is 400 times lower than the value for maximum airborne fibre concentration in the Asbestos Directive. The value used by ECHA was derived using current ECHA guidance for DNEL/DMEL derivation. Such a difference indicates that perhaps the limit value for airborne asbestos (or at least for chrysotile) could need reconsideration. SCOEL is currently considering the need to review the limit values for asbestos.

(153) Case T-360/2013
(154) According to the interpretation of the Commission’s services responsible of REACH, communicated to MSs and members of RAC and SEAC Committees of ECHA, the exemption covers not only the placing on market and use of diaphragms containing asbestos (for existing electrolysis installations) but also of bulk asbestos fibres used exclusively for the maintenance and repair of such diaphragms. Note that this entry will probably be modified by a Commission Regulation likely to be adopted in the first half of 2016. The possibility for Member States to allow placing on the market (which covers importation) will end on entry into force and, as regards use, will be time limited until 30 June 2025.
CLP Regulation

The CLP Regulation entered into force on 20 January 2009. It was adopted to align EU law to the United Nations Globally Harmonised System criteria for classification and labelling of hazards, in order to facilitate trade while protecting human health and the environment. The CLP Regulation regulates the classification procedures. Title III provides rules for labelling of substances and mixtures according to any hazard identified. Title IV sets in place requirements for the packaging of hazardous substances or mixtures (design, materials, fastenings). Finally, Title V refers to the harmonised classification and labelling of substances.

Directive 98/24/EC (chemical agents), Directive 2004/37/EC (carcinogens or mutagens) Directive 94/33/EC (young people) and Directive 92/85/EC (pregnant/breastfeeding workers) were recently amended by Directive 2014/27/EU, in order to align the previous classification and labelling system with the new system laid down in the CLP Regulation.

As underlined by the Commission guidance on the new labelling systems, the new CLP Regulation will oblige employers to revise certain measures under these Directives (e.g. identification of hazardous chemicals, the risk assessment and derived measures, the safe use handling and storage of chemicals substances).

Finally, Directive 2014/27/EU amended Directive 92/58/EEC (OSH signs), which now refers several times to the CLP Regulation. Annex I point 12 of Directive 92/58/EEC (OSH signs) provides that if there is no equivalent warning sign under this Directive for areas, rooms or enclosures used for the storage of significant quantities of hazardous substances or mixtures, the relevant hazard pictograms (as laid down in the CLP Regulation) must be used.

Annex III point 1 provides that containers used at work for chemical substances or mixtures classified as hazardous according to the criteria for any physical or health hazard class in accordance with CLP Regulation, and containers used for the storage of such hazardous substances or mixtures, together with the visible pipes containing or transporting such hazardous substances and mixtures, must be labelled with the relevant hazard pictograms, in accordance with that Regulation.

Such references reflect and implement the complementarity between the CLP Regulation and Directive 92/58/EEC (OSH signs).

Some stakeholders have raised some comments on the consistency of the CLP Regulation and Directive 2004/37/EC (carcinogens or mutagens) concerning the use of man-made mineral fibres.

In brief, two different concerns have been expressed. Some have argued that, despite these mineral fibres not being classified as carcinogens (according to Note Q Annex VI of the CLP), they are still subject to an indicative OEL. Others, however, were concerned by the issue of some man-made fibres not being classified as carcinogens (under CLP).

This latter comment is not a legal coherence problem but is, rather, a technical issue related to the classification criteria under CLP. This is, however, consistent with the current scientific evidence, which shows that not all MMMFs are equally harmful.

(155) European Commission, Chemicals at work – a new labelling system, Guidance to help employers and workers to manage the transition to the new classification, labelling and packaging system (February 2013)
On the issue of an indicative OEL, EU legal texts setting limit values do not currently include any for man-made mineral fibres. At present, therefore, there is no problem. The SCOEL provided a recommendation for an occupational exposure limit value for man-made mineral fibres with no indication for carcinogenicity (not classified as carcinogens under CLP) in 2012 (156). Since then, the procedure for adoption has been on-going.

The assumption by some stakeholders appears to be that, if these MMMFs have an OEL, then this would be a Limit Value, as provided for in the CMD, and this would imply that they were to be subject to the full provisions of the CMD – despite not being labelled as carcinogenic (a clear conflict). If, however, the SCOEL recommendation was adopted as an IOEL value (as provided for in the CAD) this would not be seen as a coherence issue since, even though certain man-made mineral fibres are not classified as carcinogens under the CLP (therefore not falling within the scope of the CMD), they could still be considered hazardous chemical agents under the CAD and be assigned an IOEL.

**ATEX Equipment**

Directive 1999/92/EC (ATEX) lays down the minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres at the workplace, whereas Directive 94/9/EC (ATEX Equipment) applies to the placing on the market, putting into service and design of equipment and protective systems intended for use in potentially explosive atmospheres. Directive 94/9/EC (ATEX Equipment) is a New Approach Directive, laying down essential elements and safety requirements further developed through standardisation. Directive 2014/34/EU, adopted in February 2014 is a recast of Directive 94/9/EC (ATEX Equipment). It contains new provisions in line with the ‘new legislative framework’ for marketing of products (rules on market surveillance, accreditation bodies, CE marking), and will come into force in April 2016.

The main interaction between the two Directives concerns the selection of equipment and protective systems to be used in the different zones as defined under Directive 1999/92/EC (ATEX).

According to Annex II B of Directive 1999/92/EC (ATEX), if the explosion protection document based on a risk assessment does not state otherwise, equipment and protective systems for all workplaces in which explosive atmospheres may occur must be selected on the basis of the categories set out in Directive 94/9/EC. It specifies that in zone 0 or zone 20, category 1 equipment applies; in zone 1 or zone 21, category 1 or 2 equipment applies; and in zone 2 or zone 22, category 1, 2 or 3 equipment must apply.

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(156) Recommendation from the Scientific Committee on Occupational Exposure Limits for man made-mineral fibres (MMMF) with no indication for carcinogenicity and not specified elsewhere (SCOEL/SUM/88 March 2012)

(157) ‘Equipment’ means machines, apparatus, fixed or mobile devices, control components and instrumentation thereof and detection or prevention systems which, separately or jointly, are intended for the generation, transfer, storage, measurement, control and conversion of energy and/or the processing of material and which are capable of causing an explosion through their own potential sources of ignition.
As underlined in the ATEX Equipment guidelines, work equipment not falling under the definition of ‘equipment given in Directive 94/9/EC cannot be compliant with this Directive; it must nevertheless be compliant with Directive 1999/92/EC (158).

In the NIRs, some Member States expressed some concerns on the different definitions of zones across the EU (159), leading to situations where in one country certain equipment can be used under a certain zone, whereas this is not the case in another country, creating barriers in the free movement of goods despite the adoption of Directive 94/9/EC (ATEX equipment). Other Member States also identified difficulties in the application of Directive 1999/92/EC (ATEX) for equipment and protective systems placed on the market before the entry into force of Directive 94/9/EC (ATEX equipment) and equipment not falling under Directive 94/9/EC (ATEX equipment).

Sharp Injuries Directive

Directive 2010/32/EU (sharp injuries) was adopted in order to give legal force to the Framework Agreement on prevention of sharp injuries in the hospital and healthcare sector, concluded by the EU social partners EPSU (European Public Services Union) and HOSPEEM (European Hospital and Healthcare Employers’ Association) on 17 July 2009. The Directive aims at achieving the maximum possible level of safety and protection against occupational incidents through the prevention of sharp injuries to workers caused by all medical sharps, including needle-sticks.

The Directive applies to individuals who work in the hospital and healthcare sector and sets up an integrated approach to prevent sharp injuries. It contains provisions on risk assessment and prevention, use of safe equipment, workers’ participation and information, training and awareness raising, health assessment and health records.

It builds upon several provisions of Directive 2000/54/EC (biological agents). It provides that the hierarchy of general principles of prevention according to Articles 3, 5 and 6 of Directive 2000/54/EC is applicable. It requires that the risk assessment and health surveillance must be in compliance with the relevant provisions of Directive 2000/54/EC. Finally, Clause 6 of the Directive provides that if the assessment reveals that there is a risk to the safety and health of workers due to their exposure to biological agents for which effective vaccines exist, workers shall be offered vaccination. Such a provision already exists under Article 14(3) and Annex VII to Directive 2000/54/EC. Such overlap does not lead to double regulation in practice.

Despite these close links with Directive 2000/54/EC (biological agents), the scope of Directive 2010/32/EU does not cover all the categories of workers that might be exposed to infection through sharp injuries (e.g. workers dealing with special/contaminated waste management treatments or researchers in laboratories). The broadening of the scope to all workers exposed to sharp injuries could have a positive impact on limiting worker exposure to biological agents.


(159) Since OSH Directives are ‘a minima’ Directives Member States can apply more stringent requirements
Directive 2009/13/EC (MLC) and Directive 2008/106/EC (minimum level of training of seafarers)

In May 2008, the European Community Ship owners’ Associations (ECSA) and the European Transport Workers’ Federation (ETF) concluded an Agreement on the ILO Maritime Labour Convention (MLC). The Agreement was later implemented by Directive 2009/13/EU, which entered into force at the same time as the MLC on 20 August 2013. The Agreement includes all mandatory clauses of the MLC, leaving out non-mandatory clauses. The MLC, and therefore Directive 2009/13/EC, apply to all commercial seagoing ships, excluding fishing vessels. The Agreement contains Articles from the MLC related to medical treatment on board vessels.

Directive 2009/13/EC has a more limited scope than Directive 92/29/EC (medical treatment on board vessels). It only covers commercial seagoing ships excluding fishing vessels, warships, inland navigation, sheltered waters or waters where port regulation applies, whereas Directive 92/29/EC applies to all vessels, including harbour vessels but excluding inland navigation vessels, warships, pleasure boats, tugs operating in harbour areas. Similarly to Directive 92/29/EC, it applies to all seafarers, defined as any person employed on board of seagoing ship, which therefore excludes staff on shore.

 Directive 2009/13/EC provides that the Agreement shall not affect any law, custom or agreement which provides for more favourable conditions for the seafarers concerned. It adds that the terms of this Agreement are, among others, without prejudice to the provisions under the Framework Directive and to Directive 92/29/EEC (medical treatment on board vessels). This means that commercial seagoing ships falling under Directive 2009/13/EC will also have to comply with Directive 92/29/EC. Directive 2009/13/EC requires that all ships shall carry a medicine chest, medical equipment and a medical guide. Such requirements are already covered under Directive 92/29/EC (medical treatment on board vessels), which requires that any vessel must carry appropriate medical supply including medical chest (160), as detailed in its Annex. This medical supply must be accompanied by guides and instructions as to their use. This overlap does not lead to double regulation in practice.

Directive 92/29/EC requires that vessels with a crew of 100 or more workers and engaged in international voyage of more than 3 days must have a doctor responsible for medical care on board. A similar requirement applies in Directive 2009/13/EC. This overlap does not lead to double regulation in practice.

Directive 92/29/EC requires that workers on board vessels must be granted access to medical consultation by radio to facilitate assistance in case of injuries or emergency. A similar requirement applies under Directive 2009/13/EC, except that it mentions that this medical consultation can be done either by radio or satellite.

Directive 92/29/EC requires that people receiving professional maritime training and intending to work on board ship are given basic training in the medical and emergency measures to be taken in the event of an accident or serious medical emergency. Furthermore, the captain and any delegated worker must receive special training updated periodically (at least every five years), taking into account specific risks for each category of vessels. According to Annex V to Directive 92/29/EC, this special training must include, among others, basic understanding of physiology.

(160) For each of its life-rafts and life-boats, every vessel flying its flag or registered under its plenary jurisdiction carries a watertight medicine chest. […]
symptomatology and therapeutics, the ability to perform basic types of treatment and supervise emergency. This Annex also mentions that this training should take account of the programmes of instruction detailed in relevant recent international documents.

Similarly, Directive 2009/13/EC requires that ships which do not carry a medical doctor have at least one seafarer trained to provide medical care and/or first aid. It specifies that this training must meet the requirements of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers

Directive 2008/106/EC implements the IMO Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) in EU law. The 1995 Convention has been ratified by 4 Member States (Denmark, Latvia, Lithuania and Spain). It is also subject to a proposal of a Council Decision to authorise its ratification (161). The Directive applies to all commercial seagoing ships. It excludes fishing vessels, warships, leisure boats, wooden ships and, hence, has a more limited scope than Directive 92/29/EC.

Directive 2008/106/EC provides requirements for the minimum safety training of seafarers, and the specific trainings for seafarers designated to provide medical first aid on board ship, and seafarers designated to take charge of medical care on board ship. As mentioned above, Annex V to Directive 92/29/EC requires that the captain and delegated workers’ training take account of the programmes of instruction detailed in relevant recent international documents. In other words, this training, in the case of commercial seagoing ships, should take into account the Standards of Training, Certification and Watchkeeping for Seafarers (STCW).

The description of the medical training provisions under these three Directives shows that Directive 92/29/EC and Directive 2009/13/EC set equivalent training requirements for commercial seagoing ships. This potential overlap does not lead to double regulation in practice but may be confusing as similar requirements are set by different texts.

Coherence between OSH Directives and other EU policies

Nor the analysis, nor interviews with stakeholders have revealed any specific coherence issues in relation to various EU policies. Some recent policy documents present potential or actual synergies with the OSH acquis. One of these documents, the renewed EU strategy 2011-14 for Corporate Social Responsibility (162) does not include clear reference to health and safety at work. Further coordination may be needed to ensure that health and safety at work is properly reflected in the EU policies on corporate social responsibility.

(161) Proposal for a Council Decision authorising Member States to sign and/or ratify, in the interest of the European Union, the International Convention on Standards of Training, Certification and Watch-keeping for Fishing Vessel Personnel, 1995, of the International Maritime Organisation /* COM/2013/0595 final - 2013/0285 (NLE) */

(162) Communication from the Commission to the European Parliament, the Council, the European Economic and social Committee and the Committee of the Regions, A renewed EU strategy 2011-14 for Corporate Social Responsibility, COM(2011) 681 Final
Of particular interest, the Strategy for the sustainable competitiveness of the construction sector and its enterprises (163) aims to improve the human-capital basis of the construction sector, fostering at the same time the sustainable competitiveness of the construction sector. This strategy was accompanied by an action plan known as ‘Construction 2020’. The High Level Strategic Forum (HLSF), which monitors the progress made on the implementation of the Construction 2020 Action Plan, recommended, amongst other measures, studying health and safety innovative practices in order to spread good practices in the construction sector, along with the monitoring of initiatives supporting health and safety innovation (both on legal and voluntary basis). Such initiatives should, therefore, impact the implementation of the minimum safety and health requirements under Directive 92/57/EEC (construction) in a positive manner.

8.2.3 Coherence between OSH Directives and other international instruments

This section provides an overview of interfaces (overlaps, inconsistencies, gaps, synergies) between OSH Directives and other international instruments. Amongst the international instruments, the most relevant to the OSH acquis are the ILO Conventions. Coherence issues have also been found between the IMO International Convention on Standards of Training, Certification and Watch keeping for Fishing Vessel Personnel (the STCW-F Convention) and the Fishing vessels Directive. Finally, coherence with ISO standards should be considered in several instances.

ILO Conventions

To make sure that economic growth and development go along with the creation of decent work, the ILO has developed a system of international labour standards, including 188 conventions, which are legally binding international treaties that may be ratified by member countries. Many of those relate directly to OSH. In some cases, the ILO Conventions set additional or more stringent requirements than the corresponding OSH Directives. The following table provides an overview of such instances.

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### Table 8-4  ILO Conventions that set additional or more stringent requirements than the corresponding OSH Directives

<table>
<thead>
<tr>
<th>ILO Convention</th>
<th>EU Directive</th>
<th>Main additional requirements</th>
<th>MS which have ratified</th>
</tr>
</thead>
</table>
| 1995 Safety and Health in Mines Convention (No. 176) | Directive 92/104/EEC (mines and quarries) | • Compilation and publication of statistics;  
• Enforcement powers;  
• Provision of exits connected to separate means of egress to the surface;  
• Record of names and location of people underground;  
• Consultation rights of health and safety representatives with the competent authority;  
• Provision of inspection services;  
• Setting of penalties and corrective measures. | AT, BE, CZ, FI, DE, IE, LU, PL, PT, SK, ES, SE |
| 1965 Medical Examination of Young Persons (Underground Work) Convention (No. 124) | Directive 92/104/EEC (mines and quarries) | • Specific requirements on medical examination and re-examinations for fitness for employment for people until at least the age of 21 years | AT, BE, BG, CY, CZ, FI, FR, EL, HU, IE, IT, MT, NL, PL, PT, SK, ES, UK |
| 1981 ILO Occupational Safety and Health Convention (No. 155) | Directive 89/391/EEC (framework) | • Does not exclude specific cases as the Framework Directive does with certain specific public service activities (armed forces, police, civil protection) but State-parties to the Convention may however list, upon ratification, any branches and/or categories of workers that are excluded | BE, CY, CZ, DK, FI, HU, IE, LU, NL, PT, SK, SI, ES, SE |
• More stringent/detailed requirements on recording and notification of occupational accidents and information for workers requirements  
• Provisions on inspection and enforcement | FI, LU, PT, SI, SE |
<p>| 1985 Occupational Health Services Convention (No. 161) | Directive 89/391/EEC (framework) | • Detailed obligations on occupational health services which are not covered by the Framework Directive | BE, BG, HR, CZ, FI, DE, HU, LU, PL, SK, SI, SE |
| Convention concerning decent work for domestic workers, 2011 (No. 189) | Directive 89/391/EEC (framework) | • Inclusion of domestic workers | FI (entry into force: 08/01/2016), IE (entry into force: 28/08/2015), DE, IT |</p>
<table>
<thead>
<tr>
<th>ILO Convention</th>
<th>EU Directive</th>
<th>Main additional requirements</th>
<th>MS which have ratified</th>
</tr>
</thead>
</table>
| 1990 Chemicals Convention (No. 170) | Directive 98/24/EC (chemical agents) | • Right of workers to remove themselves from danger resulting from the use of chemicals when they have reasonable justification to believe there is an imminent and serious risk to their safety or health.  
• Overall protection against any consequences to workers in the exercise of their rights, including the right to remove themselves from danger. | FI, DE, IT, LU, PL, SE |
| 1988 Safety and Health in Construction Convention (No. 167) | Directive 92/57/EEC (construction) | • Requirement to report to the competent authority within a prescribed time of occupational accidents and diseases  
• Obligation of State parties to provide appropriate inspection services and provide these services with the resources necessary for the accomplishment of their task, or satisfy itself that appropriate inspection is carried out | CZ, DK, FI, DE, HU, IT, LU, SK, SE |
| 2006 Maritime Labour Convention (MLC) | Directive 92/29/EC (medical treatment on board vessels) | • Implementation through Directive 2009/13/EU (see external coherence with other non-OSH EU legislation) | BE, BG, HR, CY, DK, FI, FR, DE, EL, HU, IE (entry into force: 21/07/2015), IT, LV, LT, LU, MT, NL, PL, ES, SE, UK |
| Work in Fishing Convention, 2007 (No.188) | Directive 92/29/EC (medical treatment on board vessels) | • Medical equipment and supplies on-board must be accompanied by guide and information in a language and format understood by the fishermen | None |
| Work in Fishing Convention, 2007 (No.188) Note: also implemented through the 2012 Social Partner Agreement | Directive 93/103/EC (fishing vessels) | • More detailed provisions on accommodation design and facilities  
• Provisions on protection from vibrations, ventilation, lightning and sanitary facilities  
• Additional requirements for basic safety training of fishermen | None |
Directive 2003/10/EC (noise) | • Determination of exposure limits  
• Obligation to take account of national conditions and resources in promoting research  
• Penalties and inspection | BE, HR, CZ, DK, FI, FR, DE, HR, IT, LV, LU, MT (air pollution only), PL, PT, SK, SI, ES, SE, UK |
<p>| 1986 Asbestos Convention (No. 162) | Directive 2009/148/EC (asbestos) | • Health surveillance to take place as far as possible during working hours | BE, HR, CY, DK, FI, DE, LU, NL, PT, SI, ES, SE |
| 1967 Maximum Weight Convention (No. 127) | Directive 90/269/EC (manual handling) | • None | BG, FR, HU, IT, LT, LU, MT, PL, PT, RO, ES |</p>
<table>
<thead>
<tr>
<th>ILO Convention</th>
<th>EU Directive</th>
<th>Main additional requirements</th>
<th>MS which have ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974 Occupational Cancer Convention (No. 139)</td>
<td>Directive 2004/37/EC (carcinogens or mutagens)</td>
<td>• None</td>
<td>BE, HR, CZ, DK, FI, FR, DE, HU, IE, IT, LU, PT, SI, SK, SE</td>
</tr>
<tr>
<td>1997 Private Employment Agencies Convention (No. 181)</td>
<td>Directive 91/383/EEC (temporary workers)</td>
<td>• None</td>
<td>BE, BG, CZ, FI, HU, IT, LT, NL, PL, PT, SK, ES</td>
</tr>
<tr>
<td>2000 Maternity Protection Convention (No. 183)</td>
<td>Directive 92/85/EEC (pregnant/breastfeeding workers)</td>
<td>• Requirements concerning leave in case of illness or complications • Periodic review by State parties of the period of leave and the amount/rate of the cash benefits • Provision of nursing breaks or daily reduction of hours of work for breastfeeding mothers</td>
<td>BG, CY, HU, IT, LV, LT, LU, NL, PT, RO, SK, SI</td>
</tr>
<tr>
<td>Medical Examination of Young Persons (Industry) Convention, 1946 (No. 77)</td>
<td>Directive 94/33/EC (young people)</td>
<td>• Medical examination as a pre-condition for employment and not linked to a preliminary risk assessment • Provisions concerning the frequency of medical examinations and health records for inspectors</td>
<td>BE, BG, CZ, FR, EL, HU, IT, LU, MT, PL, PT, SK, ES</td>
</tr>
</tbody>
</table>

Source: European Commission – DG Employment, Social Affairs and Inclusion, Analysis – in the light of the European Union acquis – of the ILO Conventions that have been classified by the International Labour Organisation as up to date, Luxembourg, 2014 and ILO website (http://www.ilo.org/global/lang-en/index.htm)
The EU cannot ratify ILO conventions or protocols as, under the ILO rules, only States party to ILO can ratify these. In principle, as the OSH Directives only establish minimum requirements, Member States are free to set more detailed or more stringent requirements, ratify those conventions and apply the additional requirements set by the ILO Conventions.

However, some subject matters of the conventions fall under the exclusive competence of the EU and therefore Member States should be authorised before ratifying such ILO rules, whether or not the exclusive competence of the EU covers the whole convention, or only elements of the convention. This is the case of the coordination of social security schemes. An example is the Work in Fishing Convention No 188 (2007) which included such rules. In this case, the Council has adopted a Decision to authorise the Member States to ratify the Convention. Exclusive competence can be implied when the commitment will ‘affect [...] Community rules’ when it engages an area which the Union has regulated ‘to a large extent’: i.e. containing rules that are more than minimum requirements. This is the case for the Convention concerning Safety in the Use of Chemicals at Work, as expressed by Recital (2) of the Council Decision of 28 January 2014, authorising Member States to ratify the Convention, which states that ‘The rules under part III of Convention No 170 [...] are covered to a large extent by Union acquis on the approximation of laws, regulations and administrative practices in the area of classification, packaging and labelling that has been developed since 1967 and further consolidated’. In case of shared competences, i.e. when the subject matter falls partly within an area of EU competence and partly within the Member States’ competences, the EU institutions and Member States must cooperate in implementing the commitments resulting from such conventions.

The European Council has already adopted some decisions authorising the Member States to ratify various ILO Conventions, in particular:

- the Maritime Labour Convention, 2006 (Council Decision of 7 June 2007);
- the Work in Fishing Convention, 2007 (Council Decision of 7 June 2010);
- the Convention concerning Safety in the Use of Chemicals at Work, 1990 (Council Decision of 28 January 2014);

**IMO Conventions**

The IMO International Convention on Standards of Training, Certification and Watch keeping for Fishing Vessel Personnel (the STCW-F Convention) sets minimum training standards and establishes mutual acceptance of fishermen’s certificates between the States Parties, which ratify the STCW-F Convention. It was adopted in 1995 by IMO and entered into force in September 2012. So far, four EU Member States (Denmark, Spain, Latvia and Lithuania), along with Iceland and Norway, have ratified the STCW-F Convention. The STCW-F Convention has not been

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(165) Opinion of the Court of 19 March 1993. - Opinion delivered pursuant to the second subparagraph of Article 228 (1) of the EEC Treaty. - Convention Nº 170 of the International Labour Organization concerning safety in the use of chemicals at work. Opinion 2/91 of the CJEU.
implemented through an EU legislative instrument. It is also subject to a proposal of a Council Decision to authorise its ratification\(^{(166)}\).

