INDICATORS FOR MONITORING AND EVALUATION: A PRACTICAL GUIDE

This draft working paper has been drawn up on the basis of the current state of the draft Council Regulation laying down general provisions on the ERDF, ESF and the Cohesion Fund. It will be revised as necessary to reflect any changes which are agreed by the Council.

23 January 2006
1. INTRODUCTION

1.1. Objectives of the Working Paper

This working paper has two major objectives: First, it provides an introduction into the methodology of indicator systems as a management instrument in the framework of Structural and Cohesion Fund programmes; and, second, it provides practical guidance for the authorities and stakeholders in Member States that are responsible for Structural and Cohesion Fund programmes, in particular for the creation of an indicator system as required by the General Regulation on Structural Funds.

The methods and approaches presented in this working paper are of an indicative nature; they need to be applied in a creative manner for each specific programme. The working paper should be understood as an invitation for a common development and further improvement of indicators in Structural and Cohesion Fund programmes.

As guidance, the working paper is meant to indicate what a Member State should include in an Operational Programme, that will be adopted by the European Commission. As a methodological paper, the working paper can and should be applied also to those levels that do not find a description in an Operational Programme, id est for the “measure” and project level.

Indicators in the understanding of this working paper are just one of several instruments used in the context of monitoring and evaluation. They should help Member States and the Commission to move to more results-driven public management.

The working paper covers both ERDF and ESF interventions as well as – for the first time – the Cohesion Fund. The annexes specify some specific arrangements for the different Funds.

The working paper consists of three major parts. Chapters 2 and 3 present how indicators fit into the overall programming cycle of Cohesion Policy interventions and the context of monitoring and evaluation and provide some fundamental definitions. A second part (chapters 4 and 5) discusses how the quality of indicator systems can be improved. Chapter 6, finally, is focused on selected questions linked to the establishment of an indicator system within the process of programming and implementation.

1.2. Main messages and elements of change

1.2.1. Evolution, not complete revision, is the aim

The use of indicators for monitoring and evaluation in the framework of Structural Funds became established practice in the mid 1990s. The Commission’s 1999 working paper on indicators for monitoring and evaluation contributed to the clarification of the terminology used and provided a frame of reference. The 2000-2006 programming period brought about substantial progress in the systematic application for all Structural Funds programmes. The indicator systems performed better, contributing to more effective programme management.
The main elements of the methodology as presented in the 1999 working paper proved to be appropriate in the current programming period. The challenge for the 2007-2013 programming period is to improve and better communicate the main ideas, not to revise them completely.

1.2.2. More focus and user orientation for the indicator system

In the 2000-2006 programming period Structural Fund programmes made significant progress in the coverage and quality of their indicator systems. On the other hand, some systems had a tendency to become overly complex and were insufficiently driven by the needs of the users. The objective for the 2007-2013 programming period should be to establish systems of indicators with a clear orientation towards users at different levels, eliminating unused ballast and improving the remaining indicators. In designing such systems, more attention should be paid to the different uses of indicators during the processes of monitoring on the one hand and evaluation on the other.

1.2.3. More quality for strategic indicators

In the 2007-2013 programming period Member States and the Commission will give their partnership a more strategic character. This means that Structural Fund Programmes fix only longer term global objectives – programmes and their priorities - which consequently are transformed by the Member States into more operational, shorter terms objectives that take into account a constantly changing socio-economic environment. The experience from the 2000-2006 generation of Structural Funds proves that a higher quality of quantification and measurement of result indicators in particular is a condition sine qua non for this goal. A more strategic approach in the programming documents creates additional challenges for accountability.

1.2.4. Priorities linked to EC policies

The more strategic character of programming period 2007-2013 is also based on a reinforced link between Structural Funds Programmes and the major EC policies, such as Sustainable development and the Lisbon strategy, as expressed in the Community Strategic Guidelines. Indicator systems should aim to reflect those links, taking account of the indicators used for reporting or for setting targets in the policy cycle of these strategies, as for example those of the European Employment Strategy.

1.2.5. Generate more knowledge across Member States

Due to a lack of comparable indicators, it has proved difficult up to now to provide quantified information of a good quality across Structural Fund programmes on many politically important issues, e.g., on the number of SME supported or jobs created, or to compare the performance of different programmes. For this reason, the working paper advocates a broader use of the concept of core indicators, generating more comparable information across programmes.
2. THE CONCEPTUAL FRAMEWORK, PROGRAMME AND CONTEXT INDICATORS

2.1. Needs and intervention

The starting point of each public financial intervention is an analysis of the socio-economic and environmental reality with an identification of problems or needs. Such needs can be measured in financial and physical terms.

The next step is the consideration of whether or not a publicly financed socio-economic development programme (a financial input) is an appropriate instrument to address such needs. The underlying – often economic – explanatory model defines which specific instrument is to be used to achieve the objective.

If a decision in favour of an intervention has been taken, the question arises, to what degree a certain budget will deliver the objective under consideration (or: how much money is needed to achieve a defined objective?).

Two additional important points should to be taken into account. First, socio-economic phenomena in most cases are influenced by multiple factors, by a multifaceted context, the public intervention being just one of the factors. Second, public interventions can have unintended consequences, both positive or negative, in addition to the intended effects. The following table presents this idea in a simplified manner. It shows that the explanatory power of the analysis of only Structural Fund interventions vis-à-vis certain realities can be limited.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Other policies and factors</th>
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<tbody>
<tr>
<td>Intended effects</td>
<td>Intended effects</td>
</tr>
<tr>
<td>Unintended effects</td>
<td>Unintended effects</td>
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</tbody>
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2.2. Context and Programme indicators

While context indicators provide quantified information on the socio-economic and environmental situation and can express identified needs in quantitative terms, programme indicators, on the other hand, relate to the effects of the intervention. They gauge the extent to which the (intended) effects of a programme are expected to change the socio-economic reality or the behaviour of socio-economic actors, expressing in this way the quantified objective of the intervention.

**Definition: What is an indicator?**

An indicator can be defined as the measurement of an objective to be met, a resource mobilised, an effect obtained, a gauge of quality or a context variable.

