

# The Thematic Evaluation on the Contribution of the Structural Funds to Sustainable Development

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# ANNEX 1: OVERVIEW OF EC POLICY, INITIATIVES AND GUIDELINES RELATING TO SUSTAINABLE DEVELOPMENT

## Introduction

The purpose of this Annex is to provide an overview and critical analysis of the most important guidelines, policy papers and past initiatives dealing with sustainability issues and of relevance for regional development.

The European Commission has shown increasing interest in the issue of sustainable development, not only in the context of environmental policies but more recently, in the context of all policy decisions, be they economic, social or environmental. The current study, analysing the “Contribution of the Structural Funds to Sustainable Development”, takes place within the context of a range of policy papers, past initiatives and guidelines from the Commission of relevance to regional development, that deal with sustainability issues. The aim of this paper is to critically review the most important of these initiatives, to ‘set the scene’, so that the findings of the current study can build on what has been achieved to date.

## Policy context

### *General policy context*

The policy context for this study can be traced back to 1992, and the Maastricht Treaty on the European Union. This Treaty added further environmental objectives to the original objectives in the Treaty of Rome, stating that “the Community shall have as its task, [ .... ] a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment ...” (Article 2). Furthermore, in 1993, the Council of Ministers adopted the 5th Environmental Action Programme (5EAP) “Towards Sustainability”, covering the period 1993-2000, which committed the EU to promote sustainable development through its policies and actions.

The Treaty of Amsterdam in 1998 went further by adopting the threefold definition of sustainable development and stating that the Union’s financial instruments should work, simultaneously and in the long-term interest, towards economic, growth, social cohesion and the protection of the environment. Thus, Article 6 states that “environmental protection requirements must be integrated into the definition and implementation of community policies and activities [...] in particular with a view to promoting sustainable development”. This represented an important shift in emphasising the importance of SD in all community policies.

The issue of sustainable development has also been regularly addressed at the summit meetings of the European Council. Beginning with an agreement to develop a structured reporting system on the issue of SD at the Luxembourg Council in 1997, subsequent Councils have progressively considered environmental integration strategies in sectoral policies, environmental appraisal as part of policy development and the mainstreaming of environmental policies. Further progress was made in 1998, when the Commission presented a Communication to the European Council in Cardiff on “Partnership for Integration – A Strategy for Integrating Environment into EU policies”. At the most recent, Gothenburg Council (July 2001), the summit adopted a Sustainable Development Strategy (SDS), encouraging the assessment of environmental aspects, as well as social and economic aspects, in the drafting of all future policy documents (see Box 1 for details of the SDS).

### **BOX 1 - EU Sustainable Development Strategy**

In May 2001, the Commission presented its Sustainable Development Strategy, in which it recommended urgent action and a new approach to policymaking to improve policy coherence. It declared that all policies must have sustainable development as their core objective. This strategy was adopted at the Gothenburg Council in July 2001.

The Commission had identified six important trends that pose a threat to sustainable development in the EU: climate change; dangers to public health; increasing pressure on vital natural resources; poverty and social exclusion; an ageing population; congestion and pollution.

European Councils at Lisbon, Nice and Stockholm already agreed objectives and measures to tackle two of the six issues: combating poverty and social exclusion, and dealing with the economic and social implications of an ageing society. This strategy does not propose new actions in these areas, but focuses on the following four areas:

1. Limiting climate change and increasing the use of clean energy: The EU must meet its Kyoto commitments
2. Addressing threats to public health: Food safety and quality should be the objective of all players in the food chain.
3. Managing natural resources more responsibly: Biodiversity must be better protected and the pressure on natural habitats reduced.
4. Improving the transport system and land use: Economic growth should not mean continually rising pollution and congestion from transport.

The Commission reports to each Spring European Council on progress in implementing the Sustainable Development Strategy, through actions proposed under each field.

At Gothenburg, the Sixth Environmental Action Programme was also adopted, specifying the guidelines for environmental work within the EU over the next ten years. Apart from specifying priority areas for future action, the programme moves towards clearer specification of its strategic objectives and, crucially, the need to define measurable goals and timetables in areas such as land use, the urban environment and resource use.

As a means of monitoring EU change and development in all fields, the European Commission also adopted in 2001 a Communication on the Structural Indicators that will be used to assess progress towards achieving the economic and social goals set by the March 2000 Lisbon European Council. The main change to the list of Structural Indicators is that a new domain on the environmental aspects of sustainable development has been incorporated into the list, reflecting the outcome of the Gothenburg Council. This domain includes new indicators on climate change, sustainable transport, threats to public health and managing natural resources. New indicators have also been added on the gender pay gap, quality of work, science and technology doctorates and market structure in the network industries. These new indicators reflect the Commission's concern with the raft of economic, social and environmental factors, that all go to make up a broader view of sustainable development.