The STCW-F Convention applies to vessels of 24 meters in length or more and of 750kw propulsion power or more. It concerns skippers, officers, engineer officers and radio operators. In comparison, training requirements laid out in the Fishing vessels Directive apply to all fishing vessels covered by the Directive (from 15 or 18 meters in length), but is compulsory for all fishing vessel staff employed on such vessels.

The Fishing vessels Directive requires workers to receive training on safety and health on board vessels and on accident prevention in particular, including firefighting, the use of life-saving and survival equipment and, for the workers concerned, the use of fishing gear and hauling equipment and the use of various types of signs, including hand signals. Firefighting and survival techniques are part of the basic training all fishing vessels staff are to receive under the STCW-F Convention. These elements are also included in the minimum requirements for the certification of skippers and officers in charge of navigational watch; a fire-fighting course is also part of the minimum training for certification of chief engineer officers and second engineer officers of fishing vessels. Fishing vessel manoeuvring and handling is part of the training for skippers and officers. Only the use of signs and hand signals is not mentioned directly in the STCW-F Convention. However, the STCW-F Convention stipulates that all skippers and officers are required to know the FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels, which does include provisions on the use of signs and hand signals.

The Fishing vessels Directive also requires that skippers receive training on the prevention of occupational illness and accidents on board and the steps to be taken in event of accident; stability and maintenance of the vessel under all foreseeable conditions of loading and during fishing operations; radio navigation and communication, including procedures’. In the STCW-F Convention, training of skippers should include emergency procedures (including actions to be taken in case of incidents), the knowledge of construction and stability, and the knowledge of warning systems and use of communication equipment. The prevention of occupational illness and accidents is not specifically mentioned in STCW-F, but the Code of Safety for Fishermen and Fishing Vessels covers accident prevention.

Finally, Annex III of the Fishing vessels Directive states that ‘all workers must receive proper training and appropriate instructions in anticipation of an emergency’. Knowledge of life-saving appliances and emergency procedures are also covered by the STCW-F Convention.

Conclusively, although there are a lot of similarities in the training requirements between the Fishing vessels Directive and the STCW-F Convention, the latter generally goes well beyond the Fishing vessels Directive in terms of provisional content, as it requires different training depending on different professions, and includes more detailed requirements on emergency procedures and rescue. However, as mentioned, coverage of the STCW-F Convention is more limited than the training requirements of the Fishing vessels Directive.

\(^{(166)}\) Proposal for a Council Decision authorising Member States to sign and/or ratify, in the interest of the European Union, the International Convention on Standards of Training, Certification and Watch-keeping for Fishing Vessel Personnel, 1995, of the International Maritime Organisation /* COM/2013/0595 final - 2013/0285 (NLE) */
As four EU MSs have ratified the STCW-F Convention, while the rest have not, it follows that potential discrepancies in safety requirements among EU Member States currently exist. The fact that some MSs have decided to ratify the STCW-F Convention and other MSs are in the process of doing so (ref. NIRs), clearly shows that MSs generally consider the provisions of the STCW-F to be important.

ISO standards
International standards are voluntary instruments, which establish requirements, specifications, guidelines or characteristics that can be used consistently to ensure and demonstrate that materials, products, processes and services are fit for their purpose and/or comply with various key safety, health or environment obligations. Several stakeholders have raised concerns with regard to the coherence of some directives with international standards. However, as such standards are not freely available, their content was not systematically examined as part of the study. This is the case, in particular, in relation to Directive 90/269/EC (manual handling), Directive 90/270/EC (display screen equipment) and Directive 1992/58/EC (OSH signs).

8.2.4 Conclusion
Several interfaces have been identified between the OSH Directives and other EU measures and/or policies and international instruments. Among these interfaces, very few coherence issues arose.

Directive 2013/30/EU (safety of offshore oil and gas operations) and Directive 92/91/EEC (drilling) - reporting interface
Operators/employers of an off-shore oil and gas operation will have to prepare a health and safety document under Directive 92/91/EEC (drilling) and reports on major hazards, internal emergency response plan and design notification under Directive 2013/30/EU (safety of offshore oil and gas operations), which may contain similar requirements.

Directive 2013/30/EU mentions that it applies without prejudice to the requirements laid down in Directive 92/91/EEC (drilling), but the interfaces between the reporting requirements under these two directives are not always very clear, which may complicate implementation on the ground.

Directive 2003/88/EC (working time) and Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people)
Both Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people) contain employment rights (e.g. night work requirements, rest periods, prohibition of dismissal of pregnant workers). These employment rights are not always linked to occupational health and safety issues.

Public procurement Directives
Under the public procurement Directives, the relevant provision concerning the award criteria mentions ‘social characteristics’ as possible criteria, without further details or specific reference to occupational health and safety obligations on behalf of the tenderers.

REACH Regulation and chemical agent Directives
The requirements of Annex II Section 8 of REACH can create confusion, in particular for downstream users, who may receive different limit values on the same substance reported in the
SDS. This leads to potential overlaps between occupational exposure limits (OELs) and Derived No Effect Levels.

Safety data sheets (SDSs) under REACH provide important information to employers to perform their risk assessment at the workplace and to adopt the adequate risk management measures. However, some employers expressed their concern on the difficulties they encounter to use information from the SDSs. They stress that it is a very complex and burden exercise to use information from SDSs. The risk management measures under the SDSs can also potentially contradict the OSH measures.

**Directive 1999/92/EC (ATEX) and Directive 94/9/EC (ATEX Equipment)**
The main interaction between the two Directives concerns the selection of equipment and protective systems as defined under Directive 94/9/EC (ATEX Equipment) to be used in the different zones as defined under Directive 1999/92/EC (ATEX).

**Directive 2010/32/EC (sharp injuries) and Directive 2000/54/EC (biological agents)**
Directives 2000/54/EC (biological agents), the scope of Directive 2010/32/EU does not cover all the categories of workers that might be exposed to infection through sharp injuries (e.g. workers dealing with special/contaminated waste management treatments or researchers in laboratories).

Directives 2009/13/EC and Directive 2008/106/EC contain some medical treatment requirements equivalent to the ones set under Directive 92/29/EC. Commercial seagoing ships falling under Directive 2009/13/EC will also have to comply with medical treatment requirements under Directive 92/29/EC. Although this does not lead to double-regulation, it causes a certain level of confusion in the application of medical treatment requirements onboard.

**IMO International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (STCW-F) and Directive 93/103 (fishing vessels)**
Although there are a lot of similarities in the training requirements between the Fishing vessels Directive and the STCW-F Convention, the latter generally goes well beyond the Fishing vessels Directive in terms of provisional content, as it requires different training depending on different professions, and includes more detailed requirements on emergency procedures and rescue.

**ILO International Conventions**
In some cases, the ILO Conventions set additional or more stringent requirements than the corresponding OSH Directives.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES
9 Conclusions and recommendations

This chapter presents the conclusions and recommendations of the evaluation. The chapter first provides an overall conclusion and then gives the conclusions for each of the four main themes of the evaluation (implementation in the Member States, relevance, effectiveness, and coherence). The recommendations following from the conclusions are presented under each of the three evaluation themes. The recommendations presented in this chapter are supplemented by Directive-specific recommendations, which can be found in the respective Directive evaluation reports.

9.1 Overall conclusion

The recommendations provided by the evaluation are based on evidence and, to every extent possible, we seek to emphasise transparency of this evidence. However, it is necessary to clarify that for some recommendations, evidence is solid, easily presented and made available to the reader. For others, the evidence is more scattered and recommendations are based on MSs' experience and aggregated conclusions extracted from pieces of relevant data sets. Such evidence is more challenging to present in a transparent manner, and while recommendations may hold equal merit as those with transparent evidence, as a consequence such recommendations will be provided with due caution.

This issue is linked to the fact that, from the outset, we acknowledge that some of the study findings are based on incomplete information and on a combination of input from different sources. A key challenge is that causality between possible improvements to the safety and health of workers and implementation of the Directives is very difficult to establish and isolate from other factors. Hence, it is important to put the message forward that some decisions on possible improvements to the regulatory framework are bound to be made without solid evidence, and thus with some level of uncertainty. We encourage stakeholders to embrace this premise and accept the available evidence that is presented without placing too much emphasis on inevitable details of potential inconsistency that do not influence overall findings.

The OSH acquis, comprising the Framework Directive and the 23 individual directives under evaluation, represents a comprehensive package of legislation aimed at securing the same minimum level of protection from work related health and safety risks for the workers of all EU Member States.
The Framework Directive was adopted in 1989, with most of the individual Directives being adopted in the subsequent five years, although some existed in previous versions before the Framework Directive – and others only were added to the acquis at a later stage. The legislation has thus been in place for a considerable amount of time – and this leads to an expectation that it should be possible to observe a discernible impact. However, not all Member States have been in place for the same time – just one of the many additional variables in that the maturity of national legislation with a basis in the EU OSH Directives varies widely between Member States. In the psychology domain, what has become known as ‘Wilder’s Law of Initial Values’\(^{167}\) explains clearly that the nature and magnitude of changes in response to an attempted intervention will depend upon the pre-existing levels of the parameters of interest.

The evaluation shows very clearly that the EU OSH acquis is the reference frame for national OSH regulatory regimes. While the Member States have chosen various models for their legal implementation of the Directives’ requirements, there is no doubt that the Directives’ requirements form the core of the national systems in one way or the other. The significance of the Directives in setting the scene for OSH regulation in the EU is therefore very high.

The Directives represent a mix of a goal-oriented approach – strongly expressed in the Framework Directive, but also mirrored in the individual Directives – and a prescriptive approach – which is, for instance, seen in the very detailed and specific requirements included in the annexes of some Directives. Some Member States have put more weight on the goal-oriented approach in their implementation, whereas others have preferred a stronger reliance on the prescriptive approach. These differences largely appear to reflect pre-existing differences in OSH approaches between Member States. The evaluation indicates that the EU legislation – through the Framework Directive - has contributed to a development towards application of the goal-oriented approach and a stronger focus on the risk-management cycle.

Within the assumed context of the use of directives, there is some evidence relating to the most appropriate form that directives should take. Specifically, this evidence relates to whether directives should prescribe a particular course of action (‘prescriptive approach’) or whether the approach should be to set aims of goals to be achieved (‘goal-setting or goal-oriented approach’). Section 6.8.2 (Effectiveness – health and safety impacts) sets the scene for this debate. In commenting on the impact of different national regulatory approaches on OSH compliance, it cites an EU-OSHA study (EU-OSHA 2013c), which comments on the fact that some Member States have national goal-setting (i.e. process-orientated) regulatory approaches to OSH management, whilst others have a more ‘traditional’ management system with prescriptive legislative approaches embedded in the regulatory regime. The EU-OSHA study suggests that the more goal-setting regimes are associated with higher levels of OSH management practice implementation. Support for this view can be derived from statistics such as those cited earlier (Figure 4-11), which seem to suggest a positive relation between the OSH management level, the extent to which risk assessments are conducted internally and the goal-oriented legislative regime of several MSs.

Section 4.3.2 goes on to suggest that some of the other challenges to compliance, such as reported confusion over apparent multiple risk assessment requirements, stem in part from apparent confusion at the EU level, where some Directives are relatively prescriptive (e.g. the OSH Signs Directive), whilst others adopt a goal-setting approach (such as the Framework Directive

\(^{167}\) Wilder, J. (1962)
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

itself). This leads section 4.3.4 to conclude that this lack of clarity within the OSH acquis may constitute a challenge for MSs when transposing that acquis into national provisions.

This debate creates an ongoing thread which pervades many of the directive-specific discussions in one form or another. Thus, in respect of the Work Equipment Directive (Section 5.1.3), it is suggested by OSH experts that suggestions for change to accommodate emerging risks perhaps reflect national differences in OSH management, where those MSs who adopt a more goal-setting approach are more likely to be content with the existing provisions, whilst those MSs who tend to adopt relatively prescriptive legislation might need to make further prescriptions. The idea that more prescriptive approaches make a directive less ‘future proof’ and more likely to become out of date and require to be updated is reflected in respect of some of the other individual directives (e.g. DSE, CAD and CMD). For example, in respect of the DSE Directive, not only are current provisions outdated but there are also suggestions that, in prescribing a certain scenario, they could be regarded as stifling innovation and novel ways of working.

This view was discussed at the seminar held with stakeholders to discuss some of the main findings emerging from the study (‘validation seminar’) where some participants stated that if the Directives are too prescriptive, they may become outdated quickly. However, opinions amongst those present differed markedly over the issue of whether or not a more goal-oriented approach would be more feasible and hence more relevant. One point noted, for example, was that SMEs tended to prefer a more prescriptive regime to a goal-oriented one, although the evidence-base for this was not explored.

Not all of these views are necessarily reflected in the Main Report, with some detailed comments presented in the individual Directive reports. Thus, comments from national bodies, stakeholders, NIRs, etc. suggest: a need for a more flexible (i.e. less-prescriptive) approach in the Biological Agents Directive; a less ‘activity-based’ approach to the Manual Handling Directive; that a goal-oriented OSH Signs Directive without prescriptive annexes may contribute to a higher degree of continued future relevance; and that there was a desire for the Drilling Directive to move towards a goal-oriented approach.

The complexity of some new and emerging risks, not already explicitly covered by individual directives, adds further to the argument. Thus, it has been suggested earlier in this report and in the Manual Handling and Framework Directive reports that serious OSH issues such as MSDs (not already covered) and psychosocial risks do not readily present themselves as being amenable to a prescriptive approach (and yet there is a clear view from some stakeholders at least, endorsed by the ESENER-2 findings referred to in Chapter 5, that non-legislative measures are insufficient).

Despite this evidence, there is (perhaps inevitably) a counter-argument. This appears to principally stem, at least in part, from those MSs where a more prescriptive approach is regarded as the ‘norm’. For example, in regards to psychosocial risks, one stakeholder from such a MS commented that ‘our employers don’t like guidance, they like being told what to do’.

There is no doubt that being ‘told what to do’ has one particular merit in that, generally speaking, such an approach is more readily conducive to confirming compliance (although there are concerns expressed by some stakeholders that this becomes little more than a ‘box-ticking’ exercise with little effective OSH management). Additionally, a goal-setting approach requires enterprises to have a greater degree of OSH understanding and knowledge, which might be particularly challenging for SMEs.
This point was made in a SLIC submission (168) in which it was indicated that a consequence of the goal or objective-setting nature of the Framework Directive was ‘a decrease in the presumption of conformity’. This resulted in ‘a burden on SME’s and businesses with less expertise’ (and additionally on inspection authorities to prove violations). Nevertheless, despite this possible shortcoming, the submission concludes:

‘There is no need for a legal framework prescribing detailed means measures. We must stick to the principles of goal oriented legislation with goal oriented regulations and specific norms and limit values, leaving room for practical implementation by employers and employees.’

A degree of prescription is unavoidable, for example in setting exposure limits for physical (and perhaps chemical) agents. The latter case is slightly different, however, in that the limits are predominantly indicative rather than mandatory. However, where there is less clarity is in the extent to which MSs need to be ‘told’ how to achieve those limits. Of course, given a more prescriptive goal-setting directive it remains open to any individual MSs to incorporate those goals into prescriptive national legislation.

The deeper challenge, however, is the fact that the two approaches are embedded in national practices and that changing from one to the other will not be easy. Although the EU-OSHA Risk Observatory report, cited above, suggests that a goal-setting approach is more effective in achieving better OSH management, it might be more accurate to say that a certain group of MSs appear to have better OSH management, and one feature they share is a more goal-setting approach to such management. Certainly, on the basis of the evidence reviewed as part of the present study, it is not possible to endorse one approach over the other. It can be stated that the mixture of approaches in the current OSH acquis appears to be unhelpful and that a more consistent approach would probably therefore be beneficial. It can also be stated that some of the more complex hazards and risk factors are less readily presented in a prescriptive fashion than they would be in a goal-setting vehicle. On the basis of these, it appears that some form of dialogue over the future ‘style’ or approach of directives would be of value in ensuring the overall ongoing future relevance of the OSH acquis.

The adoption of a more goal-based approach to the OSH acquis is consistent with current thinking within the wider EU. Thus, in his opening statement as President-Elect of the European Commission, Mr Jean-Claude Juncker stated: ‘We must not stifle innovation and competitiveness with too prescriptive and too detailed regulations,’ (169). Whilst the Commission Better Regulation Guidelines stop short of endorsing such an approach, referring simply to the need to consider ‘less or more prescriptive measures’ (170), the Toolbox can be seen to be addressing this in asking (in respect of Proportionality) ‘Does the Union action leave as much scope for national decision as possible while achieving satisfactorily the objectives set?’ (171). It can be argued that adopting a less prescriptive approach is fulfilling that aim.

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The Directives are also a result of a comprehensive tripartite policy dialogue, which means they have been subject to considerable discussion and debate when they were written. The Directives are thus based on available knowledge at the time of their conception and the possible political compromises, but not always backed by clear data and scientific research. Stakeholders are generally reluctant to reopen the debate about Directives for fear of losing out in the process of revising a Directive. On the basis of the evaluation, it is assessed that the elaborate (at times lengthy) process of tripartite dialogue contributes to the relevance and effectiveness of the Directives because the Directives represent the viable compromise between three parties and their combined knowledge. At the same time, there is a level of conservatism and inertia in the system, because it is sometimes very difficult to reach agreement and because the parties are reluctant to reopen agreements already reached.

9.2 Conclusions on implementation in the Member States

Looking at the implementation of key requirements of the Directives, the evaluation has focused in particular on ‘Common Processes and Mechanisms’ (CPMs), which are required according to the Framework Directive, but are also further developed in many of the 24 Directives. These include: Risk assessment; Preventive and protective services; Information for workers; Training of workers; and Consultation of workers.

9.2.1 Implementation of the legal framework

Most Member States have transposed the OSH Framework Directive by means of a national OSH framework act. This national OSH Act was not necessarily newly adopted after the entry into force of the Framework Directive; it is often the case that existing OSH legislation has been brought together into one main OSH Act or that an existing OSH Act has been amended to comply with the Framework Directive. There are, however, a few exceptions whereby the OSH Framework Directive is transposed through Labour framework legislation, a mix of OSH and labour framework legislation, or even several acts, depending on the workplace location (air, sea, land).

The individual OSH directives are, as a rule, transposed one-to-one through secondary legislation. Some exceptions have been identified which are seemingly Directive-bound. The three OSH directives targeting vulnerable workers are often transposed through a specific act and secondary legislation, or directly through the main OSH act or the Labour Code. Member States also often transpose the two OSH directives on the mineral extracting industries through several pieces of secondary legislation or through, for example, a national Mining Act and secondary legislation. The transposition of the two OSH directives on vessels follows the same trend, although to a lesser degree.

With regard to the transposition into national legislation of the CPMs, 16 MSs have transposed one or more CPMs through distinct secondary legislation, principally in relation to preventive and protective services, and health surveillance. Only four Member States (AT, FR, LU and PT) have implemented separate OSH legislation for the public and the private sector.

Although a large number of infringement proceedings have been initiated regarding the national transposition of the Framework Directive and, to a lesser degree, of Directive 1999/92/EC (ATEX), Directive 2002/44/EC (vibration), Directive 2003/10/EC (noise), Directive 2006/25/EC (artificial optical radiation) and Directive 98/24/EC (chemical agents), most of them regarded late transposition (non-communication of national measures) and were subsequently closed. Apart from
these, very few discrepancies have been observed in the transposition of the OSH *acquis*. Furthermore, for most of the OSH directives, Member States have implemented more detailed or stringent requirements than those specified by the directive concerned.

From this perspective, it can be concluded that the structure and general principles of the OSH *acquis* are well suited as a European framework to be transposed and implemented at the national level. National approaches to transposition, in particular in relation to interactions between CPMs, vary across Member States. While the majority have followed an approach comparable to the Directives; whereby the CPMs are laid down in the Framework Directive (the framework OSH legislation) and more stringent and/or specific CPM provisions are set up in the individual Directives (secondary legislation); a number of Member States have regulated some aspects separately, principally those that relate directly to the broader institutional and organisational context, namely preventive and protective services and health surveillance, and to a lesser extent consultation of workers. Those aspects are regulated in a horizontal manner through a specific legal act.

### 9.2.2 Derogations and transitional periods

About half of the Member States have applied transitional periods in the implementation of most of the Directives for which such provisions were made. In the vast majority of cases, Member States who opted for the application of transitional periods have also respected them.

The Country Summary Reports show a mixed picture as to the use of derogations by Member States across directives. The derogations most frequently used are those laid down in Directive 98/24/EC (chemical agents) relating to the prohibition of the use of certain chemical agents, and two of the derogations provided by Directive 94/33/EC (young people): the derogation from the prohibition of employment of young people in the case of adolescents, where such derogations are indispensable for their vocational training; and the derogation from the prohibition of night work for young people in the case of adolescents and in specific areas of activity.

While it seems that transitional periods (which are meant to help authorities to adapt the implementation of Directives to the actual capacities and characteristics of companies or sectors in the Member States that may need a period of time to adopt or implement the provisions of a particular Directive) have fulfilled their role, the situation is more nuanced with regard to derogations which are not equally used. All derogations have been used, albeit in some instances by a very limited number of Member States.

### 9.2.3 Compliance

The mapping of compliance with the OSH *acquis* reveals that available data allows for a mapping of the quantitative aspect of compliance, i.e. the extent to which establishments perform specific, measurable OSH-related actions, such as performing risk assessments or formulating an OSH management policy plan. However, compliance is not achieved solely by producing the required output. An OSH management plan may be incomplete, it may lack essential elements, may not take all risks into account, may not be well executed etc., all of which undermines compliance, as the Directives contain requirements which are essentially quality- and content-oriented rather than activity-oriented. The mapping of compliance in the MSs reveals that the mapping of this qualitative aspect of compliance cannot be systematically performed due to a lack of data availability.
The assessment of compliance at the EU level is therefore particularly concerned with the quantitative aspect and mostly based on ESENER and ESENER-2 data. While ESENER is a valuable source of data, the ESENER surveys have not been designed to measure compliance (from a legal perspective) but rather to get an insight into the manner in which OSH is managed at workplaces.

In this context, it is a relevant conclusion that the attempt to map the findings of the National Implementation Reports has yielded no result. The reporting requirements of the National Implementation Reports have proven to be formulated too broadly to facilitate quantifications of the replies across MSs or to allow for comparability.

However, the collected data shows that compliance varies significantly from Directive to Directive, from MS to MS, and across establishment size.

For instance, the Directive-specific evaluations showed that the Drilling Directive is one that MSs appear to comply with to a large extent, partly on account of Directive provisions, partly spurred on by the self-interest of the often large establishments that operate in the sector. In contrast, the AOR Directive is characterised by a low level of compliance in MSs, as the issue of artificial optical radiation is regarded as a complex issue. Employers within this field find the technicalities and acquired competency to measure, monitor and assess difficult to understand and/or attain.

Compliance also varies significantly from Member State to Member State. For example, within the group of establishments with 10 to 19 employees, Greece has for the lowest share of establishments that have an OSH policy plan (33 % - very poor overall quantitative compliance), while, for the same group in the UK, ESENER reported a share of 98 %. For the group of large establishments, Poland has the lowest share (71 %), while 100 % of the managers interviewed in Estonia, Latvia, Slovakia, Sweden and United Kingdom state that they have an OSH policy or action plan (ESENER; 2009, MM155).

Though there are variances between Directives and Member States, it is an overall observation in the evaluation that both EU and national stakeholders assess compliance with Directive requirements as higher in large establishments compared to SMEs and micro-establishments. This is supported by the Flash Eurobarometer and by ESENER data on compliance. An aggregated interpretation of the collected findings on quantitative compliance shows that overall compliance increases with the size of the establishment. Generally, compliance may be categorised as follows (please see Section 4.3 for relevant Evidence Tables):

- Micro establishments: Cannot be assessed (limited evidence points to poor overall quantitative compliance)
- 10 to 19 employees: Poor overall quantitative compliance
- 20 to 49 employees: Moderate overall quantitative compliance
- 50 to 249 employees: Good overall quantitative compliance
- 250 to 499 employees: Good overall quantitative compliance
- 500+ employees: Very good overall quantitative compliance

The smaller level of compliance in SMEs corresponds to the findings for several Directives, such as the Construction Directive, the ATEX Directive, the Medical treatment on board vessels Directive and the Vibration Directive. However, in contrast, some Directives have not resulted in differences in compliance levels for SMEs compared to larger establishments (e.g. Biological Agents Directive and the AOR Directive). This propensity is mirrored in several National Implementation Reports,
where Member States have elaborated on difficulties faced by SMEs in implementing Directives, while a few MSs also emphasised the opposite (ref., e.g., the National Implementation Reports), namely that they have no evidence that SMEs experience greater difficulties than larger enterprises.