An indicator should be made up by a definition, a value and a measurement unit.
Seen from a bottom-up perspective, the public financial intervention – the input - in the first instance produces some (physical) outputs, which are the direct result of a certain operation, e.g., kilometres of a railroad constructed or consultancy services provided to enterprises. The respective beneficiaries will obtain through these outputs some advantages, such as reduced travelling time or acquired new knowledge in the examples given. These effects are called results. Usually an intervention will affect not only final beneficiaries, but through them cause more changes in the socio-economic or natural environment. Such effects, such as, for instance, a higher GDP are called impacts. As shown in table 2.1, impacts can be intended and unintended.

<table>
<thead>
<tr>
<th>Definition: input, output, result and impact indicators</th>
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<tbody>
<tr>
<td><strong>Resource or input indicators</strong> refer to the budget allocated to each level of the assistance.</td>
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<tr>
<td><strong>Financial</strong> indicators are used to monitor progress in terms of the (annual) commitment and payment of the funds available for any operation, measure or programme in relation to its eligible cost.</td>
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<tr>
<td><strong>Output</strong> indicators relate to activity. They are measured in physical or monetary units (e.g., length of railroad constructed, number of firms financially supported, etc.).</td>
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<td><strong>Result</strong> indicators relate to the direct and immediate effect on direct beneficiaries brought about by a programme. They provide information on changes to, for example, the behaviour, capacity or performance of beneficiaries. Such indicators can be of a physical (reduction in journey times, number of successful trainees, number of roads accidents, etc.) or financial (leverage of private sector resources, decrease in transportation cost, etc.) nature.</td>
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<tr>
<td><strong>Impact</strong> indicators refer to the consequences of the programme beyond the immediate effects. Two concepts of impact can be defined:</td>
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<tr>
<td>- <strong>Specific</strong> impacts are those effects occurring after a certain lapse of time but which are, nonetheless, directly linked to the action taken and the direct beneficiaries.</td>
</tr>
<tr>
<td>- <strong>Global</strong> impacts are longer-term effects affecting a wider population.</td>
</tr>
</tbody>
</table>

The following figures illustrate the intervention logic and the terminology used.
The design and implementation of Structural Funds and Cohesion Fund programmes need the commitment and work of a multitude of stakeholders. This process does not only deliver (intended and unintended) outputs, results and impacts of a programme, as illustrated above, but influences and changes the knowledge, working methods, social competences, etc., of the stakeholders themselves. In some contexts, particularly in relation to establishing indicators for innovation, co-operation, RTD, etc., it can be helpful to pay special attention to these process aspects and use them for monitoring and evaluation (see chapter 4.6).
2.3. Structural Fund interventions as complex development programmes with different users: multiplicity of effects and data

Structural Fund programmes usually set themselves comprehensive objectives that touch upon many factors contributing to growth and social and economic cohesion. Consequently, from a top down perspective the programmes include a relatively wide range of instruments, expressed in the form of priorities. Member States transform specific priorities into several actions (measures). The implementation of programmes involves different administrative levels and other stakeholders, such as socio-economic partners, implementation agencies, managing authorities, Member States and the European Commission. These actors have different roles and different information needs. In designing the monitoring and indicator system there should be a clear understanding of who needs what information and when, as illustrated in the following example.

An implementation agency first of all is interested in a broad set of information concerning the measure it is responsible for. The agency has to keep under control the physical execution of projects and the measure as a whole and might find it useful to use physical output indicators for this purpose along with financial indicators. In addition, the implementation agency is likely to be interested to complete the picture on the other outcomes of the projects as reflected by result and impact indicators.

The managing authority of the programme is likely to need less detailed information about this specific measure and very little information about individual projects. The question of the information needed for the managing authority should be asked from a top-down perspective, defined by the objective of the respective programme priority. The appropriate indicator type here could be result and impact indicators. The managing authority could be interested in output indicators for other reasons, e.g., for the measurement of efficiency (unit costs) of different implementing agencies.

The main interest of the European Commission lies at the programme and priority level, i.e., the respective result and impact indicators. Some output indicators (which are relatively easily to aggregate across different programmes) can supplement this information.

In establishing the indicator system of a programme it is necessary to keep in mind that each intervention delivers a diversity of data and effects. The challenge is to select and to record data that is relevant for the users at the different levels or, in other words, not all available information should be recorded and transmitted to every level.

After consideration of programme and context indicators we turn our attention to the implications of the use of indicators in monitoring and evaluation on the design of an indicator system.
3. **USE OF INDICATORS FOR MONITORING AND EVALUATION**

Monitoring and evaluation are two closely linked concepts. Nevertheless, one should be clear about their different objectives and functions in order to design a successful indicator system.

**Monitoring** is essentially the checking of outturns against expectations. It is generally relatively easy to monitor the values for output and - with some more effort required - result indicators.

**Evaluation** involves interrogating information from monitoring and other sources to find out and explain the effects of the interventions. Evaluators use the data delivered by the monitoring system, including output and result indicators. But the most important instrument used here is an impact indicator. Impact indicators move away in time from the action (specific impact indicators) or from the direct beneficiary (global impact indicators). The move in time and link with the direct beneficiary often will make it impossible to create impact data as easily and reliably as values for output and result indicators. Consequently, it is necessary to decide in the process of programme elaboration which indicators can be gathered from monitoring and which need inputs from evaluation.

**3.1. Impact indicators: An instrument for strategy decisions**

Impact indicators should play a decisive role at certain stages of the programming cycle: the ex ante quantification of impacts is an instrument for the strategic orientation of a programme during its planning phase; and only the impacts of a programme found ex post allow a final judgement to be made on the success or failure of a programme. It should be recognised however, that some impacts will only be measurable after a certain time of programme implementation, e.g. after 3 or 4 years.

**3.2. Impact indicators: how to obtain their values**

As explained above, impact indicators by their nature ask for more developed arrangements to obtain meaningful values than is possible for data that can be obtained from the monitoring system. An improvement in the economic situation, for example, might be due to factors external to the programme. In many cases, only evaluations will be capable of delivering reliable information. As this work can demand quite substantial efforts, it is reasonable to define impact indicators only for the most important (e.g., in financial terms) priorities of a given programme.