### **DG Regio policy**

As issues of sustainable development have come to the fore of the policy agenda, DG Regio has also focused attention on sustainability issues within its Structural Fund programmes, with more exacting requirements set out by each successive round of SF regulations.

The first introduction of thematic requirements for the SF took place in 1988, involving two themes: environmental sustainability and equal opportunities. Here we focus on the first of these. Although environmental appraisals were required for the programmes during the 1989-1993 period, few of them successfully integrated environmental sustainability as a development objective (Taylor et al, 2001, p25).<sup>1</sup> In response, the 1994-1999 SF regulations placed greater emphasis on this theme, recognising the need to take account of environmental issues when dealing with economic development. This led to a more pronounced, although still modest, integration of the environmental theme into the programmes launched in 1994. For Objective 2, further Community guidance was issued to support the elaboration of the revised 1997-1999 programmes, providing a stronger steer for the environmental theme (Taylor et al, 2001, p27).

In the light of this experience, and following the publication of the “Agenda 2000” document, the 1999 SF Regulations have strengthened further the requirements for the inclusion of the two horizontal themes in the 2000-06 programmes, making them more systematic and extensive. Council Regulation 1260/1999 relating to the SF states that in the “efforts to strengthen economic and social cohesion, the Community also seeks to promote the harmonious, balanced and sustainable development of economic activities, a high level of employment, equality between men and women, and a high level of protection and improvement of the environment. [...] Efforts should in particular integrate the requirements of environmental protection into the design and implementation of the operation of the SF and help to eliminate inequalities and promote equality between men and women.”

The integration of environmental issues as a horizontal theme in the 2000-06 programming period is articulated around a comprehensive framework, with environmental considerations featuring under most of the main headings addressed by the Regulations: programme preparation, content, monitoring, evaluation and information. The Vade mecum and other Commission Working Papers and Technical Documents further specify the regulatory requirements and suggest methods for compliance.

Thus, many programmes under the current period include projects that relate explicitly to environmental sustainability, such as projects promoting eco-industries. These so-called ‘positive action’ projects have an important role to play in addressing attitudes and changing perceptions of those involved in managing and implementing the programmes. However, they are only one component of the overall aim of the Commission, which is to ‘mainstream’ these horizontal themes, integrating them across all stages of programming including in monitoring and evaluation, and into all policies pursued. Thus the two concepts are both necessary and complementary, with ‘positive action’ projects paving the way for more comprehensive mainstreaming.

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<sup>1</sup> Taylor S, Polverari, L and Raines, P (2001): *Mainstreaming the Horizontal Themes into Structural Fund Programming*, IQ-Net Thematic Paper 10 (2), European Policies Research Centre, University of Strathclyde, Glasgow [http://www.eprc.strath.ac.uk/ignet/downloads/IQ-Net\\_Reports\(Public\)/10.2Horizontal%20Themes.pdf](http://www.eprc.strath.ac.uk/ignet/downloads/IQ-Net_Reports(Public)/10.2Horizontal%20Themes.pdf)

There were also other key changes to the workings of the programmes between the previous and current periods. One of the main changes involved delivery, and the introduction of partnerships that encompass a wide range of economic, social and environmental actors. Environmental impact legislation was also strengthened between the two programming periods, further reinforcing the move towards more comprehensive impact assessment. At the project level, the requirement for cost benefit analyses of large projects has also confirmed this commitment.

There were also changes in the way that the Commission can impose its 'will' in different national and regional contexts, for example, through the designation of the Natura 2000 sites. This change in the 'balance of power' between the Commission and the national / regional authorities is reflected in the Commission's capacity to influence member state management structures, procedures and policy, and its greater involvement with managing authorities.

These changes have been implemented to differing degrees in the different member states, partly due to the different 'starting positions', and partly as a function of the willingness of national and regional authorities to embrace the changes. The case studies in the evaluation reveal to some extent the regions' reaction to these changes, through assessing the measures / programmes from the two different periods.

### ***DG Empl policy***

The work of DG Empl is set against the backdrop of the European Employment Strategy (EES), an EU policy initiative that aims to influence the employment strategy of member states. Title VIII of the Amsterdam Treaty lays down the principles and procedures of a co-ordinated European Employment Strategy (EES). The Strategy involves drawing up annual European Employment Guidelines at the Community level. Each year, the Guidelines have to be translated into National Action Plans for Employment (NAPs) by each Member State. The NAPs are analysed by the Commission and the Council, and the results are presented in a Joint Employment Report, whose findings are the basis for conclusions to be drawn on reshaping the Guidelines and country-specific Recommendations for member states' employment policies.