As illustrated in Table 9-1 and elaborated in Section 4.3, quantitative evidence reveals a moderate to good overall level of compliance across the EU and across establishment sizes.

Table 9-1  Evidence table: Overall OSH compliance, all establishment sizes

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU stakeholder interviews</td>
<td>Compliance according to EU stakeholders, score 1-5</td>
<td>3.65</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Existence of documented OSH policy, % of all establishments</td>
<td>79 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER-2, Q166</td>
<td>Existence of a safety and health representative, % of all establishments</td>
<td>58 %</td>
<td>D</td>
</tr>
</tbody>
</table>

Conclusion for overall OSH, all establishment sizes: Moderate to good overall quantitative compliance

Source: See column 1, and COWI evaluation team

There is no indication that compliance is measurably higher in the public sector compared to the private sector.

Segregating quantitative data by establishment size into establishments with and without a safety and health representative shows that the lower level of compliance in smaller establishments to a large extent is coupled with the lack of a safety and health representative (Table 9-2).

Table 9-2  Evidence table: Overall OSH compliance, by size of establishment and OSH employee representation

<table>
<thead>
<tr>
<th>Source</th>
<th>Variable</th>
<th>Finding</th>
<th>Category</th>
<th>Finding</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 19 employees (small establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td>56 %</td>
<td>D</td>
<td>83 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td></td>
<td>77 %</td>
<td>B</td>
<td>90 %</td>
<td>A</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>63 %</td>
<td>C</td>
<td>85 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td></td>
<td>83 %</td>
<td>B</td>
<td>93 %</td>
<td>A</td>
</tr>
<tr>
<td>20 to 49 employees (small establishments)</td>
<td>Existence of documented OSH policy, % of establishments of same size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESENER, MM155</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td></td>
<td>71 %</td>
<td>C</td>
<td>87 %</td>
<td>B</td>
</tr>
<tr>
<td>ESENER, MM161</td>
<td>Safety and health checks conducted on a regular basis, % of establishments of same size</td>
<td>89 %</td>
<td>B</td>
<td>94 %</td>
<td>A</td>
</tr>
</tbody>
</table>
As established above, safety and health representation is considerably less frequent in small establishments compared to larger establishments (e.g. only 51 % of establishments with 10 to 19 employees in 2009 had an internal OSH representative). As the table shows, even small establishments with employee representatives have a good or very good overall quantitative compliance, while the corresponding group of establishments without safety and health representation have poor to moderate quantitative compliance.

Thus, although it is positive that 58 % of surveyed establishments do have an H&S representative, this gap of 42 % constitutes significant room and potential for improvement of overall OSH compliance, particularly in SMEs. There is a considerable lack of representation in some sectors, particularly in the Agriculture, forestry and fishing sector. The latter is worrying as the Agriculture, forestry and fishing sector is a high risk sector in the context of occupational safety and health.

Mapping quantitative compliance with each CPM individually across MSs and establishment sizes based on available data reveals that compliance with training of workers and health surveillance is moderate, while compliance with information for workers and preventive and protective services is good. Quantitative compliance with risk assessments is moderate to good and compliance with consultation of workers ranges from poor to moderate or good compliance depending on the chosen method applied to analyse available data. These findings are summarised in Table 9-3 and briefly described for each CPM below.

Table 9-3 Conclusion of quantitative compliance with CPMs

<table>
<thead>
<tr>
<th>Conclusion by CPM</th>
<th>Interpretation</th>
<th>Compliance category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk assessments</td>
<td>Moderate to good quantitative compliance</td>
<td>C - B</td>
</tr>
<tr>
<td>Preventive and protective services</td>
<td>Good quantitative compliance</td>
<td>B</td>
</tr>
<tr>
<td>Information for workers</td>
<td>Good quantitative compliance</td>
<td>B</td>
</tr>
<tr>
<td>Training of workers</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
</tr>
<tr>
<td>Health surveillance</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
</tr>
<tr>
<td>Consultation of workers</td>
<td>Poor to moderate/good quantitative compliance</td>
<td>D – C/B</td>
</tr>
</tbody>
</table>
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

Source: COWI evaluation team

The first CPM of the Framework Directive, and the cornerstone of implementation of the OSH acquis, is the requirement that enterprises shall regularly conduct risk assessments. In the context of SMEs, we find that the share of establishments that regularly undertake risk assessments increases with the size of establishments as illustrated in Table 4-13. This correlation remains, when compliance rates are adjusted for the fact that small and medium sized establishments are slightly more inclined to take the necessary follow-up actions after having identified a risk during a health and safety check, which is a prerequisite for compliance. Generally, most establishments, independent of size, take the necessary follow-up actions once risks have been identified (91 %). However, SMEs are slightly more likely to take full action (as opposed to part action), while larger establishments seem to take more actions of different types than SMEs. The most common reasons for not conducting risk assessments on a regular basis are the fact that hazards and risks are already known and that establishments believe themselves to have no major problems. This is particularly true for the smallest establishments.

ESENER (2009) data also clearly shows that the share of risk assessments being performed by internal staff increases along with the size of the establishment – a correlation that is confirmed in the recent ESENER-2 data (EU-OSHA, 2015). The use of internal staff compared to external staff varies considerably between MSs. According to ESENER-2, the highest share of internally performed risk assessments is found in Denmark (76 % of establishments), the United Kingdom (68 %) and Sweden (66 %). The lowest shares are found in Slovenia (7 %), Croatia (9 %) and Spain (11 %). Overall, there is a tendency that in Northern and Western-European MSs, risk assessments are more often performed by internal staff than in southern and Eastern-European MSs.

Some challenges with compliance stemming from provisions and characteristics of individual Directives have also been identified. For instance, the Pregnant/breastfeeding workers Directive has given rise to some shortcomings in compliance at the enterprise level, mainly because employers find it difficult to identify special risks for pregnant and breastfeeding women (i.e. to include this aspect into the risk assessment), and secondly, because they find it difficult subsequently to identify suitable work accommodations (ref. Pregnant/breastfeeding workers Directive).

On the overall level, according to ESENER-2, 76 % of all enterprises in EU-28 carry out risk assessments on a regular basis, although compliance varies considerable from MS to MS ranging from 94 % of establishments in Italy and Slovenia down to 37 % in Luxembourg. In Table 9-4, we have summarised quantitative compliance levels for all MSs based on ESENER-2 data (cf. Figure 4-9).

Table 9-4  Quantitative compliance with risk assessment, by MS, based on ESENER-2

<table>
<thead>
<tr>
<th>Assessed compliance</th>
<th>Interpretation</th>
<th>Compliance category</th>
<th>MSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 % - 100 %</td>
<td>Very good quantitative compliance</td>
<td>A</td>
<td>IT, SI, DK, UK, BG [5]</td>
</tr>
<tr>
<td>75 % - 89 %</td>
<td>Good quantitative compliance</td>
<td>B</td>
<td>ES, RO, LV, SE, CZ, HU, PL, PT, LT [9]</td>
</tr>
<tr>
<td>60 % - 74 %</td>
<td>Moderate quantitative compliance</td>
<td>C</td>
<td>FI, NL, IE, EE, BE, DE, MT [7]</td>
</tr>
</tbody>
</table>
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Compliance Category</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 % - 59 %</td>
<td>Poor quantitative compliance</td>
<td>D</td>
</tr>
<tr>
<td>0 % - 39 %</td>
<td>Very poor quantitative compliance</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SK, AT, FR, CY, EL [5]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LU [1]</td>
</tr>
</tbody>
</table>

Source: EU-OSHA (2015), ESENER-2, COWI analysis

However, as national, non-ESENER data consistently places compliance with the requirement to perform risk assessments at a lower level than ESENER-2 across EU-27, we conclude that, from a quantitative perspective, compliance with the requirement to perform risk assessments ranges from moderate to good compliance, with large establishments in some MSs being in very good compliance and small establishments in other MSs displaying poor compliance.

A total average calculated based on national ESENER-2 data and the calculated CSR data equals 3.56, which according to our interpretation Table 4-8, corresponds to category B, i.e. **good quantitative compliance** with the requirement to perform risk assessments across MSs and establishment sizes.

Moving to the second CPM, an aggregated assessment of the collected evidence, reveals **good quantitative compliance** with preventive and protective services across MSs and all sizes of establishments. However, we find that SMEs and micro enterprises have a higher degree of non-compliance with preventive and protective services. Compliance tends to be highest in sectors which have traditionally been acknowledged to have more occupational accidents and diseases, such as Mining and quarrying, Manufacturing, Electricity, gas and water supply and Health and social work. Furthermore, evidence suggests that psycho-social and ergonomic risks are addressed by specific experts to a limited extent, although it should be noted that these issues may be covered by a general health and safety consultancy.

In the context of the third CPM on general OSH information for workers, evidence suggests that quantitative compliance across MSs is very good and the quality of the information provided seems adequate across all sizes of establishments in **establishments with an employee representative**. However, differences between compliance levels suggested by ESENER and national data extracted from the CSRs along with survey data from the Eurobarometer is likely to be caused by the fact that the assessed ESENER compliance indicators are extracted from the ESENER survey of employee representatives. ESENER data, therefore, only reflects compliance in those 69 % of establishments that have an assigned employee representative. In light of our previous finding that safety and health representatives have a significant positive impact on the level of compliance (cf. Table 4-12), we therefore estimate that the level of compliance across MSs in establishments with employee representatives is **good quantitative compliance**, while it is likely to be somewhat lower in establishments without safety and health representation.

On the subject of the CPM related to the training of workers, an aggregated assessment of the collected evidence, reveals a **moderate quantitative compliance** with training of workers across MSs and all sizes of establishments. According to national data sources from some MSs, compliance tends to be lower in micro and small establishments, while ESENER data suggests the opposite, namely that more employee representatives in smaller establishments receive more training, while also being more satisfied with the training they receive, than those working in larger establishments. Evidence also suggest that so-called indirect compliance through training of safety and health representatives (as opposed to workers themselves) on traditional OSH risk, such as accident prevention and fire safety, seems to be quite high. Contrarily, training on prevention and measures related to psychosocial risks and risks associated with exposure to chemical and...
biological agents, radiation or dust hazards has been provided to less than half of the surveyed ERs. Of these, a total of 5% of safety and health representatives report that they have received a sufficient amount of training. Generally, additional training is desired amongst ERs on all surveyed OSH issues apart from fire prevention.

In the context of health surveillance, little may be derived from the Directive-specific Reports, which were challenged by a lack of Directive-specific data on health surveillance. Based on national and EU data, we may conclude that quantitative compliance with the CPM seems to be poor across all establishment sizes in those establishments without a safety and health representative while it seems to be moderate in establishments with an employee representative (cf. Evidence Table 4-19). Furthermore, quantitative compliance with the health surveillance requirement increases with the number of employees employed in the establishment. An aggregated assessment of the collected evidence, reveals a moderate quantitative compliance with health surveillance services on average across MSs and all sizes of establishments.

In the context of worker consultation, on the EU-level across MSs and establishment sizes, data on compliance with consultation of workers seems to yield varying results. The main reason for this is that consultation of workers, to a large extent, is achieved by means of safety and health employee representation, wherefore those establishments that have employee representatives generally have good quantitative compliance. On the other hand, we cannot assess the extent to which safety and health representatives include the workers they represent, nor the extent to which establishments without employee representatives are in compliance. Furthermore, employee representatives are consulted to a slightly higher extent in small establishments (84.3% in establishments with 10 to 19 employees) compared to large establishments (80.6% in establishments with +500 employees). However, as small establishments are much less inclined to have an employee representative, quantitative compliance with consultation of workers generally increases from poor compliance to moderate or good quantitative compliance as the number of employees in the establishment increases. As a result, we may simply deduct from the collected findings that quantitative compliance is lower than reported by unadjusted ESENER data, and we therefore cautiously conclude that compliance with consultation of workers ranges from poor to moderate/good quantitative compliance.

9.2.4 Accompanying actions

The number of accompanying actions varies greatly from directive to directive, both at the Member State level and at the EU-level. Stakeholders do not seem to be concerned about those directives where there are only a limited number of accompanying actions at the EU level, mainly because other institutional or global actors have already provided the necessary guidance and information documents. It appears that EU-level guidance is often primarily used as a basis for national-level guidance and rarely reaches individual workers. At the Member State level, there are some directives for which the number of accompanying actions is limited and there is a general demand for more targeted actions, especially those directed to SMEs. Practical tools, forms and check-lists that enable employers to comply with OSH obligations are considered by stakeholders (at the national level) as the most useful accompanying actions. The practical approach that aims at providing sectoral templates for risk assessment (e.g. OIRA) is welcomed by all stakeholders who recognise the potential for simplification and time-gain when using such tools.
There appear to have been very few formal evaluations of the utilisation or impact of any such material, although some isolated studies of individual measures have been reported (e.g. Melrose et al., 2007).

9.2.5 Enforcement

Our evidence points to the existence of general enforcement authorities responsible for occupational safety and health matters, although other authorities may be involved or fully responsible for areas covered by certain individual directives, in particular the two mineral extracting industry directives, the vessels-related directives and directives targeting vulnerable workers. While the actual number of inspectors in the EU has remained constant in the evaluation period (2007-2012), there are many Member States where the number has decreased (16). Many stakeholders emphasised that there is room for improving enforcement in general, such as the use of more risk-based inspections, as already done in several Member States. Thus, focussing inspections on where the main risks are expected to be encountered is thought to be a more efficient use of dwindling resources than a truly random selection would be. However, although it may intuitively appear to be a sound concept, no evidence has been found to support the view that this would be a more effective approach, especially given the wide differences in enforcement philosophies between MSs.

All Member States have criminal and/or administrative sanctions in place, providing not only for imprisonment and/or fines but also for other types of sanctions such as various emergency measures to stop non-compliance, which can also prove very efficient. The strategic priorities for inspection are generally set per sectors or sub-sectors, groups of workers, type of risks or the company size.

9.2.6 Initiatives targeting potentially vulnerable workers

Initiatives targeting potentially vulnerable workers principally address their specific requirements through various forms of guidance, tools and initiatives at a number of levels (government, industry or other stakeholders), rather than through legislation, which typically does not go beyond the EU requirements as far as vulnerable workers are concerned. As a consequence, women, pregnant and breastfeeding workers, young people, temporary workers and disabled workers are the most frequently covered groups as they are regulated under EU legislation. Other groups also covered include, in particular, older workers, migrants, part-time workers, and parents. Approaches within establishments with regard to potentially vulnerable groups of workers are poorly documented.

9.2.7 Specific measures targeting SMEs and micro-enterprises

Most Member States (with the exception of AT and UK) have established (a combination of) specific measures to support SMEs and micro-enterprises in the implementation of their legislation transposing the Framework Directive. These specific measures include exemptions, a lighter regime and/or financial incentives. Only a few of the individual directives have been transposed using additional incentives for SMEs to comply with their requirements. However, many Member States have developed numerous accompanying actions targeted at SMEs that are typically of a more general nature and not linked to a specific individual directive.

However, the quality of guidance and support tools is crucial. Thus, simply looking at the number of guidance documents does not in itself provide evidence of adequate guidance for SMEs. A report
from the Depart of Businesses, Enterprises and Regulatory Reform (2009) in the UK concludes that:

‘The way that government guidance is currently produced and disseminated leaves SMEs with a great deal of uncertainty, deterring them from using it and creating additional costs for their businesses. Many businesses are unclear about whether following guidance means they have complied with the law. They do not always know where to get the right help. Firms are put off by the amount of information included in guidance and receive conflicting messages from different parts of the Government’.

It has not been possible to formally assess the quality of the extensive body of guidance listed and described in this study (see, for example, the CSRs). Nevertheless, despite the quantity of material available, there still appear to be indications that more and better guidance are needed to support implementation in SMEs.

9.3 Conclusions on current and future relevance

Relevance in relation to labour market
Almost all of the 24 Directives are relevant in all 27 MSs to the extent that all MSs have workers employed in relevant industrial sectors; who are consequently exposed to relevant risks; or who are members of vulnerable groups that are the subject of specific rules (pregnant/breastfeeding workers, young people, and temporary workers).

The primary exceptions to this are the two Directives relating to marine sectors (including fishing), as a minority of MSs do not have any workers employed within one or both of the marine and fishing sectors (or at least those parts of these sectors addressed by the two Directives). In such cases, some MSs appear to have taken the administrative action to transpose the provisions whilst others have not done so. Where the former is the case, the absence of any relevant industry means that no additional burden is placed on employers.

A further exception relates to the Directive on the extraction of minerals through drilling (Drilling Directive) where, although the provisions of this Directive have been transposed into national legislation in all MSs, approximately 20 % of MSs apparently have no drilling industry at present.

The proportion of workers potentially covered by each of the Directives has been assessed from EU-level statistics relating to relevant employment. Across the EU, the proportion of workers potentially covered by each of the Directives varies. For some Directives, including the Framework and Work Equipment Directives, 100 % of workers are affected. In contrast, a number of Directives, including the two maritime Directives, those relating to Mines and Quarries and Drilling, and the Young People Directive, are of relevance to less than 1 % of the EU workforce. In some cases, such as those Directives relating to physical or chemical agents, the assessment is of potential relevance, in that statistics do not permit the determination of the extent to which individual workers in a particular sector are actually exposed to the agent in question.

Relevance in view of existing provisions
Quantitative data illustrating any ongoing need for each Directive is not always readily available.
However, based on the data that is available, it appears that most of the provisions for most of the Directives remain relevant. However, there are exceptions, as detailed in Chapter 5 and in greater detail in the individual Directive reports. For example:

Extension of the provisions of the Framework Directive to cover the risks faced by the self-employed would, it seems, increase the reach and effectiveness of the Directive.

There is a reasonably clear impression that the concept of ‘specific risk’, as embodied in Article 6 of the Work Equipment Directive, needs to be more clearly defined and explained.

Removing the exclusion of the emergency services would increase the future relevance of the Use of PPE Directive amongst this subset of workers.

One Directive which attracted a lot of comment was the DSE Directive. This Directive includes (Article 9) provisions aimed at the ‘Protection of workers’ eyes and eyesight’ even though there is widespread consensus in the scientific literature (and also referred to in some NIRs) that work with computers does not cause any damage to the eyes or eyesight (although use of computers can give rise to visual discomfort and other symptoms). In addition, epidemiological surveys suggest that the prevalence of eyesight problems amongst DSE users is no different from that amongst the general population.

The same DSE Directive (Article 3) includes reference to ‘problems of mental stress’ even though epidemiological surveys suggest that the prevalence of such problems amongst DSE users is no different from that amongst the general population, and the extensive literature on risk factors relevant to mental stress does not suggest a particular focus on users of DSE (nor that most of the provisions of the DSE Directive would address these risk factors).

The minimum requirements for DSE workstations, which all such workstations must meet (Articles 4 & 5), presented as an annex to the DSE Directive, are widely recognised to be outdated and to not adequately reflect modern computing technologies or ways of working.

The current version of the EMF Directive has yet to be fully transposed or implemented in most MSs. As summarised in Chapter 5, authoritative reviews by WHO and EU-OSHA have published doubts over the nature and extent of the risks it addresses. As a result of these reports, the extent to which the risks addressed by this Directive are a significant problem in workplaces, warranting legislative control in the form of an EU Directive, is unclear. Possibly reflecting this, there have been suggestions from within NIRs that the Directive places requirements on employers which are disproportionate to the risks (and therefore benefits) associated with this Directive.

Although widely regarded as a ‘vulnerable group’, the limited quantitative evidence available on accidents and diseases calls into question the need for the Directive, suggesting that Temporary workers are no more likely to sustain injury or develop work-related ill-health (and possibly less) than those in permanent employment.

The evidence available relating to the need for the Young People Directive is inconsistent, suggesting that young people (under the age of 18 years) are less likely to develop work-related ill health than their older colleagues, although they are more likely to sustain a non-fatal injury at work.
One area of ongoing concern is the incidence of occupational cancers and the relevance of the **Carcinogens or Mutagens Directive** in addressing these. It should be noted that not all agents which cause or contribute to work-related cancers are covered by the provisions of this Directive (e.g. shift work). However, for those which are, the long latency between exposure to carcinogens or mutagens in the workplace and the emergence of disease makes it virtually impossible to establish the effectiveness of the provisions of the Carcinogens or Mutagens Directive, and consequently their ongoing relevance. Specifically, it is not possible to determine whether there are deficiencies in the provisions of the Directive (warranting amendment) or insufficiencies or inadequacies in their implementation within MSs (warranting better compliance).

### 9.3.1 Future developments for risks not currently addressed

Looking forward, although some changes in the relative importance of different work sectors can be anticipated it seems that, in general, no meaningful changes in risk exposure, and therefore no changes to the need for any specific Directives, are expected.

However, there are some new or emerging risks (or concerns regarding ongoing risks) where there are concerns over the adequacy of existing provisions to meet both current and future needs. As noted in Chapter 5, changes to any Directive which would impact on its future relevance will also usually be of significance for the current situation.

**Work related MSDs**

Work-related MSDs remain at a high level within the EU workforce. Control of the hazards giving rise to the risks of such injuries is a complex field and it is recognised that there are many MSD-related hazards which are not addressed by the existing Manual Handling and DSE Directives. Any examination of the research literature on other MSD risk factors, especially those associated with combinations of force, posture and repetition, demonstrates that, although the basic principles are well-understood, it is a complex and complicated area in which to legislate. In particular, the often complex interactions between these three factors would not lend itself to the prescriptive approach endorsed by some MSs, running the risk that some work activities would be unnecessarily curtailed whilst others would (erroneously) not be identified as risky. It is understood that the available options have previously been extensively described and explored within the Commission and elsewhere.

Evidence from comments and responses relating to the Manual Handling and DSE Regulations, as well as the experience of experts working in the field, suggests that employers often appear to adopt an overly simplistic approach to manual handling hazards. This suggests that adopting a similarly prescriptive approach for other MSD hazards, in the form of a third (or combined) directive, would not be very effective in controlling hazards and reducing any risk of injury. However, as this appears to be the favoured approach in some MSs, it is suggested that consideration be given to commissioning an ergonomics assessment of the feasibility of generating prescriptive material (suitable for legislation) relating to MSDs not related to manual handling or DSE work, to indicate whether or not such an approach could be viable (172).

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(172) It is understood that such a feasibility study might already have been undertaken. However, no such report or its findings have been made available to the authors.
Many MSs have prepared relevant guidance material (including risk assessment aids) and it is suggested that that the wider preparation and distribution of such material, combined with some form of enabling legislation (possibly in the form of an amendment to the Framework Directive) offers a potentially effective and efficient solution. Comments and responses collated during the course of this study, again supplemented by comments from OSH experts, suggest that there is less motivation for ameliorative action on the part of employers in the absence of legislation, implying that guidance alone is less likely to be effective.

Nanoparticles and nanomaterials

The possible health effects of nanoparticles and nanomaterials are of some concern amongst MSs. However, there is no current consensus over whether these concerns are best addressed through the existing Chemical Agents and Carcinogens or Mutagens Directives (possibly with amendment) or whether a new Directive is required. Despite this lack, it is clear that action is required to address this area, at least to clarify the situation. There appears to be a balance to suggest that existing legislation is sufficient, although clearly actions will be necessary to convince all stakeholders of this and to provide guidance on this matter.

Psychosocial risks

Ill-health associated with work-related psychosocial risks are a further concern and a major current cause of sickness absence amongst the EU workforce. Given the considerable negative impact on health of psychosocial risks it is clear (and appears to be generally if not universally accepted) that some form of action is required. There is, however, no consensus over the best approach to their control within the evidence available to this review (NIRs, interviews and the validation seminar). Although there are nuances of opinion within groups, employer stakeholders in particular appear to be reluctant to accept further legislative provisions, whilst worker stakeholders seem to consider such provisions essential, with little support for guidance alone.