For the same reason, the Commission advocates a step by step approach. In many cases it may improve the effectiveness of the indicator system to concentrate the limited resources on the establishment of reliable, measurable result indicators of good quality rather than to create impact indicators of questionable value. Such result indicators are a necessary building block for a subsequent development of impact indicators. Both indicator types need a sound explanatory model as their basis. A collection of data without a model explaining the causal chain is not useful, as the establishment and explanation of values would remain an unsolved question.

Such research needs careful planning well in advance, including the necessary financial means. Appropriate techniques could include case studies, surveys, or the use of control

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1 Impact indicators are not a legal requirement of Regulation XXXX/2006.
groups. Other instruments are sector specific, econometric or macroeconomic models. The Commission emphasises the role of primary research on beneficiaries for the reliable assessment of impacts.

As explained under heading 2.1, some shortcoming are inherent to the logical framework approach as far as unintended effects and the influence of other policies and factors are concerned. An indicator system based on this framework reflects these limitations – an issue that should be borne in mind in evaluations when using impact indicators.

3.3. Result indicators: A core instrument for programme management

The ultimate objective of Structural Funds and Cohesion Fund assistance is a certain impact, measured as far as possible by impact indicators. In an ideal world strategic decisions of programme managers such as programme revisions should be based on this type of indicator. The difficulty is that impact indicators by their nature are often available only after a considerable time lag and they often need substantial methodological input in order to be valid. Output indicators, on the other hand, deliver only information about the physical, not the socio-economic, effects of an action. In practical terms this gives a special importance to result indicators for the management of a programme as a whole during the implementation of an intervention.

The Commission wishes to encourage the Member States to concentrate their efforts on the improvement of result indicators, particularly of those that will be used to define the objectives of each priority.

Such efforts should cover all elements contributing to the quality of an indicator: a sound analysis of the context, the understanding of the assumed causal chain, a clear definition, a baseline, a definition of the measurement method and a quantified target. Some result indicators might need additional preparatory work in order to make the needed information available, as described in chapter 3.2 for impact indicators.
4. **DESIGNING A HIGH QUALITY SYSTEM OF INDICATORS**

After the definition of the most important types of indicators and the discussion of their use for monitoring and evaluation we turn the attention to some selected issues which are essential for the performance of an indicator system and the quality of individual indicators.

4.1. **A clear, focused strategy with theoretical underpinning**

A first issue that programming authorities should keep in mind is that a programme that is concentrated on a **limited number of priorities** is likely to generate a higher impact in the selected areas and can be reflected in a limited set of indicators.

Secondly, the quality of an indicator system depends directly on the clear understanding of the intervention logic of a programme, i.e., the link between measures\(^2\), priorities and the programme level. Every priority should make explicit its underlying **economic and social rationale** – the channels through which a certain intervention is expected to affect socio-economic development.

As an example, what is the mechanism through which capital grants are supposed to enhance the competitiveness of enterprises? The answer to this question will guide the selection of the appropriate indicators. Indicators in this context should be seen as an instrument that helps to clarify the content of measures and priorities: Difficulties in identifying an appropriate indicator are very often the expression of an insufficiently understood action. One of the conclusions should be to develop indicators within the discussion on the action in general, not to “add” indicators when the discussion has been finished.

4.2. **Context indicators**

Article 36 of the General Regulation provides that programmes contain an analysis of the situation in terms of strengths and weaknesses for the regions or policy domain concerned. Context indicators reflect this stipulation and should form part of the programming process.

Each programming document has an individual overall objective and the analysis will be adapted to this objective. To provide a socio-economic analysis means not simply to describe somehow with a maximum of data the situation in a certain area, but to present the driving forces behind the picture and explanatory variables based on economic theory. Such a structuring effort is necessary to focus the analysis, to have available criteria to differentiate between essential and secondary phenomena. When selecting context indicators, Member States should take account of indicators already used by such policy frameworks as the National Reform Programmes for the Lisbon Strategy and the National Action Plan for Inclusion. Consistency should be ensured whenever appropriate.

Context indicators should reflect the structure of the socio-economic analysis of a programme, especially its SWOT analysis. They are relevant in order to assess regional needs through a socio-economic analysis of a country or region concerned, and in order to monitor the evolving general context of a programme.

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\(^2\) Measures are not anymore part of the Operational Programmes in the programming period 2007 – 2013.
Context indicators should be updated in annual reports and used when the programme strategy is evaluated. They are a means to carry out systematic reporting and analysis throughout the lifetime of a programme.

Often official statistics can serve as data source for context indicators. If data is missing for important context indicators, special efforts should be undertaken to obtain the necessary information (e.g., studies, surveys).

As this type of indicator reflects the context of a programme which is not or not directly affected by a Structural Fund Programme, it is evident that programming documents cannot include quantified targets for this type of indicator.

4.3. Baselines

Baseline data refer to the initial value against which an indicator is subsequently measured. Baseline data are indispensable if programme indicators are to be meaningful because they put the activities of a programme into their context. It is the instrument to understand the relative importance of a Structural Fund intervention in relation to the existing situation, the needs and national policy instruments. For example, if the aim of a measure is to increase the number of SMEs in a region, the most appropriate baseline data are the number of SMEs existing at the start of the programme. Once this information is collected, it will then be possible to conclude, quite specifically, that, say, 20% of the existing businesses in an eligible region benefited from Structural Fund assistance.

In defining baselines one can distinguish two approaches with different information values:

a) Static concept: The concept, used for most of indicators in SF programmes, is confined to a simple statement of a value for an indicator at a certain reference point in the past (figure 4.4a). For example: the number of SMEs active in research in a certain year. Some programmes use an even simpler instrument by providing a reference value for activities in the past by the same or a similar instrument. For example: number of SME active in research supported by the programme in a certain year of the past. Even if such a reference value is not a proper “baseline”, this instrument can help to understand the planned instrument better by putting it into relation with past activities.

b) Dynamic concept: A more demanding definition is the dynamic concept of a baseline (a baseline scenario or counterfactual situation). Here one projects the value of a certain indicator during the programming period (figure 4.4b).

4.3.1. Information sources

Baseline data in the static concept are gathered primarily from official statistics. Sometimes, however, these sources can be problematic. Typical problems include:
- the non-availability of data at an appropriate geographical level;
- the non-availability of data that is sufficiently disaggregated by sector;
- delays in the publication of data; and
- gaps in official statistics in relation to the requirements of the programme (for example, the distinction between full-time and part-time workers might not feature in official statistics);
In some cases official statistics will need to be supplemented with surveys or, possibly, indirect indicators (for example, SME turnover data can offer some approximation of competitiveness).