Following the Luxembourg Jobs summit in November 1997, it was agreed that the EES should be built on thematic priorities, grouped in four pillars: Employability, Entrepreneurship, Adaptability and Equal Opportunities. Therefore, all DG Empl's programmes are developed within the context of this overall EES. It aims to influence national employment strategies by acting as a guide to developing strategies that are in line with the EU's employment priorities.

Therefore, although their policy documents don't speak of SD as such, the issues that DG Empl are treating have the potential to influence positively both human and social capital, through areas such as: employment and the quality of employment; gender issues; equity; and trust and building social relations. The recent Communication on the local dimension as a horizontal priority for all ESF programmes also reinforces these interests ("Acting locally for employment: A local dimension for the European Employment Strategy", 2000).

### ***DG Fish policy***

It has become apparent in the last few years that the fisheries sector in the EU is presenting an important challenge for sustainability. In March 2001, the European Commission adopted a Green Paper on the future of the Common Fisheries Policy

(CFP), with the aim of stimulating debate on its reform. The Green Paper recognised that in European waters, too many fish are being caught too young, which was hindering the renewal of fish stocks. The Paper suggested different options on how to ensure the sustainability of the fisheries sector in the future.

Following extensive consultation on the Green Paper, the Commission adopted its “Communication on the reform on the CFP (“Roadmap”)” in May 2002. This package of reforms aims to reduce the fishing effort, restructure the fisheries sector, and preserve fish stocks for the future, through a series of measures which include revising the way in which annual quotas are set, to take more account of safe biological limits.

These reforms are recognition that the current fisheries policy is unsustainable in terms of the depletion of fish stocks (natural capital). However, in order to limit the damage to human and social capital in the regions most affected, it will also be necessary to implement viable schemes to reintegrate those people dependent upon fisheries, into other sections of the economy.

As these examples have illustrated, the evolution of the policy debate relating to sustainability issues, and the increased emphasis on environmental themes have opened up the debate and changed perceptions on how to address sustainability in EU policy, and particularly relating to the SF. This has led to a number of initiatives as well as a series of guidelines that deal with sustainability issues of relevance to regional development.

## **Past Initiatives**

### ***DG Regio initiatives***

As sustainability issues became a higher priority on the policy agenda, so the Commission has initiated studies, research and pilot projects to examine ways in which their policies can take more account of SD. In 1996, DG Regio commissioned research by ECOTEC on “Encouraging sustainable development through Objective 2 programmes”, looking at how Objective 2 regions could integrate the notion of sustainable development into projects. The research involved case studies of 20 best-practice examples, involving projects that could be taken as showcases for sustainable development at the local level. Their focus was the link between environment and the economy (natural and manufactured capital), taking real-life examples to illustrate potential win-wins. As was common at the time, the definition of ‘sustainable development’ was mainly confined to economy-environment sphere, rather than a broader interpretation that encompasses all aspects of wealth creation (economic, social and environmental). However, such an exercise could be usefully repeated using the more commonly accepted understanding of SD that has now been adopted, integrating both social and human capital as well.

Following on from this work, in 1997 DG Regio commissioned the “Thematic Evaluation of the Impact of the Structural Funds on the Environment”. This evaluation developed a methodology to test the environmental consequences of the SF, as well as the degree to which the SF programmes are designed to move a region’s economy towards a more sustainable pattern of development. The main focus was again on economic development and its environmental impacts, and consequently the evaluation did not fully address the social dimensions of regional development.

It should be noted, however, that despite concerns to promote sustainable development, and the desire to integrate environmental issues as a horizontal objective in all SF programmes, it is apparent that a significant proportion of SF money

still goes on road-building programmes, that run contrary to supposed sustainability objectives. There is clearly some work still to be done, to ensure that sustainability principles enshrined in EU policy documents, are translated into practice on the ground, particularly regarding SF spending.

Regarding other DG Regio initiatives, the concept of SD has also been translated into the European Spatial Development Perspective (ESDP). This aims to provide a framework to co-ordinate spatial policies and policies with a spatial impact towards “a balanced and sustainable development of the territory of the European Union, ensuring economic and social cohesion, the conservation and management of natural resources and cultural heritage, and a more balanced competitiveness of the European territory”. The ESDP also states that “in accordance with United Nations Brundtland report, sustainable development covers not only environmentally sound economic development, which preserves present resources for use by future generations, but also includes a balanced spatial development”. This can only be provided by the reconciliation of a triangle of objectives related to the economy, the environment and society, which the recently established ESPON Observatory aims to monitor and evaluate.