Apart from no action at all (which it seems to be agreed is not an option), three possible approaches can be outlined (although there are undoubtedly others). These are: a non-legislative approach based around the use of (agreed) guidance; goal-setting legislation; and prescriptive legislation. At the seminar held with stakeholders to discuss some of the issues emerging from the study (‘validation seminar’), the option of amending the Framework Directive to explicitly mention psychosocial risks (to make their inclusion as risks explicit), and then addressing the issue by information and guidance, was not universally well-received, although some participants did endorse a fully non-legislative approach. Others, however, expressed a preference for a more detailed legislative solution.

The extensive research literature on psychosocial risks, including the interaction between occupational and non-occupational factors, makes this a complex field to legislate in. However, as noted above in respect of MSD risks, comments and responses collated during the course of this study, again supplemented by comments from OSH experts, suggest that there is less motivation amongst employers for ameliorative action in the absence of legislation, implying that guidance alone is less likely to be effective.

The complexities and interactions of different risk factors suggest that a prescriptive approach would not provide an effective tool for controlling psychosocial risks. However, the OSH culture in some MSs does not readily lend itself to a more goal-setting legislative path. As the prescriptive approach appears to be that favoured in some MSs (possibly the majority), it is suggested that consideration be given to commissioning a scientific assessment of the feasibility of generating
prescriptive material (suitable for legislation) relating to psychosocial risks, to indicate whether or not such an approach could be viable \(^{(173)}\). This could be used to inform a decision on the form and content of legislative developments in this important area of worker health.

Current ongoing major health concerns such as occupational cancers, MSDs and stress, as well as accidents and injuries at work, are likely to remain significant issues for the foreseeable future. MSDs and stress are, and are likely to remain, the most common causes of sickness absence.

The OSH *acquis*

In respect of the future relevance of the OSH *acquis*, cross-cutting issues have been identified in respect of the use of goal-setting or prescriptive approaches to directives. This issue has been discussed in some detail in Section 9.1. Whilst there is only limited evidence to support the selection of one over the other (which suggests that a goal-setting approach is more effective), there is evidence from a number of sources to suggest that the current mixed situation is unhelpful and confusing. There is also evidence from several directive reports to suggest that prescriptive approaches are more likely to become outdated and less amenable to change. Furthermore, as noted above, there are clear indications that some of the more pressing risk factors such as those MSD risks not already addressed, and psychosocial risks, are not readily amenable to the prescriptive approach with its implicit requirement for compliance testing. Therefore, it would seem that there is a need for some form of dialogue over the future ‘style’ or approach of directives, to ensure the overall ongoing future relevance of the OSH *acquis*.

Aging worker population

Finally, an aging worker population is likely to present new or increased challenges and risks in the future, although care should be taken not to imply that the changes associated with an aging workforce are necessarily negative. Changes in abilities and susceptibilities within such a workforce require careful consideration, with thought given to any need to amend or adjust OSH legislative provisions to reflect these.

The contribution of age-related degenerative change will cause problems related to MSDs to continue. Disorders such as back problems related to excessive manual handling at work and those attributable to age-related degenerative change are equally debilitating and provide a clear direction towards a need for the increased integration of occupational health with wider health promotion and management programmes. Thus, employers will need not only to manage the risks of causing MSDs amongst their workforce, but will increasingly need to adopt measures to enable those with age-related MSDs to continue at work.

9.4 Conclusions on effectiveness and costs and benefits

In this section, we present the conclusion of the assessment of the effectiveness of the OSH *acquis*. The conclusions are presented in two main subsections. First, we present the conclusions on the directives’ contribution to ensuring health and safety of workers and reaching their objectives, i.e. EQE1-4 and EQE7, which was assessed in Chapter 1. Secondly, we present the conclusions from the assessment of the benefits, costs and broader effects of the OSH *acquis*, i.e. EQE6-7, which was assessed in Chapter 0.

\(^{(173)}\) As with MSDs it is not known whether or not any such feasibility study has already been conducted.
9.4.1 Directives' contribution to ensuring health and safety of workers and reaching their objectives

Understanding of objectives

The first step in assessing the extent to which objectives have been achieved is to establish the nature of the objectives and what defines the desired end-situation, which should be achieved. The evaluation approached this through establishing intervention logics for each of the 24 Directives (as well as a generic intervention logic for the acquis as a whole). These intervention logics are described in the individual Directive reports. This exercise showed that typically, beyond a general aim to improve the health and safety of workers, objectives in terms of the desired health and safety impacts are not very clearly stated in the Directives – if at all.

It is obvious that, in general terms, the Directives aim to improve the health and safety situation for workers across the EU. However, the more specific intended impacts, such as the kinds of occupational diseases to be prevented or reduced, are often not identified. This means that, for many Directives, there are no clear parameters against which to measure the progress towards achievement of objectives.

It must be recognised that this is also a reflection of the complex interrelations between exposures to various risks at the workplace and specific health and safety impacts – and between different OSH measures targeting various groups of workers, types of risk or sectors, and their effects on levels of exposure. It is no easy task to define precisely what a Directive aims to do. Nevertheless, it is striking that the legal texts of the Directives rarely offer much insight into the rationales behind the Directives and their intended safety and health impacts.

The understanding of objectives is furthermore challenged by the situation that the OSH acquis contains a mixture of Directives representing a goal- and process-oriented approach, and Directives representing a prescriptive approach. In general, those with specific actions prescribed are more open to confirming compliance (although this is sometimes referred to as the 'tick box approach'), while those Directives which are more goal-setting need suitable outcome measures to confirm that their goal has been achieved.

The evaluation has analysed objective achievement, looking at objectives at different key levels following the intervention logic structure:

› Objectives concerning specific requirements to be followed by employers – focusing in particular on the 'common processes and mechanisms', i.e. process-management actions to be taken (risk assessment, information, training, health surveillance, consultation).

› Objectives concerning impacts at the workplace occurring as a result of implementing the specific requirements.

› Objectives concerning the health and safety impacts occurring as a result of changes/impacts at the workplace (i.e. reduced number of accidents or occupational disease).
Effectiveness – compliance and workplace impacts

Transposition
It is clear that a precondition for achieving objectives regarding compliance with specific requirements as well as workplace impacts is that the Directives have been transposed into Member State legislation. As noted above (Section 9.2.3), the evaluation has shown that the Directives have generally been correctly transposed, and that there are only a few issues in this regard, which have not been resolved and which still influence the level of implementation within the period covered by the evaluation (2007-2012). Derogations and transitional periods are not considered to have had a major impact on the implementation and effectiveness of the Directives.

Compliance – implementation on the ground
The next step in the assessment of the impact of the Directives is to consider whether establishments actually implement the requirements 'on the ground', and whether this leads to changes at the workplaces, which can help to reduce the exposure of workers to various OSH risks. In this regard, the evaluation has looked in particular at the common processes and mechanisms (CPMs) and the extent to which they are implemented.

Overall, the evaluation finds that quantitative compliance with the CPMs is moderate to good overall across the EU and across establishment sizes. However, there are differences between the CPMs and between Member States. It should be noted that these findings are largely based on survey data and that there appears to have been very little systematic independent evaluation of compliance within MSs (or of the quality of any such assessments). Thus, requests for information as part of NIRs, or searches for information by national experts, have resulted in little supplementary material.

Information from various sources indicates that the presence of legal requirements is an important factor (but certainly not the only one) influencing the compliance behaviour of establishments. This suggests that, by requiring the introduction of such requirements in all MSs, the Directives will have had an impact on compliance behaviour.

One important observation in relation to implementation of the CPMs is that some Member States already had similar legislation in place, prior to adoption of the Framework Directive. The goal-oriented approach was thus already enshrined in the legislative framework of some Member States, whereas others had to make considerable changes. This also means that the high level of objective achievement as regards compliance with CPMs cannot be ascribed to the Directives alone.

EU-level data on compliance is limited mainly to the ESENER survey, which was conducted in 2009. Data from the most recent survey, conducted in 2013, has only been available to the evaluation to a limited extent. This means that it has not been possible to assess changes in compliance across the evaluation period. Hence, it is impossible to assess whether or not a particular effect has occurred during this period. We can say with reasonable certainty that the Directives have had a positive impact on compliance with the CPMs, but whether this impact has been achieved during the implementation period or before is very uncertain. Precisely what has happened since 2009 is also not clear from the existing data, although the available data from ESENER 2013 tends to confirm that levels of compliance have remained stable.
The evaluation shows that there are no clear differences between public and private establishments in relation to implementation of CPMs. However, when considering size of establishment, SMEs and micro-establishments generally display lower levels of compliance with the CPMs, compared to large establishments. Thus, achieving the goal of implementing the CPMs has been achieved to a much greater extent in larger establishments than in SMEs.

The evaluation has pointed to some factors which are considered to have affected the level of goal achievement in relation to CPM implementation. These include, in particular:

› The Framework Directive in itself sets out the goal-oriented approach and the CPMs thus provide a clear structure and approach to be applied. This has been common practise in some MSs for many years whereas others have had (and continue to have) a more traditional management system, with prescriptive legislative approaches embedded in their regulatory regimes. Evidence from a variety of sources suggests that those MSs with regulatory systems with a longer tradition of goal-oriented and participatory OSH management tend to be associated with greater levels of OSH management practice implementation.

› An analysis of the interlinkage of the CPMs across Directives, and thus their suitability to work in tandem and collectively increase the safety and health of workers, reveals that the collected OSH legislation is unnecessarily complex, in part due to a seemingly unstructured and unsystematic inclusion (or lack thereof) of CPMs in the individual Directives. While in legal terms, this has been handled by use of e.g. 'without prejudice' clauses, the findings of the evaluation indicate that, in terms of practical understanding and implementation, the interlinkages between the CPMs are not fully consistent across the Directive. These problems are often transferred into the national legal frameworks, thus preventing a fully coherent and cohesive approach. This, in turn, has caused some confusion at the enterprise level, and particularly amongst SMEs, leading to misinterpretations of the provisions of legislation or Directives and, according to some OSH experts, some unnecessary duplication of effort.

› The OSH acquis in itself represents a mix of the goal-oriented approach and the prescriptive approach, as mirrored in particular in some of the individual Directives. While not incoherent from a legal point of view, these two approaches are conceptually inconsistent and can work against each other in practice. On the one hand, the goal-oriented approach asks to identify the most suitable means to arrive at a certain end, whereas the prescriptive approach specifies the means to be applied with a view to reaching the same end.

› Enforcement, and particularly the combined role of inspectors enforcing the legislation and providing guidance on implementation, is generally considered to have a significant influence on compliance with the OSH acquis. This is particularly true in SMEs, within which a lack of recognition of non-compliance is prevalent. Seen in this light, it is a cause for concern that the level of enforcement across MSs varies to a very high extent.

› Strong evidence suggests that employee representation has noticeable influence on the proportion of establishments performing risk assessments, and an even more pronounced impact on other key requirements. Data suggests that risk assessments performed by external service providers reduce the need to maintain in-house expertise and more often result in a lack of subsequent anchoring of OSH principles in the establishment, in comparison to risk assessments performed by internal staff. This is likely to impact on the position of health and safety generally within an organisation’s business and priorities.
Improvements in working conditions

The next question in the impact chain is to consider whether compliance with Directive requirements has led to improvements in working conditions as could be expected. The assessment of establishment behaviour is essentially an analysis of how the level of compliance has changed over time, particularly from 2007 to 2012. The assessment is pivotal because it establishes a foundation from which to assess the safety and health developments and link potential improvements in the health and safety of workers to the implementation of the OSH acquis. Any improvements to the safety and health of workers which occur in line with the implementation of the OSH acquis (taking into account potential delays of effects) underpins the deduction that improvements occur as a direct result of the Directives’ implementation. This analysis builds on the mapping of compliance presented above, and therefore relies on the same data sources which are the NIRs, ESENER variables and individual variables from other data sources (Eurobarometer 398 and European Working Conditions Surveys). However, none of this data allows for an analysis of compliance over time. We are therefore compelled to proceed to assessing the trends in exposure to health-related risks without a fundamental knowledge of whether establishments are complying with the OSH acquis to an increasing extent, or micro and small establishments are closing the compliance gap (compared to larger establishments), etc.

Effectiveness – health and safety impacts

Further in the impact chain, the question is whether the moderate to high level of compliance with the CPM requirements is translated into less exposure to risk factors and hence, fewer accidents at work and less work-related disease.

The data on work-related accidents and diseases shows, in general, that the incidence of accidents has decreased during the evaluation period. Data on exposure to risks provides a conflicting picture. At the general level, indications are that workers generally appear to consider their health and safety to be less at risk (2013) than they did previously (2007) and that they are less likely to report that their work (adversely) affects their health across the same time period. However, indications from more specific analyses, conducted as part of the individual Directive reports, suggest that indices related to various occupational diseases have remained constant or increased, except for a few specific cases.

Although there are many variables involved, it appears likely that the decrease in incidence of accidents at work can at least to some extent be ascribed to the implementation of the Directives, as this can be linked to the level of compliance with the CPMs. Increasing safety and reducing accidents is a key element in any risk assessment.

As noted above, quantitative material relating to occupational diseases and ill health is less readily obtained and that which is available is patchy, incomplete, and not readily related to the OSH Directive acquis. However, it is a key concern that apparent exposures to risks related to various occupational diseases have typically either remained stable or increased during the implementation period. The two most prominent work-related diseases, stress and MSDs, have both seen substantial increases in exposure to related risk factors (although with stress it is perhaps understandable given that there are no specific OSH provisions which address psychosocial risks). MSDs do have two specific Directives that address two major hazards contributing to MSDs (although, as noted earlier, these do not address all of the recognised risk factors).

A major problem in assessing the impact of the Directives on the health of workers is the inadequacy of the data systems available for making any such assessment. Even with the example
of MSDs given above, it is not possible to establish the extent to which recorded MSDs were caused by those risk factors encompassed by the Directives and therefore the extent to which adequate implementation of their provisions should have prevented them. Against this background, the limited data sources available generally suggest, however, that the Directives are not effective at targeting occupational diseases.

One challenge with respect to MSDs is their multi-causal nature. Thus, apart from non-work exposure to risks in a non-work environment (e.g. prolonged sitting during leisure activities) some MSDs have a strong genetic component (such as the spinal degeneration referred to in Chapter 5, although genetic predisposition impacts on individual susceptibility rather than direct causation). However, this does not remove the need for action in the workplace (in the same way as leisure exposures to noise (for example) do not exempt employers from a need to reduce noise).

These two conclusions appear to be mutually contradictory. If compliance with CPMs is generally quite high, why are we only seeing a limited effect in terms of combatting occupational illness? Or why is a generally high reported level of compliance not leading to better results? Based on the existing data, it is not possible to provide exhaustive answers to these questions, but some key factors emerge from the findings in this evaluation:

› The compliance data might be misleading. There are some published studies which have suggested that the quality of compliance is often poor, so that even amongst those organisations who report compliance, the extent of effective compliance is likely to be less.

› As part of this, risk assessment performance occasionally diverts attention away from managing identified risks, particularly in SMEs. This showcases the impact of non-recognition as SMEs tend to believe that, having followed legislative requirements and conducted a risk assessment, they are in compliance. Contrarily, risk assessments in SMEs are often of insufficient quality to ensure adequate risk management and, even in larger organisations, the risk management measures adopted may not be the most appropriate. Evidence from OSH practitioners, supported by material examined during this study (such as NIRs), suggests that the quickest, easiest, cheapest solution might be the one adopted. As a specific example, a number of NIRs report that, in response to identified manual handling risks, organisations frequently resort to manual handling training, regardless of whether or not it is the most appropriate measure.

› There seems to be a general view that the Framework Directive, with its orientation towards a goal-oriented approach to OSH (rather than a prescriptive one) successfully lays out a suitable template for managing workplace risks – but not in itself enough to ensure that all risks are dealt with sufficiently. One criticism of the goal-setting approach is that the absence of prescriptive intermediate goals makes compliance harder to verify and, in the absence of that verification procedure, harder to enforce (especially in OSH cultures with a history of the prescriptive approach).

› Even with a high level of good quality compliance with OSH requirements, such a regime will be ineffective if the wrong provisions are adopted, either through initial misconceptions in formulating the provisions of a Directive, or because the provisions originally formulated are no longer relevant to the hazards present in the workplace. It would be wrong to make sweeping generalisations here, as the situation varies between Directives and the individual directive reports should be seen for more details on any particular subject. Thus, some directives do appear to still address relevant risks correctly and do contain provisions which, if correctly and
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

Competently implemented, should result in suitable risk management. Directives such as those relating to noise and vibration fall into this category. Although those relating to MSDs appear to fall into the second category, the reality is more complicated. The hazards addressed by the Manual Handling Directive for example still remain relevant – it is hazards not addressed by this Directive, which create further risks of MSDs which are omitted. Similarly, the hazards arising from working for prolonged periods with DSE still remain, it is just that the DSE encompassed by the prescriptive element has lost relevance.

A further area where the inadequacies of the current OSH acquis can be identified relates to the somewhat piecemeal manner in which vulnerable groups are covered. Some such groups: pregnant workers, young people, temporary workers, have specific directives. However, each of these can be paralleled by another group who do not have specific protection: the susceptibilities of the fertility of male workers, older workers and migrant workers have all been recognised, but are in effect only addressed by the general provisions of the Framework Directive. Older workers perhaps warrant particular mention, since concerns about the implications of an aging workforce pervaded many of the discussions and interviews carried out as part of the evaluation, as well as featured in the research literature.

For some possibly vulnerable groups, the protection is even less because they are excluded from the provisions of the OSH acquis, either entirely or partly. Groups excluded in some way include the self-employed and home workers. The latter present particular challenges because, for example, developments in DSE and related technologies mean that DSE users might perform their work at home, or at other remote locations. Then there are those whose work is within the home setting, such as domestic workers. In such cases, protection could almost be regarded as a ‘Member State lottery’ in that the extent to which you are offered protection, if at all, depends on which MS you work in, as some MSs have already exercised their right to make more detailed provisions and extend OSH protection to such groups.

All of these factors present challenges in terms of evaluating the effectiveness of the existing provisions and of ensuring the ongoing relevance of the OSH acquis to the hazards and consequent risks faced by the EU workforce in the future.

Effectiveness of current data and systems enabling monitoring of the implementation of the Directives

As also described in the Commission’s better regulation guidelines, part of effective regulation is monitoring to generate evidence on activities and impacts over time in a continuous and systematic way. The guidelines, among other things, state that the monitoring system should provide time series data, which is more reliable in explaining behaviour than one-off data collection exercises.

It is observed that the Directives, apart from most of them referring to the five-yearly reporting requirement, make little or no reference as to how they will be monitored. As shown in the analysis of EQE1-6, there are some important sources of data at the EU-level, which do enable some monitoring of how the Directives have been implemented. ESENER, ESAW and EWCS do provide valuable input, but in terms of time-series based data suitable for monitoring of each individual Directive, these data sources certainly also have serious flaws. To mention the most important of these, the data from ESENER and EWCS are not annual (and hence not proper time series data) and all three data sources do not enable data drilling to the necessary detail required to monitor individual directives. Furthermore, there is no uniform data collection related to occupational diseases at the EU-level.
Most of the Directives are encompassed by the general requirement to report to the Commission about their implementation every five years. This evaluation report should be seen in conjunction with this procedure, as it builds on the National Implementation Reports (NIRs) submitted by the Member States by December 2013. Having a report every five years from the Member States on the implementation of all these Directives hence also marks a unique opportunity for collecting data and filling gaps where sources, such as those mentioned above, do not give sufficient insight. Our experience from working with the data in the NIRs is that, although they do provide some valuable information, the quality varies between Directives and between Member States. This is partly because the respondents in the Member States have taken different interests in answering the questions posed in the questionnaire devised by the Commission. However, it is our assessment that it also has a lot to do with the fact that the questions are often phrased in an open and ambiguous manner, and can be (and have been) understood in many different ways. For this reason, the responses from the Member States are often not comparable and reflect different interpretations of the question posed. This reduces the value of the NIRs as a data source to an important extent.

Furthermore, as discussed in section 7.3.1, fifteen Directives contain reporting obligations. These obligations could be seen as a basis for EU-wide data collection of data pertaining to the implementation of the Directives, but no initiatives have been taken to streamline reporting in these areas, which at least by the lawmakers were considered the most pertinent. This is considered a lost opportunity, as it must be assumed that the Member States have put in place systems to implement these obligations, and therefore, making arrangements to ensure a streamlined approach and comparable data across the Member States would have entailed limited additional effort in most cases.

The lack of data, and the resulting limitations, have not only posed a methodological problem for the evaluation, but also reflect a fundamental problem for policy and regulatory development in relation to OSH. A clear understanding of the relationship between specific risks and their adverse consequences provides an important basis for addressing those risks.

9.4.2 Costs, benefits and broader effects

A key question in any economic evaluation is whether benefits outweigh costs. We did not identify any CBA of OSH at the societal level, and we therefore do not have solid evidence that the benefits outweigh the compliance costs at the societal level. However, because our analyses show that the OSH acquis is unlikely to bring any substantial costs for the worker, benefits are likely to outweigh costs for workers.

Moreover, the analysis shows that benefits generated by the health and safety effects of the acquis primarily fall on the individual workers, while most of the compliance costs fall on enterprises. However, the results do not necessarily imply that OSH is not profitable for enterprises. While there is a paucity of CBA studies focusing on OSH legislation, we identified several studies that assess the profitability of OSH interventions at the enterprise level. Although it is too simplistic to conclude that OSH always will be profitable, we did identify a number of case studies showing that OSH can indeed be profitable for enterprises (including SMEs). Based on this literature, the following conclusions can be drawn:

(174) Ref. Framework Directive (89/391/EEC), Article 17a
Ergonomic interventions were the most common type of intervention in the literature, and the available reviews found that there is strongest evidence for the profitability of ergonomic interventions and disability management programmes. Possible explanations of the profitability of ergonomic interventions might be related to the low costs of the interventions (training, simple equipment etc.), and the high relevance of ergonomics, because MSDs are a major cause of absenteeism and reduced productivity.

Wide-ranging interventions appear to be more profitable than interventions targeting a particular issue related to a specific sector or type of enterprise.

Interventions that mainly concern training and organisational change appear to be more profitable compared to interventions based on technical changes, such as the installation of dust ventilation systems. Moreover, participatory interventions that include workers appear to be most profitable.

The assessment of compliance costs indicates that cost might be higher for SMEs. However, data from the interviews and the literature also indicates that SMEs, in particular, benefit from the health and safety impacts of the acquis, because a major accidents are more likely to have severe consequences in SMEs.

Benefits and broader effects

To date, it is not possible to estimate how the health and safety impacts from the acquis translates into economic benefits, because of the difficulties in establishing a causal relationship between observed health and safety effects and the lack of national and EU-level data on cost of accidents and ill health. However, based on the available data the following conclusions can be drawn:

Data from seven Member States shows that the costs range between 1-3 % of GDP, which underlines the magnitude of costs of work relates accidents and ill health at societal level. Data from the UK shows that these cost primarily fall on the workers (57 % of the total costs), whilst 23 % fall on government and 20 % on the enterprises. Quality of life losses account for almost all costs borne by the worker, whilst the majority of costs for employers arise from productivity losses. Lost income, in terms of state benefits paid and lost tax receipts, and health and rehabilitation costs account for the majority of government costs.

Today, the costs of disability following work-related ill health stems primarily from MSDs and mental health problems. In the Netherlands, these diagnoses are responsible for 83 % of the cost of work-related ill health: MSDs (43 %) and psychosocial disease (40 %). Likewise, mental health problems accounts for almost half of all new claims in Denmark, Sweden and Switzerland.

The effectiveness evaluation shows that the incidence of accidents decreased during the evaluation period. Although there are many variables involved, it appears likely that this decrease, at least to some extent, can be ascribed to the implementation of the Directives. At the same time, estimates from the HSE in the UK have shown that societal costs of work-related accidents and ill health have fallen by 14 % from 2006/07 to 2012/13. Thus, it is likely that the reductions in work-related accidents also have translated into economic benefits for workers, enterprises and society.
The effectiveness evaluation shows that apparent exposures to risks related to various occupational diseases have typically either remained stable or increased during the evaluation period. Most notably, the two most prominent work-related diseases, stress and MSDs, have both seen substantial increases in exposure to related risk factors. Moreover, MSDs do have two specific Directives, which address two major hazards contributing to MSDs although, as noted earlier, these do not address all of the recognised risk factors. Considering that these are also among the most disabling and costly work related diseases, it is unlikely that the acquis has achieved its potential for generating economic benefits.