The dynamic concept requires the use of a variety of techniques, which can be of very different ambition. An important issue that can be relatively easily integrated is the planned intervention of national public funds. For instance, for many infrastructural priorities this information will be the most important factor determining the counterfactual situation without Structural Funds.

4.3.2. Which approach should be used?

The decision on the appropriate approach for baseline data (static or dynamic approach, use of reference values) should be done in such a way that

- the most important parts of a programme (in financial and/or strategic terms) use a more developed approach,
- the specific dynamic features of an intervention area are correctly reflected. This means for instance that a region with a developed road network, that is likely to see little change in the future could use the static concept, whereas a region lagging behind undertaking significant efforts by its own and national funds for road construction should use a dynamic concept for the baseline.

In most cases the static approach will be sufficient for the purposes of a programme.

4.4. Ex ante quantification

One of the most important overall objectives of the programming system for Structural Funds is to facilitate the transition from a primarily input-driven implementation system of socio-economic development to an results-oriented system. The categories of output, result and impact indicators should be an instrument for this purpose. This consideration explains the important role of ex ante quantification of programme objectives. Ex ante quantification is one of the most demanding exercises in establishing an indicator system. All weaknesses of the system, concerning definitions, data availability and performance of explanatory models manifest themselves in this exercise. In this sense, the quantification of a target for an indicator is a quality check.

Indicators need quantified targets because otherwise the extent to which the original objectives are being met cannot be measured. Inevitably, as with all such forecasting exercises, an element of judgement is required in addition to data processing.

Two first instruments can be used for the quantification of targets: the use of historic time series and the use of reference or benchmark values drawn from prior monitoring and evaluation exercises:

- Time series together with a clear understanding of explanatory factors in an ideal case will stem from the analytical part of the programme and the development of a baseline as described above. The insights gained can serve as basis for an extrapolation, reflecting the intervention of a programme.
Benchmarks offer a further source of information for quantifying the objectives associated with measures and enable the effectiveness and efficiency of the actions in question to be compared. Such data should be used with caution, as the specific conditions for different programmes may not be the same.

Experience shows that outputs and results are relatively straightforward to quantify in that they are quite close to the ‘measure’ level. In contrast, impacts must be measured from outside the operational context. They need not, therefore, be particularly visible or obvious and this has adverse consequences in terms of their measurability. In addition, impact is often the cumulative effect of a number of measures and this further complicates analysis. Evaluation can be useful in overcoming such difficulties.

The achievable quality for the quantification of targets at priority and programme level will depend on the quality of the quantification at the measure level (which is not included in the programming document). In this context the Commission recommends that all outputs should be quantified at measure level. In a next step, attention should be concentrated on the quantification of result indicators for the most important parts of a programme in strategic and financial terms. After that one should move to the quantification of selected impacts.

As mentioned above, the use of forecasting techniques or small sectoral models might be necessary for result and impact indicators. Especially for impact indicators the utility of the quantification depends directly of the quality of the measurement and estimation methods.

If a certain programme uses macro-economic modelling techniques, this should be used in the indicator system. First of all, the model can contribute to the setting of targets at programme level. As far as possible, a consistency check between the data produced by this top down technique and the bottom up system of output, result and impact indicators should take place.

If a managing authority has succeeded in developing reliable result and impact indicators, the quantified targets of the respective lower level (especially output targets) acquire a more instrumental character. The progress in achieving the result or impact target will determine possible changes of more operation-oriented indicators at the respective lower level (first of all the targets for output indicators).

Difficulties in the aggregation of indicators are a typical phenomenon for the priority and programme level. Whereas financial indicators can be aggregated to all levels (measure, priority, programme, national level), physical indicators are more difficult to aggregate, and it is often inappropriate to attempt to do so. There is not necessarily an identity of indicators at two corresponding programme levels. Different actions may contribute to a more general objective at priority level and this more general objective will be reflected by an indicator of more generic nature. For example, a road and a railway construction measure could contribute to the improved accessibility of a region, expressed in a respective impact indicator without reference to the transport mode; or several measures (e.g., training, investment aid) may contribute to the innovative capacity in a given region that would be expressed at priority level by the number of innovations in supported enterprises.
4.4.1. Static and dynamic concept

In relation to baselines, a distinction can be drawn between a static concept and a dynamic concept for the setting of quantified targets (figures 4.4 a and 4.4 b).

**Figure 4.4 a. Static concept**  
**Figure 4.4 b. Dynamic concept**

4.5. Core indicators

Programmes can include a large number of indicators, reflecting the wide variety of interventions and users needs.

The Commission, however, also has information needs but these relate to a more limited subset of “core” indicators. We can distinguish two types of core indicators:

a. Core indicators specific for a programme

As already outlined in chapter 3, the general regulation emphasizes the need to describe the objectives of each priority in terms of expected results. They should be explained in a qualitative manner in the programming document. Programme monitoring will pay particular attention to the attainment of those objectives and results. These indicators shall capture the core elements of the expected changes and are, consequently, especially important.

In some cases, these indicators will assume another important function: when they can be derived from more general policy frameworks, such as the Lisbon agenda, they will describe the contribution of structural funds to those policies.

b. Common minimum core indicators

Usually the wide variety of programme indicators is not directly comparable across programmes. Therefore, the Commission wishes to encourage the use of common minimum core indicators where appropriate to the content of programmes.

**Common minimum core indicators** are physical and financial indicators, which can be used to make comparisons or aggregations of data across similar programmes, priorities or measures. The concept can be useful in different contexts: for example, a national authority responsible for the National Strategic Reference Framework could be interested in collecting certain information across different programmes.
Generally speaking, the number of core indicators must be small to ensure that they are appropriate and manageable with regard to programme monitoring and comparative or thematic analyses. Common core indicators are usually singled out from the larger number of programme (output, result, impact) indicators. In other words, core indicators are not a separate monitoring system, they are a subset of indicators that have a special use.