Other relevant policy initiatives from DG Regio include the communication on “Sustainable Urban Development in the European Union: A Framework for Action”, published in 1998. This signalled the importance of activities that support local sustainability, particularly of relevance to the ‘urban-oriented’ Objective 2 programmes. Linked to this, DG Env also instigated a new initiative in 2000 relating to local sustainability, through its expert group on the urban environment: “Towards a local sustainability profile: European common indicators”. This recognises the need to take an integrated approach to the issue of urban development, looking at economic, social and environmental indicators to monitor sustainable development at the local level.

#### ***DG Research initiatives***

For its part, DG Research has recognised that the concept of sustainable development is little understood and even less practised. Through a number of initiatives launched during the 5th Framework Programme, they aimed to fund research that looked into the formulation of the concept, its implications and its operation in different contexts. Given that the concept of SD required judgements and choices, DG Research saw that projects could help assess the alternatives at stake. The main thrust of the EU RTD programme is to support the implementation of EU policies. In this context, especially concerning structural policies, two directions of research have been of key importance:

- To contribute to a better common understanding of the meaning of SD, especially of what might be called Sustainable Regional Development
- To develop practical tools for putting into operation effective policies in this direction, at the European and other levels.

The key relevant project funded by DG Research, but in close co-operation with DG Regio, was the IRS study entitled “Regional Pathways to Sustainability” (2000), which aimed to assess and compare the experiences of twelve regions conducting pilot projects on methods to promote sustainability through SF programmes. The research inputs aimed to help explain the findings and to suggest ways of overcoming the obstacles encountered, taking into account findings from other SD research projects. One of the key findings was that there is no single ‘blue-print’ for sustainable regional development. A pathway towards SD must be conceived taking into account the local context, in accordance with all regional stakeholders. However, there were also

common lessons to be learnt in promoting SD through the SF, including the importance of partnerships, local participation, exchange and capacity building.

Other relevant projects funded by DG Research include:

- SUDECIR (“Sustainable Development of European Cities and Regions” 1996-1998), a comparative study on sustainable regional development, taking three European regions as case studies in the Netherlands, Austria and Greece. The project developed a methodology to draft an “inclusive” regional SD plan, in which local stakeholders are given an important role in defining local development objectives and strategies. The method includes the identification of key sectors for sustainable development policies in the specific region, the setting of detailed goals and the selection of appropriate indicators. The project emphasised that the concept of sustainability at a local level is defined through an on-going process, which involves understanding and formulating the concept, defining the problems and dealing with them in concrete terms; each region’s response will be individual.
- Regio-Net, a thematic network with the overall objective of providing an integrated approach to support the implementation of sustainable development in regions across Europe. The first workshop in September 2002 will address the theme of sustainable development and the Structural Funds;
- Pastille, funded under the City of Tomorrow key action, a project which aims to develop indicators of sustainability at the city level, in the framework of LA21. This project will help in monitoring progress towards SD at the local level.

It is important to emphasise that the concept of SD is still relatively new, and there is still therefore the need for research, dissemination and exchange of experience relating to its application, particularly in terms of regional development.

### ***DG Empl initiatives***

In addition to its regular ESF programmes that focus on employment policy and job creation at the local level, DG Empl has also launched a number of other initiatives that are particularly relevant to the issue of sustainability, given their focus on bottom-up processes as a means of building on human and social capital.

The first of these is “The Preparatory Measures for a Local Commitment to Employment”, which aims to demonstrate the potential for employment policy and job creation at the local level within the framework of the EES. A first phase of 33 experimental projects was financed during 2001. The projects divided into two groups: those that explored how local authorities can lead local action for employment in partnership with other actors through Local Action Plans (LAPs) in the framework on the EES, and those concerned with identifying and disseminating good practice concerning local actions on employment. Among the findings, the evaluation of this first phase, complete in May 2002, has revealed the importance of raising awareness about local employment initiatives among stakeholders, strengthening articulation between actors at different levels and across policy areas, and creating and sustaining successful partnerships.

The second DG Empl initiative of particular relevance to the current study is the Local Social Capital (LSC) Pilot Project that was launched by DG Empl in 1998, as an action under Article 6 of the ESF. The Pilot comprises 30 projects with a particular focus on

micro-projects: those supporting social cohesion or reinforcing local networks, and those providing support for the start-up of micro-enterprises. Although the project is still on-going, the interim report shows promising results, in terms of the involvement of priority groups, the proportion of positive outcomes, building local capacity, and mobilising additional financial, human and material resources. The projects appear to be having a strong catalytic effect, enhancing social capital in the areas covered by the projects.