The analysis also points to several broader societal benefits. While there are few empirical studies on the subject, data from the interviews shows that stakeholders primarily highlight increased OSH awareness. Moreover, the analysis of the national transposition of the OSH acquis clearly shows that the Directives have influenced national agendas and the awareness of OSH in enterprises. The evidence for innovation, quality of products and competitiveness is much weaker, but the available literature points to a link between level of competitiveness and level of occupational accidents.

### Compliance costs

Our assessment shows that all Directives generate both administrative and substantive compliance costs. Moreover, in accordance with the Standard Cost Model (SCM), we categorised the majority of the CPMs as administrative costs, although these are considered key provisions in the OSH acquis. It should be noted that the SCM have received a fair amount of criticism, especially from stakeholders representing worker organisations, and that researchers point to several methodological weaknesses, including the assumption of full compliance. The analysis of the level of compliance clearly shows that this assumption is not valid. Consequently, the model might overestimate administrative costs. Moreover, the SCM does not provide a full economic evaluation. Notably, it does not take into account the benefits.

In this evaluation, we did not collect data from enterprises (176). Instead, we interviewed EU and national stakeholders and reviewed the literature to identify relevant studies. However, EU and national stakeholders were not able to quantify costs and the vast majority reported that their knowledge on this topic was limited. Moreover, the literature review revealed that few studies have estimated compliance costs (the majority having only looked at administrative costs) and typically these studies only cover one Member State and only partially cover some Directives. Thus, knowledge from these studies is fragmented and weak. However, based on the collected data, we draw the following conclusions:

- The majority of obligations fall on enterprises. Thus, it is most likely that the Directives generate costs for enterprises. Whilst overlaps and inconsistencies have not resulted in double regulation from a legal perspective, the practical implications for enterprises might result in higher compliance costs.

- The General Directives, especially the Framework Directive, and the CPMs target all enterprises and are therefore likely to generate the highest costs (from a societal perspective). However, it should be noted that this might not be the case from the enterprise perspective. Some obligations might be rather costly for the individual enterprise, but because the

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(176) In the Standard Cost Model, and other models used to assess compliance costs, an assessment of costs requires that data from enterprises, and sometimes experts, are gathered and analysed.
obligation only applies to a small sector or industry, the total cost from the societal perspective can be quite small.

The literature shows that a substantial part of the administrative costs is likely to be business as usual. Consequently, the actual burden is rather small. Costs, however, are likely to vary considerably from Member State to Member State and from enterprise to enterprise.

The literature indicates that costs are likely to be higher in SMEs. Moreover, one study from the UK shows that external consultancy might have a strong effect on costs in SMEs. In the evaluation of compliance, we found that the use of external consultants increase according to enterprise size (the smaller the enterprise, the more likely it is to use external consultants). The reason might be that larger enterprise more often have the competency in-house. However, this also means that the third sector is likely to play a considerable role in relation to cost of compliance among SMEs. In the UK, the third sector is one of the fastest growing sectors and its relevance in the future is therefore likely to increase.

9.5 Conclusions on Coherence

9.5.1 Internal coherence

Few overlaps and limited double regulation

The analysis of the 24 OSH Directives has not resulted in the identification of major coherence issues. There are no contradictory provisions and very few overlaps between the OSH Directives. The legal articulation between OSH Directives through in-built mechanisms (e.g. specific scope, without prejudice clause, exemptions, lex specialis principle) has in most cases contributed to avoiding overlaps and inconsistencies between provisions (177).

Furthermore, most of the few overlaps identified do not result in double regulation in practice (e.g. double reporting requirements) and therefore do not lead to additional costs when applied by employers. In the absence of problems of legal articulation between the OSH Directives, it can be concluded that from a ‘coherence approach’ the overall structure of the OSH acquis, based on a Framework Directive and individual Directives covering specific occupational risks, does not need to be changed and similarly no major changes in individual Directives (e.g. merging Directives) are required.

Scope for broadening application of certain provisions

The analysis of CPMs and key requirements across Directives, however, revealed that some provisions which regulate specific risks (e.g. agents, workplaces, targeted workers, equipment) under the current OSH acquis could apply to broader categories of workers and risks, and that there is no obvious justification (e.g. hazard-related, additional unnecessary cost) to restrict their application and related health and safety benefits to certain occupational risks, workplaces and workers.

(177) According to the mapping section the legal articulation between OSH Directives transposing measures is not always done in a systematic fashion and cross-references are not sufficient to ensure a coherent and cohesive approach across national legislation.
9.5.2 External coherence – EU non-OSH legislation

Several interfaces have been identified between the OSH Directives and other EU measures and/or policies. Among these interfaces, very few coherence issues arose. The coherence issues identified are all discussed in greater detail in the appropriate individual Directive report. However, they can be classified under the following categories:

Inconsistency

Despite close links with Directive 2000/54/EC (biological agents), the scope of Directive 2010/32/EU (sharp injuries) does not cover all the categories of workers that might be exposed to infection through sharp injuries (e.g., workers dealing with special/contaminated waste management treatments or researchers in laboratories).

Overlaps leading to application of contradictory requirements

Overlaps have been identified between the Derived No Effect Levels (DNELs) in REACH and the occupational exposure limits (OELs) in the Chemical Agents Directive.

Lack of legal clarity in the interface

Directive 2013/30/EU on safety of offshore oil and gas operations refers to the complementarity of the reporting requirements under this Directive and the ones under Directive 92/91/EEC (drilling). However, it does not provide further details on the articulation between the two reporting requirements.

Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people) set specific employment rights that are not always linked to occupational health and safety issues (e.g., working time provisions allowing young people to combine work with school attendance or time off for ante-natal examinations and prohibition of dismissal of pregnant/breastfeeding workers). It is noted that, in some cases, these reflect a second (not necessarily secondary) function of the Directive, for example in implementing Human Rights provisions.

Directive 2009/13/EC (Agreement on the Maritime Labour Convention) and Directive 2008/106/EC (on the minimum level of training of seafarers) contain some medical treatment requirements equivalent to the ones set under Directive 92/29/EC (Medical treatment on board vessels). Commercial seagoing ships falling under Directive 2009/13/EC will have to comply with medical treatment requirements under these three directives.

Possibility to enhance synergies

The relevant provision concerning the award criteria under the Public Procurement Directives mentions ‘social characteristics’ as a possible criterion to be used by contracting authorities, without further details or specific reference to occupational health and safety obligations on behalf of the tenderers.

The main interaction between the two ATEX Directives concerns the selection of equipment and protective systems as defined under Directive 94/9/EC (ATEX Equipment) to be used in the different zones as defined under Directive 1999/92/EC (ATEX). Several Member States expressed some concerns about this interaction leading to potential barrier to the free movement of equipment across the EU.

Safety Data Sheets (SDSs) under REACH provide important information to employers for performing their risk assessment at the workplace and adopting adequate risk management
measures. However, some employers expressed concerns about difficulties they encounter using information from SDSs.

9.5.3 External coherence – International instruments
In several instances, international conventions (i.e. 15 ILO Conventions and one IMO Convention) ratified by at least some Member States, set additional or more stringent requirements than the EU acquis (see section 7.2.3).

9.6 Recommendations
Based on the conclusions presented above, a number of recommendations emerge from the evaluation. These are presented below and represent four main clusters/groups of recommendations:

1. Structure and coherence of the OSH acquis
2. Addressing on-going and emerging risks
3. Compliance, enforcement and SMEs
4. Data and monitoring of effects

These recommendations provide a cross-cutting overview. In addition, most of the Directive reports make specific recommendations, which are not duplicated here, but should be examined and considered alongside the evidence presented in support of those recommendations.

9.6.1 Recommendation cluster 1: Structure and coherence of the OSH acquis
Recommendation 1.1: Maintain structure of acquis with a Framework Directive and individual directives
The evaluation shows that, although some individual Directives adopt at least elements of a more prescriptive approach, the goal-orientated approach enshrined in the Framework Directive and in the CPMs is relevant, works effectively, and provides a clear overall structure for implementing OSH management (although other challenges with the structure of the OSH acquis compromises this clear structure, cf. recommendations below). Furthermore, the goal-oriented approach is in line with better regulation principles, which emphasise that regulation should, as far as possible, be general in nature and cover the objectives, periods of validity and essential requirements, while technicalities and details should be left to the Member States to decide. The evaluation also shows that it is relevant to have individual directives to address specific risks and specific sectors. However, although the overall approach and structure provides a relevant framework for OSH management, this should not be construed as endorsing all of the detailed provisions. There are a number of recommendations to bring the individual directives up to date and to ensure coherence and consistency across the acquis. These are presented below.

Recommendation 1.2: Develop the *acquis* more in the direction of the goal-oriented approach

As discussed in Section 9.1, the evaluation finds that the *acquis* currently reflects a mix of the goal-orientated approach and the prescriptive approach. While this does generally not give rise to legal incoherence, it is conceptually inconsistent. Furthermore, the prescriptive approach brings with it a requirement to continually update the legislation to bring it up to date. The evaluation finds that the Directives of a prescriptive nature have generally failed to have incorporated such updates (for example, technological advances in DSE over the last 25 years have not been reflected in amendments to the DSE Directive). In areas where prescription is necessary, it can be advantageous to establish co-regulation measures linking up with existing widely recognised standardisation mechanisms to avoid incoherence and have an efficient updating process. However, such instruments seem not to have been taken advantage of in the current set-up of the *acquis*. On this basis, it is suggested that:

› Directives with a highly prescriptive content be reviewed and Annexes shortened or removed and relevant elements of the annexes be transferred to updated guidance documents (in particular relevant to the Workplace Directive, the Drilling Directive, Fishing vessels Directive, the Manual Handling Directive, OSH signs Directive)

› Directives with a potential for alignment with standardisation mechanisms could be updated in this respect (in particular relevant to consider for the Signs Directive and the Drilling Directive).

› When amending directives, an analysis of the intervention logic of the directives could be performed, and goals against which the performance of the directive should be measured could be clarified (building on intervention logics of this evaluation where relevant).

Recommendation 1.3: Streamline the application of the CPMs

Analysing the interlinkages of the CPMs across Directives, and thus their suitability to work in tandem and collectively increase the safety and health of workers, the evaluation found that, although the overall approach is relevant, the collected OSH legislation is unnecessarily complex, in part, due to a seemingly unstructured and unsystematic inclusion (or lack thereof) of CPMs into the individual Directives. These problems are often transported into the national legal frameworks preventing a fully coherent and cohesive approach. This, in turn, has caused some confusion at the enterprise level, and particularly amongst SMEs, leading to misinterpretations of the provisions of legislation or Directives. It should be noted that these concerns reflect the manner in which the CPMs have been included rather than any concerns regarding the integrity of the CPMs themselves. Some concerns have been expressed (for example amongst OSH professionals) that this leads to additional effort (and therefore costs) on the part of employers. On this basis, it is suggested that:

› References in individual Directives to applying the CPM provisions in the Framework Directive (without further elaboration) be removed.

› Review of the Framework Directive to include requirements, which although set under individual Directives only could apply to all risks, workers and workplaces. Such a review would also be justified by the fact that the Framework Directive has not been significantly amended since its adoption in June 1989, whereas the individual Directives have been amended throughout the years and some of them were recently adopted (e.g. Directive 2013/35/EU). In fact, an important number of the provisions that could be streamlined in the
Framework Directive come from the Directives recently adopted or amended. The criteria used to identify such provisions include the scope and rationale of the Framework Directive and the level of prescription of the provision considered so that the inclusion would not restrict the Member States and employers' flexibility in implementing these general principles.

**Recommendation 1.4: Strengthen the external coherence of the directives**

- **EU non-OSH policy:** In order to enhance synergies between the Strategy for the sustainable competitiveness of the construction sector and its enterprises and Directive 92/57/EEC (construction), health and safety education, training and capacity building programmes should be developed and promoted in the construction sector. As underlined by a study on the future challenges of the construction sector, these programmes should specifically target health and safety coordinators at construction sites.

- **EU non-OSH legislation:** Directive 2000/54/EC (biological agents) and Directive 2010/32/EU (sharp injuries). Review of the scope of Directive 2010/32/EU (sharp injuries) to cover all workers exposed to sharp injuries leading to infections by biological agents should be considered, since it would have a positive impact on limiting worker exposure to biological agents.

- **Application of OELs and DNELs:** The inclusion of in-built provisions either under REACH and/or Directive 98/24/EC (chemical agents) to coordinate the adoption of OELs and DNELs and/or to clarify which value must prevail. Other options would be to:
  - To enhance the cooperation between SCOEL and ECHA (RAC) when establishing limit values as required under Article 95(1) REACH and Article 5(5) COM Decision 2014/113/EU in order to clarify potential scientific divergences;
  - To re-evaluate the methodologies used to define OELs and derive DNELs in order to obtain comparable results;
  - To ensure that REACH registrants take into account OELs recommended by SCOEL when deriving DNELs without being challenged in other regulatory processes; and
  - To reconsider Member State competence to set higher or stricter OELs in order to allow the applications of harmonised OELs across the EU.

- **Reporting requirements under Directive 2013/30/EU on safety of offshore oil and gas operations and under Directive 92/91/EEC (drilling):** The articulation of the reporting requirements should be clarified through the adoption of guidelines on the interface between the two directives.

- **Employment rights under Directive 92/85/EEC (pregnant/breastfeeding workers) and Directive 94/33/EC (young people):** Despite the fact that no coherence issues were identified, the streamlining of provisions setting employment conditions and rights for pregnant/breastfeeding and young people at work under the current EU labour legislation (e.g., Working Time Directive) should be considered for better clarity. This streamlining should at least apply to the provisions setting employment rights that are not directly linked to the health and safety at work of young people and pregnant workers (e.g., working time provisions allowing young
people to combine work with school attendance or time off for ante-natal examinations and prohibition of dismissal of pregnant workers).

› Medical treatment requirements for commercial seagoing ships: While this does not lead to double-regulation, for the sake of legal clarity and to avoid confusion, the removal of requirements on medical treatment under Directive 2009/13/EC and Directive 2008/106/EC that are already covered by Directive 92/29/EC could be envisaged. This would avoid confusion in the application of medical treatment requirements on-board vessels.

› Public Procurement Directives and OSH award criteria: The reintroduction of a link between the award criteria or contract performance conditions and the fulfillment of OSH requirements by the (potential) contractor in the provisions of the Public Procurement Directives should be considered to enhance health and safety at work through public procurement incentives.

› Directive 1999/92/EC (ATEX) and Directive 94/9/EC (ATEX equipment): In view of the concerns raised by some Member States, the review of the definition of zones to ensure similar interpretations in Member States and avoid barriers to the free movement of ATEX equipment should be considered. However, this would imply setting up prescriptive conditions without allowing Member States to set more stringent definitions of zones, which is contrary to the a minima approach of the EU OSH acquis. The development of guidelines for the application of Directive 1999/92/EC (ATEX) to equipment and protective systems placed on the market before the entry into force of Directive 94/9/EC (ATEX equipment), and equipment not falling under the scope of this Directive, could also be considered to enhance the synergy between the two.

› Safety data sheets under REACH and application of Directive 98/24/EC (chemical agents) and Directive 2004/37/EC (carcinogens or mutagens): In order to enhance the synergy between REACH and Directive 98/24/EC (chemical agents) and Directive 2004/37/EC (carcinogens or mutagens) on the use of Safety Data Sheet, we recommend the preparation of awareness-raising campaigns (e.g. through the REACH helpdesks and/or EU-OSHA) to inform employers on how to use the SDSs for their risk assessment in order to ensure that they are able to extract relevant information from the SDSs to fulfil their obligations under Directive 98/24/EC (chemical agents) and Directive 2004/37/EC (carcinogens or mutagens). It would also be important to improve the usability and readability of SDSs for OSH purposes to enhance this synergy.

› International instruments: The incorporation of additional requirements under international instruments in the relevant EU OSH legislation would ensure a level playing field across the Member States. As an alternative (or a first step), when it is not yet the case, the adoption of a Council Decision authorising the ratification of the relevant convention by Member States and to further promote ratification should be envisaged.

Recommendation 1.5: Reconsider how to address vulnerable groups

The evaluation shows that vulnerable groups are not addressed in a consistent manner in the current acquis. Some groups (young workers, pregnant/breastfeeding workers, temporary workers) are addressed by an individual Directive, but others are not (e.g. older workers, migrant workers, new workers). New groups of vulnerable workers may be identified in the future, and the current legal structure is not suitable for incorporating these in a flexible manner.
Furthermore, there are cross-references to vulnerable groups of workers between worker-specific Directives and risk-specific Directives. While these references are not incoherent from a legal perspective, they do add to the complexity of the legal framework. In addition, the current vulnerable group Directives contain provisions on workers’ rights as well as OSH related provisions. While there are clear links between the two, it could still be argued that provisions on workers’ rights belong to a separate acquis.

The evaluation leads to the recommendation to rationalise the way vulnerable workers are addressed to ensure consistency and coverage of relevant groups. More specifically, it is suggested that:

› The requirements to address the specific needs of vulnerable workers and general prohibitions be more clearly reflected in the Framework Directive, coupled with additional guidance on how to implement this in practice, targeted at various vulnerable groups

› The existing Directives on vulnerable groups be cancelled and relevant provisions be transferred to other Directives:

› Provisions relating to risk-specific prohibitions or other risk-specific provisions be transferred to the relevant risk-specific Directives; and

› Provisions on workers’ rights to be transferred to Directives pertaining to workers’ rights.

9.6.2 Cluster 2: Addressing on-going and emerging risks

Recommendation 2.1: Address risks related to MSDs

Evidence from a number of sources, including the scientific literature, some NIRs, the views of stakeholders interviewed and those participating in the validation seminar, would seem to suggest that there is a need to better address those work factors creating a risk of MSDs not addressed by the two current Directives (display screen equipment and manual handling). However, there is a lack of consensus on what form any action should take.

The options, issues and evidence are debated more extensively in the Manual Handling Directive report. However, it is suggested from this discussion that the complexities of managing the risks of non-manual handling MSDs are unlikely to be compatible with a prescriptive Directive. There is clearly a lot of support for (and against) such an approach in principle. Although, as briefly discussed in the individual directive report, the scientific evidence points towards a more goal-setting approach, the evidence available does not permit a conclusive outcome at this stage. It is suggested, therefore, that consideration be given to commissioning an ergonomics assessment of the feasibility of generating prescriptive material relating to MSDs not related to manual handling or DSE work (179).

At least as an interim measure, consideration should also be given to the option of detailed guidance (for which potential examples are already available nationally) supporting enabling legislation, possibly in the form of an amendment to the Framework Directive, or at least a clear

(179) It is understood that such a feasibility study might already have been undertaken. However, no such report or its findings have been made available to the authors.
direction that the goal set by the Framework Directive (of assessing and managing workplace hazards and risk factors) can be met through appropriate application of such guidance.

**Recommendation 2.2: Address psychosocial risks**

Given the considerable negative impact on health of psychosocial risks, it is clear (and appears to be generally, if not universally, accepted) that some form of action is required to address the growing issue of ill-health arising from exposure to psychosocial risk factors in the workplace. What is not clear is the nature of such action. Many of the factors giving rise to such problems are well known. However, given their complexities and interactions, they clearly do not readily lend themselves to the type of prescriptive directive (possibly incorporating ‘exposure limits’) favoured by some MSs. Equally, some stakeholders are strongly opposed to what they see as ‘just’ guidance.

Clearly, some action in this area is desirable, given the high incidence of work-related problems associated with psychosocial risks. Apart from no action at all (which, it seems agreed, is not an option), three possible approaches can be outlined (although there are undoubtedly more). These are a non-legislative approach based on the use of (agreed) guidance, goal-setting legislation, and prescriptive legislation. Although there are currently two tripartite agreements in place addressing aspects of psychosocial risks (covering ‘stress’ and ‘violence and harassment’), there is a widespread message from MSs that these are not sufficient to address psychosocial risks.

It is also argued by some that Article 5(1) of the Framework Directive (‘The employer shall have a duty to ensure the safety and health of workers in every aspect related to the work.’) provides a sufficient legal basis. Again, the implicit message from the MSs would seem to suggest otherwise, given the extensive comments (in the NIRs and elsewhere) for a need to address psychosocial risks. At the validation seminar, both the option of amending the Framework Directive to explicitly mention psychosocial risks (to make their inclusion as risks explicit), and addressing the issue by information and guidance, were not universally well received, although some participants did endorse a fully non-legislative approach. Others, however, expressed a preference for a more detailed legislative solution.

The extensive research literature on psychosocial risks, including the interaction between occupational and non-occupational factors, makes this a complex field in which to enact legislation. However, comments and responses collected during the course of this study, again supplemented by comments from OSH experts, suggest that there is less motivation for ameliorative action in the absence of legislation, implying that guidance alone is less likely to be effective. This is supported by survey results (ESENER-2) that show legislative requirements as the primary driver for OSH action for many employers.

Based on an extensive appraisal of the scientific literature on psychosocial risk factors, their complexities and interactions suggest that a prescriptive approach would not provide an effective tool for controlling psychosocial risks. However, the OSH culture in some MSs does not readily lend itself to a more goal-setting legislative path. As the prescriptive approach appears to be that favoured in the majority of MSs, it is suggested that consideration be given to commissioning a scientific assessment of the feasibility of generating prescriptive material (suitable for legislation) relating to psychosocial risks, to indicate whether or not such an approach could be viable. This could be used to inform a decision on the form and content of legislative developments in this important area of worker health.
Recommendation 2.3: Give attention to updating of relevant Directives

A number of the Directive-specific reports contain direct indications of where their relevance has failed to keep abreast of developments in the workplace. One specific example would be that of the DSE Directive, where advances in new technology and knowledge of relevant workplace hazards and risks appear to warrant considerable change. Attention is drawn to this and other Directive-specific reports to address the recommendations they contain for updating them.

Recommendation 2.4: Streamline provisions dealing with chemical agents across Directives to ensure coherent coverage of risks related to various chemical agents

The analysis of the legal coherence of Directive 2004/3007/EC (carcinogens or mutagens), Directive 2009/148/EC (asbestos) and Directive 98/24/EC (chemical agents) identified a number of different individual areas of legal inconsistency or a lack of coherence between the three Directives. It is widely recognised that the Asbestos Directive reflects a very different scenario and series of highly specific control measures (and there appears to be little support from any source for its merger with the Chemical Agents Directive). However, one solution suggested with regard to the remaining two was that of merging them into a single Directive. There have been numerous comments and suggestions made, from a variety of different sources, both for and against any such suggestion.

This issue is discussed to some extent in the Chemical Agents Directive report. The outcome of this was that, other than the argument for greater legal clarity through rationalisation, there is no evidence-base on which to argue for or against such a move. Given the absence of any coherent evidence-base, it is therefore clear that, other than acknowledging the issue, no clear conclusions or recommendations can be drawn from this work. However, clarification of legal requirements might well serve to address some of the concerns about a lack of clarity and a certain level of confusion regarding the provisions under these two directives, and it is recommended that amendments are considered to the Chemical Agents Directive and Carcinogens or Mutagens Directive to ensure coherent coverage of risks related to various chemical agents.

Recommendation 2.5: Streamline provisions dealing with physical agents to ensure coherent coverage

The evaluation has found that it is relevant to maintain the physical agents Directives as there are differences in the risks involved, the approaches to risk management and the settings of different limit values, which justify the existence of distinct directives. However, some provisions in certain physical agent Directives could apply to all physical agents and would thus benefit all workers exposed to such agents. However, more consistency in the way CPMs are drafted across the various physical agent Directives would facilitate their application at the workplace.

9.6.3 Cluster 3: Compliance, enforcement and SMEs

Recommendation 3.1: Increase compliance of SMEs

The evaluation provides evidence to suggest that SMEs are less compliant with the requirements of the OSH Directives than large establishments. Although SMEs display lower incidence rates of accidents at work and also show a decreasing trend in number of accidents at work similar to large establishments, it is still considered that increasing the compliance of SMEs is likely to lead to additional benefits in terms of avoiding work-related accidents and diseases.
The key challenge in this respect is how to reach the SMEs and encourage them to make necessary changes. The data collected for the evaluation indicates that SMEs are often not consciously incompliant, that they typically do not react well to written guidance (often finding it too complicated) and that they rely on external services to a greater extent than large establishments. SMEs are best targeted through a more personalised approach, combining enforcement and guidance. Clearly, it would be burdensome for inspectorates to target SMEs using conventional approaches to inspection, so the challenge is to find new and innovative ways of reaching the SMEs in an efficient and effective way. Below, the main suggestions for key initiatives that would promote this are presented.