Common minimum core indicators are of special importance for the information and accountability needs of the Commission. Some, related to the categorisation of expenditure, are defined in the implementing regulation and can be managed and transmitted electronically. Others are part of the monitoring system and progress should be presented in a separate table in the annual report. For example, employment is an EC policy objective and simultaneously a priority in most forms of assistance. An important core impact indicator is therefore the number of (gross) jobs directly generated by structural assistance.

Annex 1 of the working paper lists the common minimum core indicators which the Commission suggests that Member States apply across ERDF and Cohesion Fund programmes, wherever appropriate. Annex 3 present the approach recommended for ESF programs.

These lists of core indicators do not detract from the importance for the Member States to establish indicators for each programme/priority with a particular focus on result indicators (see chapter 3.3).

### 4.6. Innovation, co-operation: special attention to process issues

Throughout the whole process of the establishment of an indicator system it should be recalled that indicators are just another instrument for effective management with an intrinsic potential and limitations. For instance, indicators may distract the attention of programme managers from important, but unexpected impacts or from major process issues. In addition, for some actions (e.g., support for RTD, innovation, territorial co-operation) it might be especially difficult to collect meaningful information on results and impacts. Here the collection of process-related information, on the development of capacities and competences of stakeholders can be an instrument to support programme managers in their management and reporting.

### 4.7. Checklists – what should be included in Operational Programmes and National Strategic Reference Frameworks

This section concludes with two checklists which summarise the indicators and explanations which should be included in Operational Programmes and the National Strategic Reference Framework. They synthesise previous sections and should be used flexibly depending on the programme concerned.
Indicators - what should be included in the Operational Programme? A checklist

Analysis
Context indicators
- name / definition
- baseline
- data source, frequency of reviewing

Description of strategy
Indicators at programme level: Impact or result indicators and Core indicators
- name / definition
- baseline
- quantified target
- description of source or measurement method
- breakdown by sex and size of recipient undertakings

Indicators at priority level: result (impact) indicators; output indicators if necessary
- name / definition
- baseline
- quantified target
- description of measurement method or source
- breakdown by sex and recipient undertakings

where appropriate:
- source of information
- periodicity
- measurement method

Description of implementation system
- description of responsibilities for data collection and analysis
- provisions for annual report: up-date of context and programme indicators planned
- regular information on indicator values for Monitoring committee planned

Indicators - what could be included in the National Strategic Reference Framework? A checklist

Analysis
Context indicators
- name / definition
- baseline

Description of strategy
Indicators at NSRF level
Convergence Objective: preferably data obtained from macro-economic models (impact on GDP, employment, investment);
Competitiveness objective: gross new jobs created,
other indicators, if appropriate
- name / definition
- baseline
- quantified target
- description of source or measurement method

Indicators at priority level: result (impact) indicators; output indicators if necessary
- name / definition
- baseline
- quantified target
- description of measurement method or source

where appropriate:
- source of information
- periodicity
- measurement method

Core indicators

**Description of implementation system**
- description of responsibilities for data collection and analysis
- provisions for reporting system: up-date of context and programme indicators planned
5. **INTEGRATION OF HORIZONTAL ISSUES**

5.1. **General principles**

Member States may wish to integrate horizontal objectives of different nature in their programmes. Such themes could be sustainable development, equal opportunities, cross-border cooperation and many others. In doing this some general principles can be helpful:

- The monitoring and evaluation of horizontal themes should be embedded into the general indicator system of a programme and not be separated into a specific indicator system.

- Indicator systems for Structural Fund interventions should be decision oriented. Data should not be collected without clear purpose.

- The establishment of any indicator system is costly. Indicators for horizontal priorities should be applied first of all for measures that have a significant impact on a given horizontal theme.

- It is recommended to use a step by step approach. It is equally important to be open to experiments and to find out good practices. For example, a one and only way to implement sustainable development does not exist; it depends always on the situations and priorities concerned which can vary considerably.

5.2. **Breakdown of data by gender and by size of recipient undertakings**

Taking account of the general principles outlined above, Member States should be aware of Article 65.2 of the General Regulation requiring that, where the nature of the assistance permits, the statistics shall be broken down by sex and by the size of the recipient undertakings.

5.3. **Strategic environmental assessment**

Directive 2001/42/EC\(^3\) requires the Member States to carry out Strategic Environmental Assessments for a whole range of programmes. This strategic assessment will be carried out under the responsibility of the Member States. It is very likely that many Structural Funds programmes will be subject to this Directive. Article 5 of the Directive asks for an assessment of significant effects on the environment of implementing a plan or programme; article 10 stipulates a monitoring of plans and programmes. In developing indicator systems for Structural Funds programmes Member States should take a decision if and how the monitoring as required under Directive 2001/42 and the monitoring system of the Structural Funds programme as such should be integrated or complement each other.

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6. USING THE INDICATOR SYSTEMS DURING THE PROGRAMME LIFECYCLE

Indicators need to be considered through all the phases of the Structural and Cohesion Fund programme management cycle:

- planning and programming,
- implementing structural interventions,
- evaluation.

Decisions and actions can be influenced by information provided by the indicator system at each of these stages. Therefore, it is crucial that the structure of the system as well as indicators themselves are tailor-made to users’ needs at each stage of programme management.

6.1. Planning and Programming

In most cases the future managing authority of the programme (and the authority responsible for the NSRF) will take the lead for the elaboration of the indicator system.

6.1.1. Integration in programming

The establishment of the indicator system should be integrated in the programme planning at an early stage. The inherent need for precision of definition and the quantification of objectives can contribute substantially to the quality of the programming. In addition, experience proves that an indicator system is effective when it starts to measure the programme implementation from the very beginning.

6.1.2. Establishment and Management in partnership

The potential users of information are the stakeholders who have their own areas of responsibilities and, therefore, their distinctive information needs. As a result, not all indicators are useful for everybody. Typical users are:

- implementing agencies, project promoters,
- managing authorities,
- monitoring committees,
- European Commission,
- European Parliament and national parliaments,
- external evaluators,
- wider public, including civic organizations.