Two key factors stand out as of crucial importance for the success of the LSC approach. The first concerns the cohesion and capacity of the partnership (the internal characteristics of the partnership), and the second relates to the external characteristics of the partnership and especially its delivery strategy. The findings from both these two examples are likely to be important for the current study, in evaluating the SF programme management structures, and their potential contribution to SD.

## **Guidelines**

### ***DG Regio guidelines***

DG Regio has published a range of guideline documents for those involved in SF programmes, aimed at the various stages of implementation. At the beginning of this process is the ex-ante evaluation, which has been considerably strengthened in the new Regulations. As part of its methodological Working Paper series, DG Regio has produced a 'hands-on' practical guide to "The ex-ante evaluation of Structural Fund interventions", aimed at national, regional or local authorities in charge of programming the 2000-06 SF. Its emphasis is on a constructive dialogue between those responsible for drafting the Plan and the evaluation experts, to arrive at a clear understanding of the strategy and financial resources proposed.

The SF Regulations also explicitly require an ex-ante appraisal of the environmental situation of the region concerned, as well as an appraisal of the environmental impact of the strategy and operations provided for in the plan. As a response to this requirement, DG Regio published a handbook on "Environment and Sustainable Development – A guide for the ex-ante evaluation of the environmental impact of regional development programmes" (May 1999, 'Evaluation and Documents' series). The aim was to stimulate thought and discussion between partners at the ex-ante stage, so that environmental sustainability could be fully integrated at the formative stages of programme development. The Guide presents tools that partners can apply in their environmental appraisal. However, practice has shown that the appraisal is not always implemented in the most thorough way, and findings are not necessarily acted upon.

Further guidelines have also been developed to assist authorities in drawing up their programmes, particularly relating to developing indicators. These have included "Indicators for Monitoring and Evaluation, an Indicative Methodology", (Working Paper 3) and a handbook on how to estimate and monitor the employment results and impacts of Structural Fund interventions ("Counting the jobs – How to evaluate the employment effects of Structural Fund interventions" 1997). The first of these documents has been comprehensively reviewed in another paper prepared for the current study. The second takes a practical view on how to estimate job impacts, taking account of dead-weight, displacement and multiplier effects. However, with an increased emphasis by the SF on SD, programmes should not be aiming for employment impacts "at any cost". Job creation is an important goal of any economic development programme, but this aim should be coupled with the sustainable development of the region. This may imply that projects funded do not necessarily

generate the maximum number of jobs, but in compensation, promote sustainable economic development, rather than development that is detrimental to aspects of natural, human or social capital.

Again in the Working Papers series, DG Regio has published guidelines for “The Mid-Term Evaluation of Structural Fund Interventions”. This emphasises the fact that the mid-term evaluation is not an end in itself but a means to improve the quality and relevance of programming, as part of the mid-term review. It provides an opportunity to identify reorientations to the programming which may be needed to ensure the achievement of the original objectives. It is the essential input into the mid term-review and is inter-linked with the performance reserve.

The guidelines detail how the mid-term evaluation should be organised and what it should contain. The expressed aim of the evaluation is to revisit the main elements of programming examined in the ex-ante evaluation, to review them for continued relevance, to assess interim results and to review likely impacts. It will also examine results against the indicators agreed for the performance reserve. The key stated outputs will therefore be a review of the appropriateness of the programme strategy, coupled with an assessment of how well the form of assistance is performing in reality.

However, given that environmental sustainability is a stated horizontal theme throughout the programme, it is important that the mid-term evaluation also assesses whether this has been the case, not only through ‘positive action’ projects, but also through more wide spread ‘mainstreaming’. Results from the current study will inform recommendations on how the mid-term evaluation can take full account of a programme’s consideration of environmental sustainability.

In the mid term-review, it will also be important to look at the broader concept of sustainable development, encompassing both environmental and societal considerations. In the current “Guidelines for programmes in the period 2000-2006”, these two elements tend to be separated out as the “two horizontal principles of sustainable development and equal opportunities”. However, compliance with the principle of sustainable development is defined as “environmental considerations, and in particular compliance with Community environmental and nature protection legislation, much be incorporated into the definition and implementation of measures supported by the Structural Funds and the Cohesion Fund”. Naturally, programmes have responded to the narrower definition of sustainable development presented in these Guidelines as well as in the Vade mecum, rather than taking a broader definition of SD that is in current usage in the present study. Recommendations from this study can help to steer programmes to take a more comprehensive view of SD, and to encourage programmes to mainstream SD principles into all aspects of programming.