It is not recommended to establish exemptions for SMEs and micros, as this would lead to a lowering of the levels of protection for some workers.

› Continuing the further development and dissemination of already existing effective tools, in particular the OiRA tool. Ensuring that the experience already gathered is used in the most effective way, e.g. that Member States can learn from each other and avoid unnecessary cost in developing custom-made tools and approaches. The role of EU-OSHA is important in this respect.

As part of this, consideration could be given to exploring the approaches adopted in some MSs to make the essential requirements of the Directives more accessible. One specific example would be to further explore the potential of the ‘Control banding’ approach to managing chemical hazards such as ‘Stoffenmanager’ developed in the Netherlands to assist SMEs (see the Chemical Agents Directive report).

› Finding ways to target the SMEs with a personal approach without over-exerting the resources of the inspectorates. This could include moving from the traditional focus on inspections of individual establishments to a broader catalytic approach, considering extended supply chains and targeting upstream actors. Another approach could be to tap into existing business networks and facilitate mutual learning processes among participants. At the European level, this could potentially be promoted by the Commission and the SLIC.

Again, the experience of some MSs in some industries could be of value here. For example, there is evidence from the UK of the benefits of the ‘cascade approach’ to OSH as applied on large-scale construction projects, with construction SMEs learning from their involvement.

› Investigating the promotion of economic incentives, especially in SMEs, such as favourable insurance conditions if certain OSH criteria are met, in order to encourage the development of risk prevention strategies and overall OSH compliance.

› Introducing measures to reduce costs for SMEs could be of value, because compliance costs (measured per worker) tend to be higher for SMEs and because SMEs are less likely to perceive OSH as a financial investment. We do not, however, recommend implementing exceptions or lighter regimes for SMEs, because this could reduce the protection of workers. Rather, increasing financial incentives through financial incentives schemes could be used to motive SMEs. Likewise, accompanying measures in terms of better and more targeted guidance could reduce uncertainty about legal requirements, and thereby reduce costs for enterprises. Moreover, SMEs also need better guidance on the availability of free advice and guidance to reduce costs for external consultancy.
Recommendation 3.2: Inspections

The evaluation finds that there is a large degree of variance in the number and frequency of inspections across the Member States. To some extent this undoubtedly reflects national differences in the approach to inspections and enforcement (e.g. those MSs who adopt a risk-based system for prioritising inspections). It could however be interpreted as suggesting that the Directives may not be enforced to the same extent in the Member States, which again leads to a concern over the extent to which there is a level playing field. The available data does not allow these (or other) explanations to be systematically explored. It has to be noted that as the Directives only set minimum requirements, they do not in themselves aim to achieve a completely level playing field (rather one in which significant ‘dips’ are levelled out). It is also noted that the requirement to enforce the legislation transposing the Directives is not very clearly articulated in the current provisions in the Directives. At the same time, it is clear that legal requirements and inspection are key determinants in explaining why establishments develop OSH policies and take OSH action, so there is a need for a strong effort in this area to ensure the implementation of the Directives and to aim for a greater harmonisation in the way the legislation is enforced. On this basis, it is suggested to:

› Consider whether a clearer reference to the obligation to enforce the requirements should be included in the Framework Directive; and

› Strengthen existing coordinating mechanisms for enforcement and inspection, potentially coupled with a stronger emphasis on competence building and guidance to inspectorates. The SLIC would be a key factor in this respect.

Recommendation 3.3: Strengthen focus on risk management

The evaluation carried out as part of this study shows that there is a high level of compliance with the requirement to perform a risk assessment, whereas compliance is lower (but still reportedly fairly high) in relation to the other CPMs. The evaluation also calls attention to evidence, from some MSs at least, that the issue that a sole focus on risk assessment may divert attention from risk management. However, it should also be noted that in several cases, evaluations of individual Directives resulted in conclusions regarding inadequate or insufficient risk assessment procedures for a given Directive, which did not adequately address Directive-specific hazards, risks, challenges and/or circumstances. There is thus a need for a dual focus on further enhancing the quality of risk assessments, while at the same time ensuring that the measures identified in the risk assessment are, in fact, implemented and the risks properly managed. In order to work towards these aims, it is suggested that:

› Guidance on implementation of the CPMs and Framework Directive is updated and disseminated focusing not just on risk assessment, but on the entire plan-do-act cycle.

› In light of these conclusions on the apparent differences in effectiveness of risk assessments carried out in-house or by external service providers combined with the considerable differences across MSs of the dissemination of the two approaches, it is necessary to consider which provisions of support match the different challenges. Clearly, different kinds of advice and guidance are required in relation to these two approaches (EU-OSHA, 2013c), and with evidence pointing to significant differences in risk assessment quality, this variance constitute room for improvement and increased effectiveness of the CPM.
We thus cautiously repeat the fundamental question raised in the European Risk Observatory of ‘how the use of external services to carry out risk assessments fits within the Framework Directive’s principles of prevention and protection through a coherent overall policy’ (EU-OSHA, 2013c). We recommend that the answer to this question be coherently incorporated in the legislative framework, possibly by seeking to promote the use of internally conducted risk assessments or establishing minimum requirements on management participation when using external services, which might ensure co-ownership and competence development in management.

In order to improve the contribution of preventive and protective services to the effectiveness of the OSH acquis, it could be considered whether the requirements regarding the availability of such services should be further enhanced in the Framework Directive.

Our analysis shows a possible need to revisit the provisions related to the CPM of health surveillance, as the MSs have very different approaches to transposition of this requirement. Although it is, of course, open to MSs to adopt more stringent measures relating to this as well as any other provisions, there appear to be differences in how the provision is interpreted, which may lead to differing OSH standards for workers.

As part of this, there have been some questions raised about the purpose (and therefore value) of some such requirements. For example, monitoring of hearing ability provides reassurance of the effective implementation of the provisions of the Noise Directive (as well as possibly identifying the small minority of particularly susceptible individuals not protected by the Exposure Limit). In contrast, it has been suggested (see the Asbestos Directive report) that the symptoms of asbestos-related disease emerge too late for the health surveillance required under this Directive to fulfil a similar role.

A total of 57 % of employee representatives report that they have received a sufficient amount of training. There is, in other words, a continued need for training on health and safety risks, and on emerging risks in particular. As these proportions refer to the training of safety and health representatives, it is reasonable to assume that the training of workers is more limited. This indicates that, while all the evidence suggests that training and information is a pivotal element in the process of improving the safety and health of workers, the effectiveness of the CPM on training may have been moderate.

9.6.4 Cluster 4: Data and monitoring of effects

Recommendation 4.1: Improve monitoring systems to obtain better information on effects of the Directives

The evaluation shows very clearly that there are very limited data at the EU level to assist in assessing the specific effects of the Directives and the extent to which they are achieving their goals. There is a need for better monitoring systems to be able to follow up on whether the legislation is working as intended in terms of reducing exposure to hazards and consequently reducing the incidence of accidents and work-related disease. It is assessed that, in order to make the Directives ‘fit for purpose’, there is a need to better define and execute the monitoring plan for the Directives. This includes considering the three key questions also posed in the better regulation guidelines: 1) What evidence needs to be collected? 2) When and how should evidence be collected? 3) Who will collect the evidence and from whom?
It is recommended that consideration should be given to developing better, more consistent data recording systems at the national and EU level which better reflect the relationship between causal factors and consequent injuries and occupational disease; and therefore assist in identifying risks and risk prevention strategies (as well as aiding future evaluations but this should not be the primary purpose for doing so). One way forward could be a focus on a step-by-step approach whereby, for example, some of the most commonly recognised and commonly occurring occupational diseases were dealt with first.

Whilst many of the Directive reports make only general statements regarding the inadequacies of data sources (and a need for improvement), others include specific recommendations on how to achieve this. These include the Asbestos Directive report and the Chemical Agents Directive, where specific approaches are advocated. For example, existing requirements for employers to collect data on asbestos workers and remit it to the authorities if required could provide the basis of a valuable centralised data collation. Such an initiative could provide an earlier insight into the effectiveness of the Asbestos Directive than waiting for cases of the long-latency asbestos diseases to become known.

It is noted that this would be consistent with the ‘preferred option’ presented in the 'Report on the current situation in relation to occupational diseases' systems in EU Member States and EFTA/EEA countries, in particular relative to Commission Recommendation 2003/670/EC concerning the European Schedule of Occupational Diseases and gathering of data on relevant related aspects.'

‘The second option would involve progressively improving the recognition and identification of occupational diseases in all MS through a combination of stimulating and innovative recommendations and selective reporting obligations to the European Commission, Eurostat and EU-OSHA.’

Complete implementation of Commission Regulation (EU) No 349/2011 (implementing Regulation (EC) No 1338/2008) should go some way towards improving consistency of the data provided by MSs.

As a general principle, it is suggested that existing requirements in some directives for employers to collect data and remit that data to the authorities if required provide the basis for data collection systems relating to these specific issues. As they already have an obligation to collect this data, the additional requirement to remit it to the authorities should not generate any significant additional burden on employers. Perhaps initially, on a voluntary basis as proof of concept, these data could be collected and remitted to the EU and could provide the feed data for an EU-wide collation. Non-legislative agreements could provide guidance on the data requirements to facilitate compatibility between data sets. This would provide for a more efficient use of those existing databases and registers which are already in place in the MSs.

Finally, cost-benefit analysis provides important information for policy makers, but we need better national data on both costs and benefits. Moreover, to conduct cost-benefit analysis at the EU-level, we need more in-depth examination of existing country-specific literature and databases,

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(180) European Commission (2013c)
analyses of structural differences between MSs and a standardisation of national methodologies. To ensure a sufficient level of accuracy in the analysis, this exercise will require considerable resources and effort. Moreover, the goal-setting requirements in the Directive means that assessing the actual costs of compliance will be very difficult. Thus, alternatively, costs benefit analyses, based on case studies from the enterprise perspective, might be a more realistic option.

Most of the available literature either focuses on costs or benefits. We caution against initiating cost-reducing measures without assessing the impacts, because a more costly activity could also bring about larger benefits, making it more profitable than a less costly measure (as shown in the literature on profitability).
Appendix A  Literature list


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Appendix B  Labour market coverage

The following table indicates which parts of the EU labour market – represented by the NACE Rev.2 economic sector codes – are covered by the 24 OSH Directives being evaluated:

› **General Directives** cover most economic sectors. In particular, the Framework Directive and the OSH signs Directive cover all sectors and all workers within these sectors. This is also the case in principle for the Work Equipment Directive, although there are a few sectors where the use of work equipment is negligible and there are sectors where not all workers are exposed to safety and health risks connected with the use of work equipment. Similarly, the Use of the PPE Directive in practice covers only the economic sectors where personal protective equipment is needed. Finally, the Workplace Directive excludes as part of its scope: agriculture, forestry and fishing; mining and quarrying; construction; and the transport sector.

› **Type-of-worker Directives** cover also all the economic sectors. However, the Temporary workers Directive focuses on the safety and health of the workers with a fixed-duration employment relationship or a temporary employment relationship. Similarly, the Pregnant/breastfeeding workers Directive focuses female workers in the child bearing age. Finally, the Young People Directive has those under 18 years as its scope.

› **Sector-specific Directives** cover obviously specific sectors – i.e. the Construction Directive covers workers on temporary or mobile construction sites, the Mines and Quarries Directive covers surface and underground mineral extracting industries, while the Drilling Directive covers the drilling activities within the mineral extracting industries. The Vessel Directive covers a part of the water transport sector, while the Fishing vessels Directive covers a part of the fishing sector.

› **Hazard-specific Directives** cover specific hazards in the nature of things that workers may be exposed to in certain sectors. However, it will in most cases be the case that not all workers in a given sector are at risk. For example, the Vibration Directive focuses on the work processes that involves hard-arm, arm or whole-body vibrations. Similar exposure delimitations are in place for the Noise Directive, the EMF Directive, the AOR Directive, the ATEX Directive, the Carcinogens or Mutagens Directive, the Chemical Agents Directive, the Asbestos Directive, and the Biological Directive. Finally, the Manual Handling Directive covers the sectors and workers who handle loads manually, and the DSE Directive covers work processes where display screen equipment is used.
### Table 9-5  Labour market (NACE Rev.2 codes) covered by the 24 OSH Directives

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### Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States

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### EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

| R92 - Gambling and betting activities | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| R93 - Sports activities and amusement and recreation activities | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S - Other services activities | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S94 - Activities of membership organisations | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S95 - Repair of computers and personal and household goods | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S96 - Other personal service activities | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| T - Activities of households as employers; undifferentiated goods etc. | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| T97 - Activities of households as employers of domestic personnel | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| T98 - Unf. goods- and services-producing activities of private households for own use | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| U - Activities of extraterritorial organisations and bodies | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| U99 - Activities of extraterritorial organisations and bodies | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
Appendix C  Evaluation questions

Task 1 Mapping

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| MQ1 | Across the Member States, how are the different ‘common processes’ and ‘mechanisms’ foreseen by the Directives put in place and how do they operate and interact with each other?  
The question should address:  
- risk assessment and the resulting protection measures and preventive actions  
- internal/external protective and preventive services  
- information, consultation and training of workers  
- health surveillance |
| MQ2 | What derogations and transitional periods are applied or have been used under national law under several of the Directives concerned? |
| MQ3 | What are the differences in approach to and degree of fulfilment of the requirements of the EU OSH Directives in private undertakings and public-sector bodies, across different sectors of economic activity and across different sizes of companies, especially for SMEs, microenterprises and self-employed? |
| MQ3a | How do workers / workers’ representatives / experts / public authorities view the degree of fulfilment of legal obligations by employers? |
| MQ4 | What accompanying actions to OSH legislation have been undertaken by different actors to improve the level of protection of health and safety at work and to what extent are they actually used by companies and establishments to pursue the objective of protecting health and safety of workers? Are there any information needs that are not met? |
| MQ5 | What are the enforcement (including sanctions) and other related activities of the competent authorities at national level and how are the priorities set among the subjects covered by the Directives? |
| MQ6 | What are the differences of approach across Member States and across establishments with regard to potentially vulnerable groups of workers depending on gender, age, disability, employment status, migration status, etc., and to what extent are their specificities, resulting in particular from their greater unfamiliarity, lack of experience, absence of awareness of existing or potential dangers or their immaturity, addressed by the arrangements under question? |
| MQ7 | What measures have been undertaken by the Member States to support SMEs and microenterprises? |
## Task 2 Evaluation of relevance, effectiveness and coherence

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<td><strong>EQR1</strong></td>
<td>To what extent do the Directives adequately address current occupational risk factors and protect the safety and health of workers?</td>
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<td><strong>EQR2</strong></td>
<td>Based on known trends (e.g., new and emerging risks and changes in the labour force and sectoral composition), how might the relevance of the Directives evolve in the future, and stay adapted to the workplaces of the future in light of the horizon of 2020? Does the need for EU level action persist?</td>
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<td><strong>Effectiveness</strong></td>
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<td><strong>EQE1</strong></td>
<td>To what extent have the Directives influenced workers' health and safety (harmonisation of levels of protection; exposure to occupational risk factors; the rate of accidents at work and work-related health problems), the activities of workers' representatives, and the behaviour of establishments? For workers, to the extent possible, these effects should be broken down by sex, age, occupation, employment status and by different groups of workers, e.g., migrant, disabled, pregnant workers, etc. For establishments, to the extent possible, these effects should be broken down by sector (public/private), economic sectors of activity, and size of enterprise, especially for SME and microenterprises.</td>
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<tr>
<td><strong>EQE2</strong></td>
<td>What are the effects on the protection of workers’ health and safety of the various derogations and transitional periods foreseen in several of the Directives concerned? (Derogations e.g. in Directives 94/33/EC, 2002/44/EC and 2003/10/EC; and transitional periods e.g. in Directive 2002/44/EC, and in Directive 2003/10/EC in relation to national codes of conduct)</td>
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| **EQE3** | How and to what extent do the different mechanisms and processes that were mapped under task 1 contribute to the effectiveness of the Directives? The answer must consider the following fields:  
> risk assessment processes;  
> training, consultation, participation and information for workers;  
> internal/external preventive and protective services;  
> health surveillance. |
| **EQE4** | To what extent do sanctions and other related enforcement activities contribute to the effectiveness of the Directives? |
| **EQE5** | What benefits (e.g., reduction in working days lost due to work-related accidents or health problems; reductions in number or severity of work-related accidents or health problems) and costs arise for society and employers (including compliance costs and administrative burden) as a result of fulfilling the requirements of the Directives, such as carrying out risk assessment, risk management measures, providing training and information, consultation of workers, protective and preventive services, health surveillance? These aspects should be analysed by size of enterprise, especially for SMEs and microenterprises. Identify, if possible, good practices in terms of cost-effective implementation of the Directives in the Member States. |
| **EQE6** | To what extent do the Directives generate broader effects (including side effects) in society and the economy? The answer should cover as a minimum 'agenda setting', 'learning', influencing national priorities, motivation of workers, innovation (e.g., new production methods), higher productivity, quality of production/services, employment (access of different groups to the labour market), competitiveness and economic growth. |
| **EQE7** | To what extent are the Directives achieving their aims and, if they are not, what causes could play a role? What factors have particularly contributed to the achievement of the objectives? |
| **Coherence** | |
| **EQC1** | What, if any, inconsistencies, overlaps, or synergies can be identified across and between the Directives (for example, any positive interactions improving health and safety outcomes, or negative impact on the burdens of regulation)? |
| **EQC2** | How is the interrelation of the Directives with other measures and/or policies at European level also covering aspects related to health and safety at work, such as EU legislation in other policy areas (e.g., legislation: REACH, Cosmetics Directive, Machinery Directive, policy: Road Transport Safety, Public Health, Environment Protection), European Social Partners Agreements or ILO Conventions? |

(182) Now the Cosmetics Regulations
### Appendix D  Overview of Member State interviews with key OSH stakeholders

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<tr>
<td>E.7</td>
<td>Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding (Pregnant/breastfeeding workers Directive)</td>
</tr>
<tr>
<td>E.8</td>
<td>Directive 94/33/EC on the protection of young people at work (Young People Directive)</td>
</tr>
<tr>
<td>E.9</td>
<td>Directive 92/57/EEC on the implementation of minimum safety and health requirements at temporary or mobile construction sites (Construction Directive)</td>
</tr>
<tr>
<td>E.10</td>
<td>Directive 92/104/EEC on the minimum health and safety requirements for improving the safety and health protection of workers in surface and underground mineral extracting industries (Mines and Quarries Directive)</td>
</tr>
<tr>
<td>E.11</td>
<td>Directive 92/91/EEC concerning minimum requirements for improving the safety and health protection of workers in the mineral extracting industries through drilling (Drilling Directive)</td>
</tr>
<tr>
<td>E.12</td>
<td>Directive 92/29/EEC on the minimum safety and health requirements for improved medical treatment on board vessels (Medical treatment on board vessels Directive)</td>
</tr>
<tr>
<td>E.13</td>
<td>Directive 93/103/EC concerning the minimum safety and health requirements for work on board fishing vessels (Fishing vessels Directive)</td>
</tr>
<tr>
<td>E.14</td>
<td>Directive 2002/44/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (Vibration Directive)</td>
</tr>
<tr>
<td>Appendix number</td>
<td>Directive</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>E.15</td>
<td>Directive 2003/10/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (Noise Directive)</td>
</tr>
<tr>
<td>E.16</td>
<td>Directive 2004/40/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) (EMF Directive)</td>
</tr>
<tr>
<td>E.17</td>
<td>Directive 2006/25/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (artificial optical radiation) (AOR Directive)</td>
</tr>
<tr>
<td>E.18</td>
<td>Directive 1999/92/EC on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres (ATEX Directive)</td>
</tr>
<tr>
<td>E.19</td>
<td>Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work (Carcinogens or mutagens Directive)</td>
</tr>
<tr>
<td>E.20</td>
<td>Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work (Chemical Agents Directive)</td>
</tr>
<tr>
<td>E.22</td>
<td>Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work (Biological Agents Directive)</td>
</tr>
<tr>
<td>E.23</td>
<td>Directive 90/269/EEC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers (Manual Handling Directive)</td>
</tr>
<tr>
<td>E.24</td>
<td>Directive 90/270/EEC on the minimum safety and health requirements for work with display screen equipment (DSE Directive)</td>
</tr>
</tbody>
</table>
Appendix F  EU OSH in an international perspective

The purpose of this appendix is to facilitate a comparison of the levels of protection of workers in the EU with that of selected third countries: Japan, USA, Canada and Australia.

When comparing developments in the EU occupational safety and health situation with that of Australia, Canada, Japan and the US, it must be acknowledged that the labour market structures in these four countries are almost similar to those in the EU. Figure F1 shows this based on labour market data provided by the OECD. Although it is not feasible to compare labour market developments at the level used in our detailed analysis, it indicates that the average EU-27 employment shares of around 4 %–24 %–72 % in 2013 for the primary, secondary, and tertiary sectors, respectively, resemble those of the other four countries. This is foremost the case regarding Japan, while the other three countries have slightly higher tertiary sector shares and slightly lower primary and secondary sector shares. Furthermore, the sector shares for all four countries and that of the EU-27 average have developed likewise between 2000 and 2013, i.e. with increasing tertiary sector shares mainly at the loss of secondary sector shares.

*Figure F1  Employment shares by economic sectors, 2000 and 2013*

![Graph showing employment shares by economic sectors for EU-27, Australia, Canada, Japan, and US in 2000 and 2013.]

Source: OECD stat.

Although it is not straightforward to compare the comprehensive EU OSH *acquis* with that of the OSH regulations in the other four countries, we have not come across significant differences that may challenge the notion of a level playing field. This conclusion is based on the following observations from looking into a number of different information sources.

Firstly, the OSH regulations were introduced during similar periods. The EU pursued, from the beginning of the 1970s, common actions to improve safety and
health at work. One of these actions was in 1974 (183), a Social Action Programme resolution (European Council, 1974), which called for improved working conditions, and which was a response to social unrest in the beginning of the 1970s and to increasing concerns regarding diverse social systems in the EU. In June 1978, the European Council (1978) passed a resolution on an Action Programme on safety and health at work, and almost at the same time passed the first Directive 78/610/EEC aimed at reducing risks associated with exposure to vinyl chloride. This was following by a few other specific Directives until the approach was revised by the introduction of the Framework Directive 89/391/EEC in 1989 as a result of the fact that the Single European Act in 1986 (European Commission, 1986) extended the EU's authority to legislate in the field of occupational safety and health.

As shown in Table F1, Australia, Japan and the US – while Canada a few years earlier – also responded in the 1970s to calls for improved working conditions and for a need for formalised regulatory frameworks. Hence, from the perspective of establishing or maintaining a level playing field, the similar timing of the regulations must be considered to have been beneficial regarding resemblances of safety and health requirements, and regarding all facing costs of complying with these requirements.

Table F1  Year of introduction of OSH regulations

<table>
<thead>
<tr>
<th>Year of introduction</th>
<th>Country</th>
<th>OSH regulation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>Japan</td>
<td>Industrial Health and Safety Law</td>
<td>JICA (2014)</td>
</tr>
</tbody>
</table>

Note: (1) The adoption of occupational safety and health regulations in Australia varied in between the independent jurisdictions.

Secondly, OSH regulations have undergone similar developments. The EU OSH acquis, as well as the OSH regulations in the four countries, have, from their starting point indicated in Table F1, broadened their scope regarding the coverage of economic activities, e.g. from covering the construction and mining industries to also covering the service sector. This has been done while seeking to develop more unified and integrated regulatory systems, which also has involved improvements regarding the coordination of the regulations among different jurisdictions, e.g. at the federal and state levels, in order to develop consistent standards. The OSH regulations in the analysed countries have also increasingly

(183) See e.g. Kineke (1991) for a concise presentation of the history of occupational safety and health in the EU.
required the involvement of the workers and their organisations in order to increase cooperation and to share responsibilities.

Furthermore, the four countries have, like the EU, put emphasis on being able to deal with new and emerging challenges. For example, an increasing need to focus on psychosocial risks has been acknowledged in Australia, where work-related mental disorders were included in the 2002-2012 national prevention strategy, and where mental disorders are considered the most costly occupational disease – both in average absence from work and average cost per claim (Safe Work Australia, 2006). Similarly, workplace violence and harassment were included in the 2009 amendment of the Occupational Health and Safety Act in Canada.