In order to establish an indicator system, it is necessary to involve to the maximum possible the future suppliers and potential users of information. Already available information and existing monitoring systems should be used, while also clarifying what additional, new indicators should be established in order to better meet information needs.
The users should co-operate on a regular basis with the authority responsible for the design of the indicator system, for example, in the form of a temporary working group. Such a working group – if effective during the planning and programming phase - could be transformed in the course of programme implementation into a more formal monitoring platform, especially for bigger Convergence Objective programmes. The platform could be responsible for quality checks or further improvements. The involvement of one or more outside experts may also be of benefit. Experience has also shown, especially for large programmes with many stakeholders, that it can be useful to fix procedures, definitions etc in a user manual.

Figure 6.1: Suppliers and users of the indicator system

The main suppliers of information on indicators are the implementation agencies who implement Structural and Cohesion Fund programmes in the field. Their participation is likely to ensure that the system is realistically designed because they are familiar with practical possibilities and limits of data collection. They can be helpful in planning the channels for collecting information as well as proposing the initial quantification of indicators. The future management authorities should make sure that already existing information is used or reach a clear understanding with the users on what not yet generated data could improve their management and decision making.

Other suppliers are the official statistical services. Their statistics may be used to define context indicators which describe a basic situation at the beginning of an intervention as well as to quantify baselines for other indicators.

6.1.3. Proportionality

The Regulation introduces the concept of proportionality (art. 11bis). The scale of the Operational Programme should be considered in the context of the indicator system proposed. In particular for the measurement of impacts, methodologies used should reflect the size of the interventions.

The indicator systems of complex programmes (e.g., within the Convergence Objective) with a high number of priorities and measures will necessarily be more difficult to manage than the system of a smaller programme. The challenge is to design indicator systems as complex as necessary and as small as possible under the specific circumstances of a specific programme. The aim is not to achieve an equal coverage of all programme and priority objectives. The impact and result indicators should cover priorities or measures which represent the bulk of expenditure or are of strategic importance from the point of view of programme objectives or the information needs of the potential users.
6.1.4. **Quality check**

The Commission invites the competent authorities to undertake a quality check of the indicators identified for the programme. This check should cover the system of indicators for questions such as:

- coverage,
- balance, and
- manageability.

and individual indicators using the following quality criteria:

- relevance,
- sensitivity,
- availability,
- costs.

6.1.5. **Coherence between NSRF and Operational programmes**

The authority responsible for the National Strategy Reference Framework together with the Managing Authorities of the Operational Programmes should assure, whenever appropriate, a coherence of indicators used in the NSRF and the Operational Programmes.

It may be useful to organize an exchange of experience or co-ordination across several Operational Programmes or for Programmes co-financed by one Fund, e.g. the European Social Fund, during the implementation period.

6.1.6. **Coherence with indicators of established EC policies**

The more strategic character of programming period 2007-2013 is also based on a reinforced link between Structural Funds Programmes and other major EC policies. Indicator systems should aim to reflect those links, taking account of the indicators used for reporting or for setting targets in the policy cycle of these strategies, as for example those of the European Employment Strategy. Examples for the policy fields of the employment strategy are provided in annex 2.

6.1.7. **Role of ex ante evaluation**

Working Paper No. [xx] provides detailed guidance on the ex ante evaluation. As regards output, result and impact indicators and their targets, the working paper states that these should be proposed by the competent authorities. This should include an estimation of the likely impact in terms of jobs created. The evaluator should verify the appropriateness of the indicators identified and the proposed quantification, on the basis of past experience and appropriate benchmarks.

The establishment of impact indicators is a complex task which may not be possible for those responsible for drawing up the programme. Some evaluation work on the part of the evaluators may be required as part of the ex ante evaluation if benchmarks and past experience do not provide a sufficient basis for establishing and quantifying impact indicators.
The evaluator should also verify the causality between outputs, results and impacts and make recommendations for improvements if appropriate.

Both the planners and the evaluator should seek to ensure that the system of indicators remains manageable and useable. In this regard, the evaluator may need to work with the competent authorities on a detailed level of indicators which will not appear in the Operational Programme but which will be necessary for the Managing Authority and Implementing Bodies in delivering the programme.

The relevant working paper should be consulted for more detail on this issue.

### 6.2. Implementing Structural Interventions

During implementation of Structural and Cohesion Fund programmes, the use of indicators requires consideration of a number of issues, including the reliability of data collection methods, how to usefully present the information to the monitoring committee and how to use it in annual implementation reports.

#### 6.2.1. Data collection

Data collection from the programme will be the task of implementation agencies and the managing authorities. Practical experience of data collection will provide insights on how indicators can be consolidated and improved. Ongoing close co-operation with the users of information would improve the practical application of the indicator system in the implementation phase of a programme as well as rationalise data collection methods. The risk of excessive data requirements exists not only within the public administration, but also for project promoters.

It will be the responsibility of the Managing Authority to check periodically the reliability of the information collected to provide additional guidance, if needed.

#### 6.2.2. Presenting the data to the monitoring committee

The monitoring committees are responsible for ensuring that Structural and Cohesion Fund implementation is effective. Their tasks include reviewing progress, especially the degree to which the quantified targets associated with each of the priorities have been achieved. Therefore, monitoring committees should be consulted on the indicator system during the planning phase as well as at an early stage of programme implementation in order to verify that:

- the indicator system as a whole has been set up properly, and
- define what kind of information is needed for its own work.

The monitoring committee should concentrate on the strategic issues of a programme. This understanding should guide the decision of a managing authority on which data - financial, physical or process related - is presented to the committee. In most cases, it would probably consist of aggregated financial data as well as information on result and impact indicators.

The members of the monitoring committee have different knowledge and experiences regarding Structural Fund programmes. In particular for complex Convergence Objective
programmes the use and interpretation of information provided by the indicator system might prove to be difficult. For these reasons, the managing authorities should when presenting data on indicators to the monitoring committee:

- Put quantitative information into its qualitative context,
- Reduce the volume of information provided, compared to current experience,
- Present information in standardised manner,
- Undertake some preliminary analysis, highlighting critical information, and
- Use appropriate presentation techniques.

6.2.3. Annual implementation reports

The managing authority will submit an annual implementation report to the European Commission within six months by the end of each full calendar year of implementation. This report will detail the progress made in implementing the assistance over the preceding year. These reports must include, *inter alia*, following elements:

- data on the context in which the assistance was implemented;
- the financial implementation of the assistance.
- progress made in achieving the priorities, quantitatively using the adopted monitoring indicators.