However, the two horizontal themes that have been emphasised in the current round of SF programmes can give some cause for optimism on the future promotion of SD within the SF. Economic development actors have been encouraged through the SF to integrate two consistent perspectives into their practices – an environmental perspective, and a social perspective (focused, admittedly, on gender equality issues rather than broader human / social capital concerns). Although the interconnections are not being explicitly made as yet, the mainstreaming approach has the potential to deliver a change in which both are informing the nature and delivery of economic development activities on a more routine and integrated basis. It is exactly in this direction that the present study aims to influence both current programmes through the mid-term review, as well as future programmes particularly in the candidate countries, post 2006, in order to yield better results in terms of more sustainable SF programmes.

Also relating to DG Regio guidelines, it is also worth noting the absence of specific guidance targeted at Cohesion Fund (CF) projects. Given the CF's emphasis on large-scale infrastructure projects, particularly transport, it would be advisable for DG Regio to have a greater influence on the direction and emphasis of these projects. Currently, the CF programmes seem to rely heavily on national guidelines to steer CF investment, which has inevitably lead to comprehensive road-building schemes in parts of the CF countries. It would seem that particularly for these countries and the Objective 1 regions, but equally for Objective 2 regions, one of the key issues for SD is transport, manifest to a large degree in road-building programmes, that bring traffic congestion and increased emissions. This is certainly an important issue that DG Regio must tackle, to address the challenge of supporting regional development programmes that improve transport infrastructure taking SD principles into account, not based on road-building.

If DG Regio takes this line, it may indeed find itself in a position where national economic development strategies point to a transport policy based on road-building, that runs contrary to its own policy on 'boycotting' road-based projects. In this case, DG Regio would be advised to make more explicit its principle of 'additionality', emphasising the fact that these projects would be funded anyway without SF/CF investment. A 'better' use of Community funds would be to finance those transport-related projects that may otherwise not receive adequate funding (metro systems, light railway systems, etc ....). The transport issue is certainly a key challenge for the SF, and is set to remain high on the agenda post-2006, given the quality of transport infrastructure in the accession states, and the likely pressure on the Commission to invest in this area.

#### ***DG Agri Guidelines***

As strongly as in any other field of intervention, the area of rural development presents key issues for sustainable development, where the inter-linkages between the four capitals are ever present. The overall aim of DG Agri interventions to strengthen the economic viability of rural areas is goes hand in hand with the desire to preserve their social and environmental functions. A range of social benefits stem from promoting rural employment opportunities, diversifying economic activities and promoting local products, services, craft activities and agri-tourism. Similarly, preserving environmental quality is often a precondition for developing lasting economic potential in rural areas. The scenic value of rural landscapes can be a key ingredient for enhancing its attractiveness to businesses, local communities, and tourists.

Although there can be beneficial synergies between the three objectives (economic, social and environmental), they are not always mutually supportive, and can at times compete with each other. DG Agri have made it a priority to integrate into their evaluation processes, an understanding of the potential conflicts between these three elements of their programmes. Thus for the 1994-1999 period, they have produced a series of guidelines focusing on the 'ex-post' evaluation of measures under Reg 950/97, Reg 951/97 and Objective 5b, which set out common evaluation frameworks and questions to consider, that treat these three aspects and the interrelationships between them.

Similarly, for the 2000-2006 period, DG Agri have also been active in developing guidelines that will assist in evaluating the results and impacts of rural development measures, funded both under the EAGGF and SAPARD, as well as a document of common evaluation questions with criteria and indicators. In particular it is interesting to note that the evaluation of programmes supported by SAPARD also pays attention to the implementation mechanisms of these programmes. This is likely to be a key

issue for the current evaluation, as many of the principles associated with SD are bound up with bottom-up processes and will rely on acceptance of the concepts at the 'lowest' level of management, for their successful integration into the spirit of the programme as a whole.

This approach is also adopted in the evaluation guidelines for Leader +, published in December 2001, aimed at national and regional authorities and independent evaluators in the mid-term evaluation. The guide aims to go beyond approaches to evaluation mainly focused on results and impacts, by extending the scope of the evaluation to the distinctive implementation processes, and their contribution to the overall effects of the Initiative. The Leader + method differs from 'traditional' rural development policies in its use of active partnerships ('Local Action Groups') in participatory actions. The aim is to drive economic development from the bottom up, by exploiting the endogenous potential of rural areas. It is therefore an interesting model of how economic development can be promoted at the local level, building on the principles of SD by taking into consideration not only economic, but also environmental and social concerns, with a particular interest in social capital.