Japan has also experienced an increasing prevalence of stress-related diseases due to demanding work environments, particularly in the service sector (JICA, 2014). This development has, for example, led the regulatory agencies to introduce Karoshi (‘death from overwork’) as a worker’s compensation in 2001. Finally, in the US, psychological disorders, particularly stress and workplace violence, are increasingly considered occupational hazards that, in addition, have higher incidence among female workers (Bureau of Labor Statistics, 2013).

Thirdly, occupational safety and health requirements are to a large extent embedded in legislative frameworks that outline principles and subsidiary legislations that contain specific requirements. Hence, it can be argued that the four countries have similar structures to that of the EU – i.e. having a ‘Framework Directive’ that is accompanied by ‘individual Directives’. In Australia, for example, such consistency between general principles and specific needs has been pursued with the implementation of the Model Work Health and Safety Bill (‘the Model Act’), which unified the implementation of safety and health issues across the Commonwealth, and the states and territories. In Canada, an Intergovernmental Working Group (IWG) was formed to increase the harmonization of OSH standards across jurisdictions to ensure consistency, hereunder regarding general and specific needs.

Furthermore, the similar legislative frameworks do as displayed in Table F2 cover similar types of provisions.
Table F2  Comparison of core legislative OSH provisions for the EU, Australia, Canada, Japan and the US

<table>
<thead>
<tr>
<th></th>
<th>EU</th>
<th>Australia</th>
<th>Canada</th>
<th>Japan</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inspection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power to enter workplaces</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Power to obtain information</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Enforcement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closure orders or notices</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Administrative or financial penalties</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Criminal liability</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Workers’ rights and duties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right to participate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Access to information</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Right to refuse unsafe work</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Protective reassignment</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Protection from discrimination and reprisals</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Employers’ rights and duties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty to ensure safety and health</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Duty to provide training and personal protective equipment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Implementation of OSH management systems</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Sources: COWI based on WorkSafeBC (1997), ILO (2003), and ILO (2013b).

Both the EU and the four countries have provisions for requirements to inspections, and they have all national systems of inspections in place where OSH inspectors have the power to gather evidence and provide advice on safety and health issues.

Furthermore, they have all experienced cases of non-compliance with occupational safety and health provisions that have incurred administrative or financial penalties. Labour courts are involved for certain criminal liability case, e.g. when an individual kills somebody else while performing working duties covered by the safety and health regulations (US), for reckless contravention of a general duty (Australia), and at the courts’ discretion (Canada). Japan is the only of the four analysed countries where corporations are not commonly prosecuted for criminal liability as a consequence of violations of safety and health regulations (Keith and Walsh, 2008).

Workers’ rights and duties are also generally covered. Workers have the right to select their representatives for safety and health matters. Their representatives have in turn the right to request information and participate in the development of OSH management systems. Workers have also generally the right to remove themselves from dangerous situations and to be reassigned to non-hazardous work. In Canada, however, there is no specific duty in the OSH regulation to reassign workers, although the Canadian Human Rights Act comprises such provisions. Furthermore and maybe somewhat as a curiosity, the Japanese
workers' rights and duties do not explicitly contain provisions for the removal of workers from the workplace in case of imminent health risks (ILO, 2003).

An employer is generally prohibited from discriminating against a worker that exercises his rights under the OSH legislation, and the employer must ensure the safety and health of workers in the course of their activities. To fulfil this duty, employers must, for example, provide protective personal equipment and training suitable for the nature of the work carried. The countries diverge, however, regarding actual provisions for shaping OSH management systems. In the US, the regulations do not specify elements of OSH management systems, except for the construction industry. Furthermore, although Canada and Australia provide guidelines, e.g. for written risk assessment and risk procedures, in order to stimulate a systematic approach to safety and health management, we have found no information about the employers' obligation to implement such guidelines, nor about that they actually have been implemented.

In Japan, employers are according to the Industrial Health and Safety Law, article 78 (JICA, 2014) obliged to set up an occupational safety and health management system for the workplace. The official guidelines for such management systems were released by the Japanese Ministry of Labour, Health and Welfare in 1991. Shortly after, Japan Industrial Safety & Health Association (JISHA) started to promote the certification of businesses in OSH management systems.

Fourthly, there is a tendency to centrally-planned OSH regulations. This is clearly the case for the EU OSH, but also in the four other countries, although to a varying degree. While the OSH legislation is primarily contained in a two-tier system in the USA and Canada, Australia has a three-tier model in which the national and state levels, together with two internal territories, plan the reach of safety and health legislation. In Japan, the implementation of OSH initiatives is controlled by the central government.

Finally, similar levels of occupational injuries in between the EU-27, Australia, Canada, Japan and the US may indicate similar levels of occupational safety and health protection, and so from this perspective a level playing field. It is as indicated in Table F3, however, not that straightforward to fully compare incidence rates for occupational injuries by economic sectors. Furthermore, there are certainly differences in the way the different countries have counted the number of occupational injuries. In particular, the few available data from Japan seem to divert from those of the others.

With this in mind, Table F3 does point towards similarities in the incidence rates. The total incidence rates range from 9.1 to 14.8 non-fatal incidences per 1000 employed per year, and the picture is mostly that there are above-average incidence rates in the traditional sectors such as agriculture, forestry and fishing, and manufacturing, construction and transportation.

The availability and comparability are somewhat lower for the service sectors, although the incidence rates in general are relatively low for sectors such as financial and insurance activities, and information and communication, while they are relatively high for e.g. human health and social work, and administrative and
support service. However, many of the differences are expected to be due to statistical differences, hereunder in the definitions of the economic sectors. This said, the high incidence rates in the US for human health and social work and public administration must give rise to some concern, but not in the context of a level playing field, as they are domestic or non-trading sectors.

Table F3  Incidence rates of non-fatal occupational injuries by economic sector (number of injuries per 1000 employed per year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>14.8</td>
<td>12.2</td>
<td>9.1</td>
<td></td>
<td>11.2</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>14.9</td>
<td>21.2</td>
<td>10.4</td>
<td>(2)28.6/14.0</td>
<td>19.5</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>16.0</td>
<td>13.0</td>
<td>11.0</td>
<td>13.9</td>
<td>8.7</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>20.4</td>
<td>21.1</td>
<td>20.9</td>
<td>2.6</td>
<td>10.6</td>
</tr>
<tr>
<td>Electricity, gas etc.</td>
<td>4.9</td>
<td>6.2</td>
<td></td>
<td></td>
<td>7.9</td>
</tr>
<tr>
<td>Water supply, sewerage etc.</td>
<td>28.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>27.8</td>
<td>18.7</td>
<td>20.7</td>
<td>4.9</td>
<td>14.3</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>13.0</td>
<td>(1)14.2/8.1</td>
<td>14.2</td>
<td></td>
<td>(1)10.8/11.4</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>25.0</td>
<td>21.9</td>
<td>19.5</td>
<td>7.0</td>
<td>22.3</td>
</tr>
<tr>
<td>Accommodation and food service</td>
<td>16.1</td>
<td>10.2</td>
<td></td>
<td></td>
<td>9.9</td>
</tr>
<tr>
<td>Information and communication</td>
<td>3.1</td>
<td>6.2</td>
<td></td>
<td></td>
<td>6.3</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>2.6</td>
<td>2.9</td>
<td></td>
<td></td>
<td>3.8</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>7.2</td>
<td>8.5</td>
<td>1.7</td>
<td></td>
<td>10.3</td>
</tr>
<tr>
<td>Professional, scientific etc.</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>Administrative and support service</td>
<td>20.5</td>
<td></td>
<td></td>
<td></td>
<td>17.8</td>
</tr>
<tr>
<td>Public administration, defence etc.</td>
<td>10.4</td>
<td>9.6</td>
<td></td>
<td></td>
<td>28.6</td>
</tr>
<tr>
<td>Education</td>
<td>5.4</td>
<td>7.9</td>
<td>5.2</td>
<td></td>
<td>12.2</td>
</tr>
<tr>
<td>Human health and social work</td>
<td>13.8</td>
<td>13.8</td>
<td></td>
<td></td>
<td>36.7</td>
</tr>
<tr>
<td>Arts, entertainment and recreation</td>
<td>14.8</td>
<td>9.0</td>
<td></td>
<td></td>
<td>12.7</td>
</tr>
<tr>
<td>Other service activities</td>
<td>7.1</td>
<td>17.5</td>
<td>9.4</td>
<td></td>
<td>9.2</td>
</tr>
<tr>
<td>Activities of households</td>
<td>1.5</td>
<td></td>
<td>9.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraterritorial organisations etc.</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note:  
(1) Wholesale trade / retail trade  
(2) Forestry / fishery  
(3) The Australian data do also include fatal injuries.
## Appendix G  27 Country Summary Reports (CSRs) on implementation of the Directives in the Member States

<table>
<thead>
<tr>
<th>Number</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.1</td>
<td>Austria</td>
</tr>
<tr>
<td>G.2</td>
<td>Belgium</td>
</tr>
<tr>
<td>G.3</td>
<td>Bulgaria</td>
</tr>
<tr>
<td>G.4</td>
<td>Cyprus</td>
</tr>
<tr>
<td>G.5</td>
<td>Czech Republic</td>
</tr>
<tr>
<td>G.6</td>
<td>Germany</td>
</tr>
<tr>
<td>G.7</td>
<td>Denmark</td>
</tr>
<tr>
<td>G.8</td>
<td>Estonia</td>
</tr>
<tr>
<td>G.9</td>
<td>Greece</td>
</tr>
<tr>
<td>G.10</td>
<td>Spain</td>
</tr>
<tr>
<td>G.11</td>
<td>Finland</td>
</tr>
<tr>
<td>G.12</td>
<td>France</td>
</tr>
<tr>
<td>G.13</td>
<td>Hungary</td>
</tr>
<tr>
<td>G.14</td>
<td>Ireland</td>
</tr>
<tr>
<td>G.15</td>
<td>Italy</td>
</tr>
<tr>
<td>G.16</td>
<td>Lithuania</td>
</tr>
<tr>
<td>G.17</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>G.18</td>
<td>Latvia</td>
</tr>
<tr>
<td>G.19</td>
<td>Malta</td>
</tr>
<tr>
<td>G.20</td>
<td>Netherlands</td>
</tr>
<tr>
<td>G.21</td>
<td>Poland</td>
</tr>
<tr>
<td>G.22</td>
<td>Portugal</td>
</tr>
<tr>
<td>G.23</td>
<td>Romania</td>
</tr>
<tr>
<td>G.24</td>
<td>Sweden</td>
</tr>
<tr>
<td>G.25</td>
<td>Slovenia</td>
</tr>
<tr>
<td>G.26</td>
<td>Slovak Republic</td>
</tr>
<tr>
<td>G.27</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>
Appendix H  Interview guide for national stakeholders

The interview guide contains two sets of questions:

› **Mapping-related questions and other qualitative questions**: open questions aiming at obtaining qualitative data, with the purpose of verifying, filling the gaps and provide more practical/implementation oriented information on the elements gathered during the desk study.

› **Evaluation-related questions and quantitative questions on scoring**: questions asking for a rate according to a scale. The rating questions are followed up by a request to explain the rating, to obtain a qualitative understanding of the rating. A 5-point scale of rating is proposed to increase the comparability of the answers.

We therefore propose carrying the interviews in two steps:

› **Step 1**: interview with the stakeholder(s) aiming at gathering qualitative information, in particular on the questions of the first set mentioned above;

› **Step 2**: provide the interviewee with a questionnaire, reflecting the second set of questions provided above.
Methodology

Step 1 - Selecting the interviewees

On the basis of the list that you have already provided as part of the first work order, you should select national experts on the basis of the following considerations:

› The selection shall take into account the specificities of the labour market in your country, and the stakeholders of the most representative sectors should be interviewed. At the same time, it shall be ensured that the types of stakeholders interviewed will be sufficiently diverse (representatives of large companies, but also SMEs, and the public as well as private sectors. Representatives of insurance companies should be interviewed if this is relevant in your country).

› The interviews should include a balanced representation between the different types of stakeholders, i.e., representatives of employers and employees, social partners and national authorities, institutions and academia to avoid biased information.

› You should take into account the information gathered in the desk study and the information gaps identified therein and target the interviews to obtain this information. For instance, when factual information and statistics are lacking, you should interview national authorities and labour inspectorates on these issues. When information is missing on one particular Directive (i.e. on a specific sector or type of establishment), the representatives of that sector should be interviewed to complete the data.

› The selection should also take into account the number of interviews indicated in the Inception Report (20), while selecting stakeholders.

› The selection of interviewees should secure that all the Directives are covered by the interviewees selected.

Interviews will be divided as follows:

<table>
<thead>
<tr>
<th>Type of stakeholder</th>
<th>Number of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>National authorities in charge of implementation (Directive specific if available)</td>
<td>1-4</td>
</tr>
<tr>
<td>Labour inspectorates (one for central service and up to 3 individual inspectors)</td>
<td>2-4</td>
</tr>
<tr>
<td>Representatives of workers (including sectoral)</td>
<td>5-7</td>
</tr>
<tr>
<td>Representatives of employers (including sectoral)</td>
<td>5-7</td>
</tr>
<tr>
<td>Research institutions, academia, OSH professional bodies, insurance companies/social security providers</td>
<td>1-3</td>
</tr>
</tbody>
</table>
These types of stakeholders will be a priority. Note that other individual stakeholders (employers/employees/independent experts) may also be selected for interviews. These will be selected by the national experts on the basis of their knowledge of particularly active persons in the field of OHS, as well as persons referred to by the stakeholders listed above as potential interviewees. Independent subject (risk) specific experts could also be particularly valuable, as they may provide information from a more ‘objective’ perspective.

You should aim to complete at least 20 interviews, so make a pre-selection of 30 potential interviewees, keeping in mind the availability of the experts. Then, send your list of ‘priority stakeholders’ for interviews to Milieu for approval. Please note that, in some countries, it may be more difficult to select 20 stakeholders that would bring valuable information to the evaluation. In this case, please contact the Milieu team.

Contact the stakeholder by phone or e-mail. The introductory letter from the Commission, the list of set questions and the list of key requirements should be attached in the e-mail to the interviewee.

The interview can take place by phone, face-to-face or even as a focus group with several interviewees at the same time. Interviews should, as much as possible, be face-to-face, in particular with the competent authorities. Use your judgment concerning the best approach under the national circumstances and the availability of the interviewees.

Reassure the stakeholder that his/her name will be kept confidential. Allow the stakeholder to propose a date for the interview by phone call or face-to-face meeting and agree a mutually acceptable date within the timeframe of the project (all interviews should have been conducted by 15 June at the latest).

In case of no response, e-mail the interviewee again. Then call the interviewee and encourage him/her to participate in the study. If there is still no response, try another stakeholder of the same type. In this case also, inform the Milieu team.

**Please note that this document is not intended to be used as a questionnaire but, as the title suggests, as a guide.** This implies that the guide needs to be tailored according to the national specificities and to the expertise of the person(s) interviewed.

First of all, we do not expect the guide/questions to be translated. You should use your understanding of the question to ask about the issue addressed by the question in your own language. If you have any uncertainty over the meaning of the question in English (i.e. they can be interpreted it in more than one way), you should seek clarification from Milieu.

Second, it is of utmost importance that you adapt the questions to the national circumstances. The guide provides very generic questions, applicable to all Member States. It is very likely that, except in specific cases (e.g. national
Step 4- Conducting interviews

The objective of the interviews for the mapping is two-fold. On one hand, the interviews are aimed at addressing any gap in information identified during the desk-study. For this part of the interviews, you should develop your own questions, which will cover missing data from the national report. This is also your opportunity for checking and validating certain information.

On the other hand, the interviews will serve to ask specific questions, which are provided in this guide.

In conducting interviews, first briefly explain the scope and objectives of the study. Then ask the relevant interview questions provided in the template, as adapted by you.

For each sub-section, you should ask the interviewee to be specific and to give examples, if possible.

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\[^{184}\) A briefing note will be prepared by Milieu and circulated among the experts.

authorities in charge of transposition), the interviewees will have an understanding of the national systems, and the national legislation, rather than a EU perspective, based on the EU Directives structure and requirements. You should therefore make sure that the questions are asked in relation to the national requirements and circumstances rather than their equivalent in the Directives.

Third, you should select from the questions provided below, the questions that are most likely to be answered by the interviewee, according to his/her area of expertise, and the Directive(s) (meaning the corresponding national legislation) they work with. We have intentionally chosen not to group questions according to the type of stakeholders interviewed, as a) you may want to consider focus groups gathering different types of stakeholders, and b) the ‘pick and choose’ approach ensures that the interviewee will be asked any question that would be relevant on the basis of their profile. However, in order to guide you, an indication of the type of stakeholders most likely to provide an answer is indicated next to each interview question. It is possible that you have been able to answer a particular question during your desk study basing yourself on different reliable sources of information (triangulation). In this case it would not be necessary to ask this question at all.

Fourth, the structure of the discussion is left to your discretion,— and again may differ depending on the status of the person being interviewed and the Directives (i.e. corresponding national legislation) on the agenda for the interview. The questions are designed from a Directive-specific perspective. However, some interviewees might be expected to have a perspective of the wider health and safety \textit{acquis} whilst others will only be expected to have knowledge of ‘their’ directive/legislation. Thus, in talking to a sector specialist, the interview might focus initially on the sector-specific legislation before moving to discuss points of concern regarding wider health and safety requirements. In contrast, interviews with government interviewees with a wider perspective might start with that broader approach and then focus on matters concerning individual directives.
In order to validate the findings from the interview we encourage you to briefly summarize, at the end of the interview, the key points that were discussed, in order to ensure that you have a common understanding of the answers that were given. Depending on national practices, it may be necessary in some Member States to report the results of the interviews to the interviewee. In this case, we invite you to propose to the interviewee that you will write an email summarising the main elements of the discussions as a follow up of the interview.

The questionnaire may be communicated to the interviewees in advance of the interview. It should in any case be mentioned prior to the interview. It should be introduced at the end of the interview. In particular, the rating should be explained. Please invite the interviewee to substantiate their scores, and to provide additional elements as needed. In order to make sure that the interviewees have a common understanding of the concepts referred to, a glossary will be provided at the end of the questionnaire. This should also be mentioned to the stakeholders.

You will gather two types of information:

› The information relevant for the mapping should be directly incorporated into the Country Summary Report. While you should clearly state the name and organisation of the interviewees in your interview notes, these are working documents only and will not be annexed to the national report. You are nevertheless asked to keep these written notes, which should be made available to the management team upon request. However, you will need to insert the information gathered via the interviews in the national report completing gaps in your desk study.

› In relation to data protection issues, you should clearly state the name and organisation of the interviewees in your interview notes. However, for data protection reasons, the names of the interviewees will not be disclosed in the report. When you refer to information acquired during the interviews with stakeholders in your report, please use the following expression in a footnote: ‘Conclusion based on consultation with public authorities, workers/employers organisations, etc., indicating the relevant stakeholder group. When possible, mention the particular sector. Please also mention when there are contradictory views depending on the stakeholder groups’.

› The information relevant for the evaluation is to be reported separately, in a supplement to the Country Summary Report. This supplement consists of 1) qualitative questions in relation to the evaluation; 2) quantitative information gathered with the questionnaires.

Note! For this supplement, we do not ask you to analyse and summarise the information gathered or to provide average scores, but rather to compile the different answers by category of stakeholders:

› National authorities and inspectorates
› Representatives of workers
› Representatives of employers
› OHS experts, academia
› OHS institutes, social security providers
› Others.

If stakeholders within a stakeholder group has contradicting views this should be clearly noted.
## INTERVIEW QUESTIONS

Name of interviewee: _______________________________

Organisation: _______________________________

Date of interview: _______________________________

Directives covered: _______________________________

### 1 Mapping national implementation

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting</td>
<td>CSR (Introduction)</td>
</tr>
</tbody>
</table>

**If needed add in relation to the identification of transposing legislation or previous national legislation (Table 1.1 of the CSR)**

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inspectorates</td>
</tr>
<tr>
<td>Reporting</td>
<td>CSR (Section 1.2.2, Section 5.1)</td>
</tr>
</tbody>
</table>

**Before asking this question, briefly explain the mechanisms for coordination between the authorities competent for the implementation and control of the OSH directives you have identified in your desk study.**

› Are you aware of other mechanisms?

› Would you consider that these mechanisms are efficient? What works well? What could be improved?

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation, Research institutes, academia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting</td>
<td>CSR (Section 1.3.1)</td>
</tr>
</tbody>
</table>

**The following questions may be restricted to specific directive(s) depending on the stakeholder interviewed. The interviewer will introduce the list of key requirements**
to the interviewee (attached to introductory email and presented during the interview itself).

› Are you aware of any major inconsistencies/contradictions between the national legislation (or how it is interpreted) and the Directive’s provisions? If yes, please specify.

› Are you aware of any instances where the national legislation has set requirements which go beyond the Directives’ requirements (e.g. more stringent limit values)? If yes, please specify.

The answers to these questions should be validated by checking other sources, i.e. your initial analysis, NIRs, national legislation.

<table>
<thead>
<tr>
<th>Gaps in content or time</th>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation, Research institutes, academia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting</td>
<td>CSR (Section 2)</td>
<td></td>
</tr>
</tbody>
</table>

Ask any clarification as to Tables 2.1 or 2.2 as needed.

Compliance

› Has any specific approach to compliance been adopted by establishments? What are its key characteristics?

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>Labour inspectorates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Representatives of workers</td>
</tr>
<tr>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td>OSH professional bodies/social security providers</td>
</tr>
</tbody>
</table>

| Reporting | CSR (Section 3.2) |

› Are there any significant differences in the approach to compliance between different sectors and sizes of establishments (micro/SMEs/large establishments)? What are these differences?

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>Labour inspectorates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Representatives of workers</td>
</tr>
<tr>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td>OSH professional bodies/social security providers</td>
</tr>
</tbody>
</table>

| Reporting | CSR (Section 3.2) |

› Are you aware of particularly successful approaches/strategies taken to ensure compliance? Why do you consider this successful? Have any particular measures been introduced to facilitate compliance by SMEs/Microenterprises?
### Indicative target of the question

<table>
<thead>
<tr>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR (Section 3.2)</td>
</tr>
</tbody>
</table>

### Indicative target of the question

<table>
<thead>
<tr>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR (Section 4)</td>
</tr>
</tbody>
</table>

This part of the questionnaire aims to gather additional information about any accompanying actions you may have identified, such as guidance documents, awareness campaigns and IT support tools. Communicate to the interviewee the list of guidance and actions taken by authorities and social partners’ organisations that you have identified and ask the following questions, including, in each case, asking if they have evidence e.g. survey results:

- Do you consider that establishments in your country make use of the actions listed above?
  - If yes, to what extent (high, medium, low)?
  - If no, what are the main reasons?
  - Are some of these documents particularly useful (i.e. they have contributed to creating awareness among establishments in your country) or not useful? Which ones? Why (not)?
  - Would you recommend some of these actions as a good practice to be followed in other Member States? If yes, why?
  - Do you know of any particular accompanying measures for SMEs?
  - Are you aware of other actions/tools at the disposal of companies that have been particularly useful in helping them to implement OHS requirements? Please explain why.
  - Are you aware of any tools put at the disposal of companies or practices to reduce the costs/burdens related to the implementation of the legislation transposing the Directives?
  - Are you aware of monitoring methods/evaluation studies at the disposal of companies that have been particularly useful in helping them to implement OHS requirements? Please explain why.
› Are you aware of cost-benefit analyses carried out in your country regarding the implementation of OHS requirements? Can you provide references?

› Do you consider that additional actions/documents should be developed for any of the following:

- Specific sectors?
- Specific risks (including emerging risks)?
- Specific type of obligation (e.g., risk assessment, health surveillance, training of workers)?
- Specific groups of workers? Specific sizes of company?

<table>
<thead>
<tr>
<th>Enforcement</th>
<th>Indicative target of the question</th>
<th>Labour inspectorates/ individual inspectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting</td>
<td>CSR (Section 5)</td>
<td></td>
</tr>
</tbody>
</table>

Any additional question to complete the inspections statistical data, data on enforcement strategy, number of infringements and court cases.

<table>
<thead>
<tr>
<th>Vulnerable groups</th>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Labour inspectorates/ individual inspectors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Representatives of workers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research institutes, academia, OSH professional bodies/social security providers</td>
</tr>
<tr>
<td>Reporting</td>
<td>CSR (Section 6 – text to be added after Table 6-1)</td>
<td></td>
</tr>
</tbody>
</table>

Any additional questions to complete the desk study.