As far as the physical indicators are concerned, the reports should use indicators at priority and programme level, as well as core indicators as agreed in the respective programmes. Values for impact indicators can be added when they become available.

The implementation report is an opportunity to provide information not only to the Commission, but to other stakeholders too, including project promoters. Appropriate feedback and publicity measures should be put in place.

The tasks illustrated above lead to an important conclusion:

| The use and improvement of the set of indicators as part of the monitoring system is a continuous task during the programming period. The Commission underlines the need to establish and to develop the necessary administrative capacities, in particular within the managing authorities. |

6.3. Evaluation

Indicators represent a major source of information on which evaluations are based and they will be used at the different evaluation stages.

<table>
<thead>
<tr>
<th>Relevant evaluation issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance</strong> assesses the links between the defined objectives and the existing socio-economic problems to be solved by an intervention.</td>
</tr>
<tr>
<td><strong>Effectiveness</strong> compares what has been done with what was originally planned, <em>i.e.</em>, it compares actual with expected or estimated outputs, results, and impacts.</td>
</tr>
<tr>
<td><strong>Efficiency</strong> looks at the ratio between the outputs, results, and impacts and the inputs (particularly financial resources) used to achieve them.</td>
</tr>
</tbody>
</table>
Utility checks whether the impact obtained by an intervention correspond to society’s needs and to the socio-economic problems to be solved (it disregards all reference to stated objectives of an intervention).

Sustainability assesses the ability of the programme effects to last in the middle or long term after the funding of an intervention has ceased.

Indicators are most frequently used to measure effectiveness and efficiency ratios which can be calculated for each programming stage (overall programme level, priorities and measures/actions), i.e., in terms of output, result, and impact.

**Table: Effectiveness and efficiency indicators at different programming level**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Effectiveness</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure/action</td>
<td>Financial/physical output</td>
<td>Actual/planned output</td>
<td>Output compared to cost</td>
</tr>
<tr>
<td>Priority</td>
<td>Result (impact)</td>
<td>Actual/planned results</td>
<td>Result compared to cost</td>
</tr>
<tr>
<td>Programme</td>
<td>Impact (results)</td>
<td>Actual/planned impact</td>
<td>Impact compared to cost</td>
</tr>
</tbody>
</table>

The tasks of the ex ante evaluation concerning indicators are outlined above under heading 6.1.6.

Evaluations undertaken during the programming period should examine the degree of effectiveness and efficiency achieved in the selected area or theme under evaluation on the basis of indicators collected by the monitoring system and/or by an autonomous appropriate field work. It should also assess the quality, relevance and the level of quantification of these indicators. Either of the programme as a whole, selected parts of it or cross-cutting objectives.

Finally, the ex post evaluation – carried out by the Commission - in addition to a final assessment of effectiveness, will concentrate on questions of utility and sustainability. Impact and result indicators are likely to be the most important indicators at this stage of the programme cycle. For this purpose, ex-post evaluations are likely to involve – in addition to the monitoring data – methods typical for those indicators. The Commission will need the close cooperation of the Managing Authorities for the success of this evaluation, especially in relation to the provision of data.

**6.4. Indicators in the Programming Life Cycle – a Synthesis**

The following table summarises the role and function of indicators at the different stages of the programming life cycle. It can help to focus the attention of key stakeholders on the importance of indicators for effective design, implementation and evaluation of programmes.
<table>
<thead>
<tr>
<th>Stage of Programme Cycle</th>
<th>Issues for Indicators system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme Elaboration</td>
<td>• Analytical part: definition of context indicators</td>
</tr>
<tr>
<td>Definition of Programme Strategy and Priorities</td>
<td>• Definition of objectives at the Programme and Priority level – establishment output, result and impact and core indicators</td>
</tr>
<tr>
<td>Planning Implementation Arrangements</td>
<td>• Designing the monitoring system: electronic data processing, quality check of indicators,</td>
</tr>
<tr>
<td></td>
<td>• Designing the evaluation system: planning evaluation, with a description of indicator data needed to evaluate the Programme; selecting indicators, information on which should be delivered by an evaluation exercise</td>
</tr>
<tr>
<td></td>
<td>• Establishing rules and conditions for a smooth and efficient co-operation between these two systems</td>
</tr>
<tr>
<td>Integration of Ex Ante Evaluation</td>
<td>• Ex ante evaluation as a parallel process to Programme design</td>
</tr>
<tr>
<td></td>
<td>• Close co-operation between the evaluators and programme designers as regards the indicator system, monitoring and evaluation arrangements</td>
</tr>
<tr>
<td></td>
<td>• Examination of the evaluation recommendations and their possible consideration in the design of the Programme</td>
</tr>
<tr>
<td>Implementation</td>
<td>• Collecting and updating information on indicators and transferring it to the users;</td>
</tr>
<tr>
<td></td>
<td>• On-going process of improving the functioning of the monitoring system</td>
</tr>
<tr>
<td></td>
<td>• Carrying out on-going evaluations</td>
</tr>
<tr>
<td>Annual Reporting on Implementation</td>
<td>• Preparation of the selected indicator data and their preliminary interpretation for the Annual Reports – possible linkage between the on-going evaluation exercise and annual reporting which could improve the decision making process</td>
</tr>
<tr>
<td>Preparing Information for the Monitoring Committee</td>
<td>• Compiling information on indicators and the progress achieved by the programme towards the defined targets – delivery of data to the Monitoring Committee on a regular basis</td>
</tr>
<tr>
<td>Ongoing Evaluations</td>
<td>• Evaluation of the programme performance as regards particular priorities or themes by using indicators as necessary</td>
</tr>
<tr>
<td></td>
<td>• Review of indicators linked to a possible review of the programme strategy</td>
</tr>
<tr>
<td></td>
<td>• Review of functioning of the monitoring system (quality of indicators, data collection and their transfer to the users), if necessary</td>
</tr>
<tr>
<td>Ex Post Evaluation (Commission)</td>
<td>• Monitoring system delivering data on indicators (output and result indicators, if appropriate) for the purpose of the evaluation</td>
</tr>
<tr>
<td></td>
<td>• Evaluation role in assessing impact (and results, if appropriate) achieved by the programme – possible use of macro-economic models</td>
</tr>
</tbody>
</table>
ANNEX I: CORE INDICATORS FOR ERDF AND COHESION FUND

The indicators on this list should be integrated into the system of programme indicators for each Operational Programme, whenever appropriate. The list has been established to reflect the Community priorities as outlined in the Community Strategic Guidelines and the structure of the codification of interventions (Commission regulation [] on implementation of regulation [xxxx/xx]).