#### ***DG Empl Guidelines***

DG Empl has also drawn up comprehensive guidelines for "Systems of Monitoring and Evaluation of ESF Assistance in the period 2000-2006". It focuses attention on the definition and system of indicators that need to be developed for monitoring, but also pays attention to the mechanisms through which the programmes have been implemented. Although the components of SD are not mentioned explicitly, the impact of measures on social and human capital is implicit in the proposed evaluation framework.

#### ***DG Env Guidelines***

With a particular interest in environmental sustainability, DG Env has been keen to try and influence the level of integration of environmental issues into SF programmes. To address this issue, they produced a handbook for authorities within member states that are responsible for drawing up and managing SF programmes, as well as for those authorities with responsibility for environmental issues. The aim was to give these two groups a thorough review of the environmental and sustainable development dimensions of the Structural Funds process, for example, by questioning whether transport infrastructure forms part of an integrated transport plan, or whether road-building includes 'park and ride' schemes.

One of the key messages of the Handbook is that co-operation between the two bodies is the key element of this process, and crucial to its success. However, the style and methods for such co-operation must be flexible, since they will have to fit into a variety of national and regional systems.

Unfortunately, the handbook has not been that successful in achieving its aims: partly because of timing (the handbook was issued at the end of 1998, when programmes were already well underway); partly because of the two bodies' uncertainties about their obligations; and partly due to a certain unwillingness to translate the principles into practice. This last factor has been influenced by the 'maturity' or 'receptiveness' of the programme managers (likened to 'fertile' or 'unfertile' soil). There have been exceptions to this, for example in Italy, where a long-standing partnership contributed to an acceptance and application of the guidance. But in general, the Commission must address the issue of 'unreceptiveness' to guidelines or handbooks, and try and build support for new initiatives at the grass roots level, if new principles relating to SD

are to be adopted by programme managers, local stakeholders and ultimately EU citizens.

### **Summary**

Across the Commission services, there has been a raft of policy documents that confirm the EU's interest in the principles of sustainable development. Although initially focused on environmental sustainability, there is a growing acceptance of the broader definition of SD that encompasses not only economic and environmental concerns, but also social/human aspects as well. In the field of regional development, a number of initiatives have been launched, notably by DGs Regio, Empl and Research, that have aimed to elucidate the concept of SD, and how it can be applied in the context of the SF. Similarly, recent guidelines relating to evaluation have taken account of the importance of SD principles, and how they might be more comprehensively integrated into SF programmes. This has particularly been in the context of Leader +. It is against this backdrop that the study has assessed the contribution of the SF to SD, and developed recommendations relating to the mid-term review on ways to improve the SD component of current programmes, and for programmes post-2006 on how to take a more sustainable approach to regional development.

## REFERENCES TO ANNEX 1

### GENERAL

- Structural Fund Regulations for 2000-2006
- “Vade-mecum - Plans and Programming documents for the Structural Funds, Objectives 1, 2 and 3 – 2000/2006”
- “The Structural Funds and their coordination with the Cohesion Fund: Guidelines for programmes in the period 2000-2006”
- Commission Communication on Structural Indicators

### DG REGIO

- ECOTEC study on Objective 2 and sustainable development (“Encouraging Sustainable Development through Objective 2 Programmes: Guidance for Programme Managers”)
- Taylor S, Polverari, L and Raines, P (2001): *Mainstreaming the Horizontal Themes into Structural Fund Programming*, IQ-Net Thematic Paper 10 (2), European Policies Research Centre, University of Strathclyde, Glasgow [http://www.eprc.strath.ac.uk/ignet/downloads/IQ-Net\\_Reports\(Public\)/10.2Horizontal%20Themes.pdf](http://www.eprc.strath.ac.uk/ignet/downloads/IQ-Net_Reports(Public)/10.2Horizontal%20Themes.pdf)
- The Thematic Evaluation of the Impact of the Structural Funds on the Environment
- Environment and Sustainable Development – A Guide for the ex-ante evaluation of the environmental impact of regional development programmes
- “Indicators for Monitoring and Evaluation, an Indicative Methodology”, Working Paper 3
- “The Ex-Ante Evaluation of the Structural Funds interventions”, Working Paper 2
- “Counting the jobs – How to evaluate the employment effects of Structural Fund interventions” (Series: Evaluation and Documents No. 1 January 1997).