› How are vulnerable workers covered in the implementation of the OSH requirements? Would you consider that a diversity approach should be considered?

<table>
<thead>
<tr>
<th>SMEs</th>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Labour inspectorates/ individual inspectors</td>
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<tr>
<td></td>
<td></td>
<td>Representatives of workers</td>
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<tr>
<td></td>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research institutes, academia, OSH professional bodies/social security providers</td>
</tr>
<tr>
<td>Reporting</td>
<td>CSR (Section 7 – text to be added after Table 7-2)</td>
<td></td>
</tr>
</tbody>
</table>
Any additional questions to complete.

› Are you aware of any support schemes, funding programmes, targeted campaigns, or other tools and instruments, particularly targeted at SMEs and MMS that have been triggered by the legislation and that you would consider to be examples of good practice and successful policies? Are you aware of any such actions that have clearly not worked / not been successful?

› Are you aware of any studies carried out analysing OSH and SMEs? Can you provide references?

2 Relevance

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
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</thead>
<tbody>
<tr>
<td>National authorities in charge of implementation</td>
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<tr>
<td>Labour inspectorates/ individual inspectors</td>
</tr>
<tr>
<td>Representatives of workers</td>
</tr>
<tr>
<td>Representatives of employers</td>
</tr>
<tr>
<td>Research institutes, academia, OSH professional bodies/social security providers</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complement to the CSR</td>
</tr>
</tbody>
</table>

› Are there any requirements of the Directive, which you consider obsolete or less relevant because they do not reflect current working methods or available techniques in your MS? If so, which are these?

› Do you think that there are any new or emerging risks which have arisen in your MS as a consequence of new working methods/technologies which should be (but are not) covered by this Directive? If so, please give details.

› Do you foresee any major changes in the period until 2020, which will impact on the relevance of this Directive in your MS (changes in technology, composition of work force, changes in the light of ‘scientific progress’, etc.)?

› In that period, do you foresee that the relevance of the Directive in your MS will:
  › Continue at the same level as today
  › Increase
  › Decrease

› Do you think that there are any new or emerging risks in your MS which are not currently covered by any Directive (other than the Framework Directive)? If so, please give details.

› Do you think these risks would best be addressed through a new Directive or would another form of intervention (guidance, agreements, etc.) be more appropriate? (please specify)
3 Effectiveness

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labour inspectorates/ individual inspectors</td>
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<tr>
<td></td>
<td>Representatives of workers</td>
</tr>
<tr>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td>Research institutes, academia, OSH professional bodies/social security providers</td>
</tr>
</tbody>
</table>

| Reporting | Supplement to the CSR |

Effects

› How has the health and safety of workers been affected by the national legislation transposing the Directive(s) e.g. absence from work (sickness absence, disability pensioning), accidents and quality of life?

› Which key requirements have contributed the most? (show the interviewee list of KRs for the Directive(s) in question)

*Interviewees are presented with an overview of the quantifiable outputs and effects of the Directive(s) in terms of improving the occupational health and safety of workers.*

› Do you agree with the presented effects and quantifiable outputs? Please indicate the three most important effects (1-3 in order of importance)

› Has the legislation been more successful in some sectors/types/size of companies compared to others? Do any significant differences exist between the micro/SMEs/large establishments? Please describe these differences.

› Has the effectiveness of the national legislation transposing the Directive(s) been influenced by the application of derogations, transitional periods, sanctions?

› Which effects have this legislation had on employers? E.g. on

  › Productivity
  › Image
  › Competitiveness
  › Costs
  › Other

› Do you consider that having common minimum requirements regarding OSH through the Directives contributes to creating a level playing field for companies across the EU? Why/Why not?

› Prior to the implementation of the Directives, was national legislation or national measures in place covering essentially the same subject matter?

› Was the existing national legislation/measures stricter, comparable or less strict than the OSH requirements in the Directives?
Costs and benefits

› Which costs and benefits do you see deriving from the OSH legislation?

› Can you say which part of costs and benefits of the national OSH legislation are attributable to OSH Directives or other EU legislation (e.g. standardisation, public health or environmental)?

› Are employers experiencing increased compliance costs (costs which would not have occurred without the Directive)(185) from the implementation of national legislation based on the Directive(s)? If yes, which requirements drive these increased costs and to what extent?

› To what extent are employers experiencing increased costs caused by legal obligations (administrative burdens) from the implementation of national legislation based on the Directive(s) (costs in addition to the business as usual costs)?

› Would these administrative activities continue if legal obligations were removed?

› Are there any particularly burdensome requirements? Please specify. Do these burdens derive from pre-existing national legislation or requirements following the EU directives?

› Do any significant differences exist between micro, SMEs and large establishments? What, if any, are the differences?

4 Coherence

<table>
<thead>
<tr>
<th>Indicative target of the question</th>
<th>National authorities in charge of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labour inspectorates/ individual inspectors</td>
</tr>
<tr>
<td></td>
<td>Representatives of workers</td>
</tr>
<tr>
<td></td>
<td>Representatives of employers</td>
</tr>
<tr>
<td></td>
<td>Research institutes, academia, OSH professional bodies/social security providers</td>
</tr>
</tbody>
</table>

**Contradictory requirements**

› Are you aware of any contradictions between the requirements of national legislation transposing different individual OSH Directives (e.g. definitions of same terms that are conflicting or where the aims of the Directives are contradictory)?

› Overlaps

(185) Compliance costs are all the costs of complying with regulation, with the exception of direct financial costs and long term structural consequences (see annexed glossary)
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

Are you aware of any overlaps in the national OSH legislation resulting from the transposition of OSH Directives? If so, do these overlaps lead to any excessive administrative burden?

If any overlaps in OSH Directives lead to an administrative burden please specify and justify the degree of estimated administrative burden (e.g. impact on cost such as human and financial resources, time…)

› Low (almost no additional)
› Medium (limited)
› High (substantial)

Synergies

Are you aware of any synergies between the different OSH legal acts transposing the OSH Directives (please describe)?

Relevant studies and/or other resources

Are you aware of any study and/or other source of information that reflects/covers the abovementioned or other inconsistencies, overlaps, synergies between the requirements of national legislation transposing different individual OSH Directives? Please provide references.

The box below lists some other EU legislation which may ‘interface’ with OSH Directives. The term ‘interface’ is used here to denote areas where the requirements from one legislative act form the basis for implementing a requirement in another legislative act.

Preliminary and indicative list of other EU legislation identified:
REACH Regulation\(^{186}\)
CLP Regulation\(^{187}\)
Cosmetics Regulation\(^{188}\)
Machinery Directive\(^{189}\)
Seveso Directive\(^{190}\)

Are you aware of any interfaces between OSH Directives and other EU Legislation?

If yes:

› Please identify those leading to enhanced OSH protection?
› Is there room for improvement? Please justify.

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\(^{186}\) Regulation (EC) No 1272/2008 of 16 December 2008 on classification, labelling and packaging of substances and mixtures

\(^{187}\) Regulation (EC) No 1272/2008 of 16 December 2008 on classification, labelling and packaging of substances and mixtures

\(^{188}\) Regulation (EC) No 1223/2009 of 30 November 2009 on cosmetic products

\(^{189}\) Directive 2006/42/EC of 17 May 2006 on machinery

\(^{190}\) Directive 2012/18/EU of 4 July 2012 on the control of major-accident hazards involving dangerous substances
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

› Please identify those leading to inconsistencies impeding enhanced OSH protection? Please justify.

› Is there a need for new interfaces between some OSH Directives and other EU legislation? If yes, please justify.

› Are you aware of any study and/or other resource that reflects/covers the above-mentioned or other interfaces, inconsistencies between OSH Directives and other EU legislation? Please provide references.
Questionnaire

Name of respondent:__________________________________________________________

Organisation:_______________________________________________________________

Directives covered:__________________________________________________________

The questionnaire is designed in a way to allow you some flexibility in replying (e.g. assign multiple scores to differentiate between sub-groups). You may add any additional information that you think is relevant. The questionnaire may ask questions you are unable to answer. In that case, please leave this and go to the next question.

5 Relevance

To what extent do you consider the national legislation transposing the Directive you are commenting on to be relevant in helping to safeguard the health and safety of workers in your MS (rate on a scale of 1-5)?

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Of little relevance to the hazards/risks which should be addressed by the Directive</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Of some relevance but not of any great significance</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Reasonably appropriate, although there are some significant gaps</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Highly appropriate in addressing the hazards/risks targeted by this Directive but some minor omissions or gaps</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>Completely appropriate in addressing the hazards/risks targeted by this Directive</td>
</tr>
</tbody>
</table>

Answer:

<table>
<thead>
<tr>
<th>Answer</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

Circle response. If more than one (e.g. for SMEs) please label to indicate which responses apply to which group.

Please note if any of the following affect the relevance of this Directive.
EVALUATION OF THE PRACTICAL IMPLEMENTATION OF THE EU OCCUPATIONAL SAFETY AND HEALTH (OSH) DIRECTIVES IN EU MEMBER STATES

<table>
<thead>
<tr>
<th>Explanation</th>
<th>Please indicate extent of any effect</th>
<th>Justification (incl. examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our MS no longer has the industries covered by this Directive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hazards or risks covered by the Directive are no longer present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hazards or risks are better addressed through other channels (e.g. tripartite agreements, guidance, etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To what extent do you consider that the contents of the national legislation transposing the Directive you are commenting on reflect current working methods and available technologies and the risks associated with these in your MS (rate on a scale of 1-5)?

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Hardly relevant at all</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Of some little relevance</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Reasonably relevant – but some large gaps</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Very relevant but some small gaps</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>Highly appropriate coverage</td>
</tr>
</tbody>
</table>

Answer:

<table>
<thead>
<tr>
<th>Score</th>
<th>Justification (incl. examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6 Effectiveness

To what extent has the national legislation transposing the Directive(s) you are commenting on affected establishments’ behaviour for securing the safety and health of its workers (rate on a scale of 1-5)?
### Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States

#### Score | Explanation | Criteria
--- | --- | ---
1 | Very low | Hardly any effect at all
2 | Low | Of some little effect
3 | Medium | Reasonably effective – but some large gaps
4 | High | Very effective but some small gaps
5 | Very high | Highly effective

**Answer:**

<table>
<thead>
<tr>
<th>Size of establishment</th>
<th>Score</th>
<th>Justification (incl. examples – any sectors/directives in particular)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In micro establishments? (less than 10 people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Small establishments? (10-49 people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Medium size establishments? 50-250 people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In larger establishments? More than 250 people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific sectors – please specify which</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific risks – please specify which</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you consider the following enforcement measures and sanctions to be effective? Please specify if different for the directives you are commenting on?

#### Score | Explanation | Criteria
--- | --- | ---
1 | Very low | Hardly any effect at all
2 | Low | Of some little effect
3 | Medium | Reasonably effective – but some large gaps
4 | High | Very effective but some small gaps
5 | Very high | Highly effective
### Types of enforcement measures and sanctions

<table>
<thead>
<tr>
<th>Enforcement measures</th>
<th>Rate</th>
<th>Explanation (incl. examples if possible, and please specify if differences between the directives you are commenting on)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanctions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendations for corrective actions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obligation for corrective actions within a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prohibitions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal actions towards the company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other? (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To what extent do you consider that the implementation of the legislation transposing the Directive(s) you are commenting on has contributed to creating broader effects in society going beyond occupational health and safety (rate on a scale of 1-5, and explain how)?

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>The legislation has had no or hardly any effect on the given aspect</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>The legislation has had limited effect on the given aspect</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>The legislation has had some effect on the given aspect</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>The legislation has been relatively effective on the given aspect</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>The legislation has been very effective on the given aspect</td>
</tr>
</tbody>
</table>
### Types of broader impact

| Agenda setting and influencing national priorities |  |
| Learning (increased knowledge of) |  |
| Motivation of workers |  |
| Innovation |  |
| Productivity |  |
| Quality of products/services |  |
| Employment (access of different groups of workers to the labour) |  |
| Competitiveness/economic growth |  |
| Environmental effects |  |
| Impact on government expenditure (reduction in social security spending, reduction in healthcare costs etc.) |  |
| Other? |  |

Has the legislation transposing the Directive you are commenting on fulfilled its objectives and to what extent (rate on a scale 1-5)?

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Very low degree of fulfilment, very few initiatives taken</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Of some or very little degree of initiatives taken to fulfil the objective of the directive</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Reasonably fulfilment of objective but some large gaps</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Very large degree of fulfilment of the objective but some small gaps</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>Highly degree of fulfilment, the directive is completely effective</td>
</tr>
</tbody>
</table>

### Directive Score

<table>
<thead>
<tr>
<th>Directive</th>
<th>Score</th>
<th>Explanation (incl. examples if possible, and please specify if differences between the directives you are commenting)</th>
</tr>
</thead>
</table>
To which extent has common minimum OSH standards across the EU lead to a more level playing field (rate on a scale 1-5)?

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Very low degree – no or very little move towards a level playing field</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Of some or very little degree of move towards a level playing field</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Reasonable contribution to creating a level playing field, but still some large gaps at country and policy level</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Significant contribution to creating a level playing field but some small gaps at country and policy level</td>
</tr>
<tr>
<td>5</td>
<td>Very high</td>
<td>Large contribution to creating a level playing field,</td>
</tr>
</tbody>
</table>

Do you know of any studies on the costs and benefits of OSH legislation or specific Directives/types of measures in your country? If yes, please list them.

Thank you for your participation!
Annex – Glossary (to be communicated with questionnaire)

**Administrative burden:** Information that would not be collected without legal requirement\(^{(191)}\). This does not include cost of continuing business as usual.

**Administrative costs:** the costs incurred by enterprises, the voluntary sector, public authorities and citizens in meeting legal obligations to provide information on their activities (or production), either to public authorities or to private parties. Administrative cost reduction measures are limited to streamlining information requirements and do not affect the basic design of the underlying legislation. \(^{(192)}\)

**Coherence:** Referring to evaluation literature, assessing coherence is essentially about considering the extent to which the intervention logic is non-contradictory and that the intervention does not contradict other interventions with similar objectives. In the case of this evaluation, the assessment of coherence considers the internal logic between the Directives as well as the external coherence between the Directives and other measures and policies at the EU level.

**Compliance costs**\(^{(193)}\): compliance costs which stem from the generic requirements of the legislation, such as costs induced by the development of new products, or processes that meet new social and environmental standards.

**Effectiveness:** if the aims set have been achieved i.e. if the introduction of the Directives have led to the desired changes in enterprise behaviour and occupational safety and health of workers.

**Inconsistencies:** There are inconsistencies between OSH Directives, first where a requirement under one Directive is contradictory to another requirement under another Directive (e.g. definitions of same terms that are conflicting) or where the aims of the Directives are contradictory. We also define as inconsistencies the cases where the CPMs identified under the Directives are not drafted in a consistent manner and do not contain the same level of details where it is not justified. When assessing the coherence of OSH legislation with non OSH legislation, the term ‘inconsistency’ covers cases where provisions from non-OSH legislation have contradictory objectives or requirements compared to the OSH legislation.

**Interfaces:** The term 'interfaces' denotes areas where the requirements from one piece of legislation form the basis for implementation of a requirement in another piece of legislation (e.g. REACH safety data sheets forming the basis for risk assessments under OSH legislation).

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\(^{(191)}\) COM(2006) 691 final p. 4
\(^{(192)}\) COM(2006) 691 final p. 2 and 3
\(^{(193)}\) COM(2006) 691 final p. 3
Gap: The term 'gap' refers to the situation where there is an incomplete interface between piece of legislation thus preventing or limiting the potential synergy effects from being exploited.

Overlaps: we define legal overlaps as a neutral term that designates cases where different Directives set similar requirements or use similar common processes and mechanisms. For example, there are worker information requirements in almost all OSH Directives except in the explosive atmosphere Directive and in the Medical Treatment Directive.

Regulatory burden: all costs that result from mandatory obligations placed on businesses by public authorities on the basis of a law, decree or similar act\(^{(194)}\)

Relevance: the extent to which the provisions of the Directive are applicable to the hazards/risks or industry sectors they are intended to address Synergies :We define synergies as positive effects from overlaps between OSH Directives in the form of enhancement of OSH protection and/or cost effectiveness for employers, for example requirements under one act helping employers to implement requirements under another act. When assessing the coherence of OSH legislation with non OSH legislation, the term ‘synergy’ is used where interfaces or overlaps between OSH legislation and other EU legislation lead to enhanced OSH protection (e.g., where the information generated under one non-OSH legislation will help employers to implement the obligations under a EU OSH legislation.)

SME: The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises, which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.\(^{(195)}\)

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<td>≤ € 10 m</td>
</tr>
<tr>
<td>Micro</td>
<td>&lt; 10</td>
<td>≤ € 2 m</td>
<td></td>
<td>≤ € 2 m</td>
</tr>
</tbody>
</table>


This interview guide aims at building an understanding of your views on OSH Directives relevant to your organization. In the interview, we will focus on examining the Directives against the following criteria:

› **Relevance**: if the aims of the Directives are still pertinent and up to date in addressing needs and issues related to the health and safety of workers

› **Effectiveness**: if the aims set have been achieved i.e. if the introduction of the Directives have led to the desired changes in enterprise behavior and occupational safety and health of workers

› **Coherence**: investigating inconsistencies, overlaps, synergies across and between the Directives and the interrelation of the Directives with other measures and/or policies at the EU level

A more extensive definition of these notions and other key terms used in this guide is included in the annex below the interview questions.

In some questions, you will be asked to provide a scoring. The following scoring system will be used in these instances:
### Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States

#### Score

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – to a very low extent</td>
<td>Used to describe situations where the Directives have played a very small/no role, and/or had a very low (or negative) influence.</td>
</tr>
<tr>
<td>2 – to a low extent</td>
<td>Used to describe situations where the Directives have played a quite small role/have had a positive influence of no great influence.</td>
</tr>
<tr>
<td>3 – to a medium extent</td>
<td>Used to describe situations where the Directives have played some role/have had a noticeable positive influence, but where significant shortcomings are still observed.</td>
</tr>
<tr>
<td>4 – to a high extent</td>
<td>Used to describe situations where the Directives have played a significant role/have had a quite high positive influence, but where minor shortcomings can be observed.</td>
</tr>
<tr>
<td>5 – to a very high extent</td>
<td>Used to describe situations where the Directives have played a very big role/have had a very high positive influence.</td>
</tr>
</tbody>
</table>
Name of interviewee: ________________________________

Organisation: ________________________________

Date of interview: ________________________________

Directives covered: ________________________________

1 Introduction

1.1 What are the most significant challenges for your members in relation to compliance with the OSH Directives in general?

1.2 What are the most significant risks that the Directives are supposed to cover in your organization/in your members’ organization (by directive)?

2 Relevance

The interviewer will introduce an overview of key requirements and an overview of risks/hazards to the interviewee.

2.1 How relevant are the Directives for improving/safeguarding the health and safety of workers in the EU (rate on a scale of 1-5)? Why?

2.2 Which key requirements in the Directives are most relevant? Why?

2.3 Are there any key requirements in the Directives that are no longer relevant/less relevant?

2.4 Do you think that there are any new or emerging risks which should be (but are not) covered by these Directives? If so, please give details.

2.5 In the period until 2020, will the relevance of the Directives increase, decrease or stay the same? Why?

2.6 Do you think these risks would best be addressed though a new Directive or would another form of intervention (guidance, agreements, etc.) be more appropriate? (Please specify)

3 Effectiveness

The interviewer will introduce an overview of effects, measurable outputs and objectives to the interviewee.

3.1 To what extent has the Directives influenced the health and safety of workers (rate on a scale of 1-5)? How?

3.1.1 Which key requirements have contributed the most?

3.1.2 Do any significant differences exist between the micro/SMEs/large establishments? What differences?
3.1.3 Do you agree with the presented effects and quantifiable outputs? Please indicate the three most important effects (1-3 in order of importance)

3.2 Has the effectiveness of the Directive been influenced by the applied?

- Derogations?
- Transitional periods?
- Sanctions and other related enforcement activities?

(Rate on a scale of 1-5 and explain the rationale behind the score)

3.3 Have the Directives fulfilled their objectives and to what extent (rate on a scale 1-5)?

3.4 Do you consider that having common minimum requirements regarding OSH through the Directives contributes to creating a level playing field for companies across the EU? Why/Why not?

3.5 Have the scopes of the Directives (e.g. the exclusion of domestic workers, etc.) affected the effectiveness of the Directive? How?

3.6 To which extent do you consider that the implementation of the Directive has contributed to creating broader/unintended effects in society? (rate on a scale of 1-5, and explain how)

Agenda setting and influencing national priorities
Learning (increased knowledge of OSH)
Motivation of workers
Innovation
Productivity
Quality of products/services
Employment (access of different groups of workers to the labor market)
Competitiveness/economic growth
Environmental effects
Other?

3.7 To what extent do your members comply with the key requirements outlined in the Directives? (Rate on a scale of 1-5)

3.8 Are there differences in compliance levels between public/private sector, micro/SMEs/large enterprises and different sectors of economic activity? What are these differences and are you aware of any reasons for these?

3.9 To what extent do you consider that effective enforcement plays a role in relation to achieving a high degree of compliance with key requirements (rate on a scale of 1-5)?

3.10 Which factor contributes the most to effective enforcement of the key requirements (level of sanctions, number of visits, etc.)?
Costs and benefits

3.11 Which costs and benefits do you see deriving from the OSH legislation?

3.12 Can you say which part of costs and benefits of the national OSH legislation are attributable to OSH Directives or other EU legislation (e.g. standardisation, public health or environmental)?

3.13 Are employers experiencing increased compliance costs (costs which would not have occurred without the Directive) from the implementation the Directive(s)? If yes, which requirements drive these increased costs and to what extent?

3.14 To what extent are employers experiencing increased costs caused by legal obligations (administrative burdens) from the Directive(s) (costs in addition to the business-as-usual costs)?

3.15 Would these administrative activities continue if legal obligations were removed?

3.16 Are there any particularly burdensome requirements? Please specify. Do these burdens derive from pre-existing national legislation or requirements following the EU directives?

3.17 Do any significant differences exist between micro, SMEs and large establishments? What, if any, are the differences?

4 Coherence

Contradictory requirements

4.1 Are you aware of any contradictory requirements between the Directives (e.g. definitions of same terms that are conflicting or where the aims of the Directives are contradictory)?

Overlaps

4.2 Are you aware of any overlaps between the Directives?

4.2.1 If yes, do these overlaps lead to unnecessary administrative burdens? If yes, please specify and justify the degree of estimated administrative burden (e.g. impact on cost such as human and financial resources, time…) (low, medium, high)

4.2.2 Do these overlaps lead to any synergies between the Directives? If yes, please justify

Synergies

4.3 Are you aware of any other synergies between the Directives? Please describe

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(196) Compliance costs are all the costs of complying with regulation, with the exception of direct financial costs and long term structural consequences (see annexed glossary)
4.4 Are you aware of any study and/or other resource that reflects/covers the abovementioned or other inconsistencies, overlaps, synergies between the requirements of national legislation transposing different individual OSH Directives? Please provide references.

4.5 Are you aware of any EU policies that support or complement the Directive objectives (please justify)?

4.6 Are you aware of any EU policies that contradict the Directive objectives or hinder their achievement (please justify)?

4.7 Are you aware of any interfaces\(^{(197)}\) between the Directives and other EU Legislation?

4.7.1 If yes, do these function in a satisfactory manner?

4.7.2 If yes, please mention those leading to enhanced OSH protection. Is there room for improvement?

4.7.3 Please mention those leading to incoherencies impeding enhanced OSH protection. How could these interfaces be improved?

4.8 Is there a need for new interfaces between some Directives and other EU legislation? What interfaces (please explain)?

Are you aware of any study and/or other resource that reflects/covers the abovementioned or other interfaces, incoherencies between OSH Directives and other EU Legislation? Please provide references.

\(^{(197)}\) Areas where the requirements from one piece of legislation form the basis for implementation of a requirement in another piece of legislation (e.g. REACH safety data sheets forming the basis for risk assessments under OSH legislation).
Annex – Glossary

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</tr>
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</tr>
<tr>
<td>Micro</td>
<td>&lt; 10</td>
<td>≤ € 2 m</td>
<td>≤ € 2 m</td>
<td></td>
</tr>
</tbody>
</table>


<sup>(201)</sup> Report from the Expert Group on ‘Models to Reduce the Disproportionate Regulatory burden on SMEs’, May 2007.<br>
<sup>(202)</sup> (2003/361/EC) article 2.1.