The information should be up-dated in annual reports, preferably aggregated at the level of Operational Programmes (or NSRF, if possible). Member States should use information available when the project has been approved (planned outcomes).

“CONVERGENCE” AND “COMPETITIVENESS AND EMPLOYMENT” OBJECTIVES

Programme level

(1) Jobs created,
   Definition: gross direct jobs created, full time equivalents, Source: monitoring system
(2) of this: for men
(3) of this: for women

Thematic fields
(selected fields out of codification system)

Research and knowledge economy (01 - 07)

(4) Number of RTD projects
(5) Number of cooperation projects enterprises – research institutions
(6) Research jobs created (preferably 5 years after project start)

Direct investment aid to SME (08)

(7) Number of projects
(8) of it: number of start-ups supported (first two years after start-up)
(9) Jobs created (gross, full time equivalent)
(10) Investment induced (million €)

Information society (10 - 15)

(11) Number of projects
(12) Number of additional population covered by broadband access

Transport investment (16 – 32)

(13) Number of projects
(14) km of new roads,
(15) of which TEN
(16) km of reconstructed roads
(17) km of new railroads
(18) of which TEN
(19) km of reconstructed railroads
(20) Value for timesavings in Euro / year stemming from new and reconstructed roads for passengers and freight
(21) Value for timesavings in Euro / year stemming from new and reconstructed railroads for passengers and freight
(22) Additional population served with improved urban transport

Renewable energy (39-42)

(23) Number of projects
(24) Additional capacity of renewable energy production (MWh)

Environment (44-47, 49)

(25) Additional population served by water projects
(26) Additional population served by waste water projects
(27) Number of waste projects
(28) Number of projects on improvement of air quality
(29) Area rehabilitated (km²)

Climate change (16-19, 39-43, 48, 51, 52, 62)

(30) Reduction greenhouse emissions (CO₂ and equivalents, kt)

Prevention of risks (53)

(31) Number of projects
(32) Number of people benefiting from flood protection measures
(33) Number of people benefiting from forest fire protection and other protection measures

Tourism (55-57)

(34) Number of projects
(35) Number of jobs created

Education (74)

(36) Number of projects
(37) Number of benefiting students

Health (75)

(38) Number of projects

Urban issues
If a Member State decides to allocate specific funds to urban issues in line with art. 36.5 of the regulation NNNN/2006, then following core indicators should be applied to these parts of the programme:

Physical and environmental regeneration

(39) Number of projects ensuring sustainability and improving the attractiveness of towns and cities

Competitiveness

(40) Number of projects seeking to promote businesses, entrepreneurship, new technology

Social inclusion

(41) Number of projects offering services to promote equal opportunities and social inclusion for minorities and young people
CO-OPERATION OBJECTIVE

Cross-border co-operation and Transnational co-operation

degree of co-operation
(42) Number of projects respecting two of the following criteria: joint development, joint implementation, joint staffing, joint financing
(43) Number of projects respecting three of the following criteria: joint development, joint implementation, joint staffing, joint financing
(44) Number of projects respecting four of the following criteria: joint development, joint implementation, joint staffing, joint financing

Cross-border co-operation

Number of projects

(45) encouraging the development of cross-border trade
(46) developing joint use of infrastructure
(47) developing collaboration in the field of public services
(48) reducing isolation through improved access to transport, ICT networks and services
(49) encouraging and improving the joint protection and management of the environment

(50) Number of people participating in joint education or training activities
(51) Number of people getting employment on the other side of the border as a result of CBC project

Transnational co-operation

Number of projects

(52) on water management
(53) improving accessibility
(54) on risk prevention
(55) developing RTD and innovation networks

Inter-regional co-operation

(56) Number of projects
ANNEX II: CORE INDICATORS AND MONITORING ARRANGEMENTS FOR ESF CO-FINANCED PROGRAMMES

Paragraph 4.5. presented two types of indicators which should play a central role in monitoring and evaluating programmes in the framework of partnership between the Commission, the Member States and the management authorities. For programmes co-financed by the European Social Fund a number of characteristics derive from its specific mission.

1. Core indicators relating to objectives

First, the principal specific character of the ESF to be taken into account arises because many co-financed priorities link directly with policies co-ordinated at a European level, which have common indicators and quantified objectives. This is the case in particular for the European Employment Strategy and the National Action Plans for social inclusion. ESF programmes must contribute to the implementation of these policies and, where the financial volume of the priorities or their strategic characteristics permit, the result indicators adopted to quantify the objectives should linked to those which quantify these policies at European level or in the NAP. This establishment of correspondence (via, for example, coverage rates) should facilitate the monitoring and evaluation of the contribution of the ESF to these policies.

Clearly, the same co-ordination requirement applies regarding context indicators and the analyses which accompany them. The elements of diagnostics already developed for the open co-ordination methods can and must be the starting point of the Operational Programmes.

2. Common minimum core indicators

As for the other Funds, for the ESF the need to collect some comparable data between programmes and between regions remains. In the interests of simplification, these indicators should be concentrated at two levels:

a) the principal common indicators are presented in the implementing regulation and concern the categorisation of the financial indicators (commitments and expenditure) and the recipients' characteristics according to main features (age, sex, labour market status, etc).

b) the other comparison requirements will be satisfied mainly by the follow-up systems already in place for policies for employment, inclusion and education. In these reports it should be possible to present significantly and sufficiently standardised information on the contribution of the ESF to the attainment of the political objectives at the European level and specific to each Country.

It is not necessary therefore to provide here a list of core indicators for the ESF. There is a need, however, to explore in greater detail the common comprehension of the indicators adopted within the framework of these policies and to strengthen common work between the authorities responsible for monitoring ESF programmes and those responsible for monitoring the NAP and other relevant policies. Through the work of correspondents' network for
evaluation of the ESF, which is managed by the Evaluation Unit of the DG for Employment and Social Affairs, exchanges of good practices in this area will be facilitated.

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