### DG EMPL

- Guidelines for systems of monitoring and evaluation of ESF assistance in the period 2000-2006, July 1999
- Communication from the Commission “Acting Locally for Employment: A Local Dimension for the European Employment Strategy”, 2000
- “Local Social Capital Pilot Project” (1998, ongoing) financed by Article 6 of the ESF

- “The Preparatory Measures for a Local Commitment to Employment”

#### **DG AGRI**

- Guidelines for the ‘ex-post’ evaluation of measures under Reg 950/97, 1999
- Guidelines for the ‘ex post’ evaluation of Objective 5b, 1999
- Guidelines for the ‘ex-post’ evaluation of measures under Reg 951/97, 1999
- Evaluation of rural development programmes 2000-2006 supported by EAGGF
- Common evaluation questions with criteria and indicators, 2000
- Guidelines for the evaluation of RDPs supported by Sapard, 2001
- Guidelines for the evaluation of Leader + Programmes
- Common indicators for monitoring RDPs 2000-2006
- A framework for indicators for the economic and social dimensions of sustainable agriculture and rural development.

#### **DG ENV**

- “Towards Sustainability – A European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development,” Official Journal No C138, 17 May 1993, CEC, Brussels
- A Handbook on Environmental Assessment of Regional Development Plans and EU Structural Funds Programmes, produced by ERM for DG Env, August 998
- “Towards a Local Sustainability Profile, European Common Indicators”

#### **DG RESEARCH**

- SUCEDIR project
- IRS Study – Regional Pathways to Sustainability
- Regionet thematic network
- Pastille

#### **DG FISH**

- Green Paper on the future of the Common Fisheries Policy, March 2001
- Communication from the Commission on the reform of the Common Fisheries Policy (“Roadmap”), May 2002

## **ANNEX 2: A SUMMARY OF INDICATORS USED IN THE CASE STUDIES**

The following table summarises the range of indicators selected in each of the case studies to represent trends in the four different types of capital. The variation in selected indicators is smallest for manufactured capital, where GDP per capital is taken as the 'classic' indicator, and largest for social capital, reflecting the range of concepts and regional characteristics captured by the idea of 'social capital'. This range also partly reflects the relative infancy of debate within regional policy and regional policy evaluation as to the meaning and relevance of social capital as a construct, and the lack of resolution as to its specific and relevant character.

These indicators can be compared with the range of base indicators suggested from the review of the capitals model and indicator literature, presented in Volume 2. Those selected show a strong level of consistency with those previously identified.

### Overview of the indicators used to illustrate the four capitals in each case study

Key: + or – show the overall result, not the trend in the indicator. ? = uncertain

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
<b>Manufactured Capital</b>																			
<b>The economy</b>																			
GDP per capita	+		+		+	+	+	+	?	+	+	+	+	+		+	+	+	
Gross Fixed Capital Formation		+																	
Investment ratio / total investment / public- private investment	+		+			+		+	+	+		+	–						
Evolution of exports and imports					+														
Economic growth in 'soft' sectors (fashion, media ..)				+															
Annual inflation rate										+									
Industrial structure (GAV per sector)											+					+	+		
<b>Employment</b>																			
Employment by sector													?						
<b>Income</b>																			
Change in real income		+																	
<b>Transport</b>																			

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands	
Transport (road and rail infrastructure) Km of roads per km2					+															+
Time of access to main markets							+													
Transport – travel times and average speeds														–				–		
<b>ICT</b>																				
Percentage of the population connected to the internet																				+
Number of computers per population																				+
Cable coverage							+													
<b>Agriculture</b>																				
Agriculture produce															–					
Number of pigs and other livestock															–					
<b>Tourism</b>																				
Size of the tourist and recreation sector															+					
<b>HUMAN CAPITAL</b>																				

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
<b>Employment and unemployment</b>																			
Number of people employed / Employment growth and rates				+				-	+									+	-
Unemployment rate (including female, youth and LTU)	+	+	+		+	+				-	-		+	+			-		
Women's employment rate						+	+												
Creation of new jobs, particularly high skill jobs												?							
<b>Education and Training</b>																			
Levels of education and vocational qualifications of working (and unemployed) population				+	+	+	+	+	+					+	+	+	+	+	+
Supply rate vocational training places		+																	
Creation of new educational opportunities												+							
Participation rates (education and training)										+				+		+	+		
<b>R&amp;D</b>																			
Public/private R&D expenditure (per GDP)	+		+		+														
Number of patent applications	+		+				+												

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
Number of agreements between companies and public centres and total funding as % of total funded research							+												
<b>New businesses</b>																			
Number of business start-ups and close-downs per 10,000 employable people / number of new companies		+			+								+						
Size of the knowledge-based industry in services														?					
<b>Health</b>																			
Improvement of human health								+	+										
<b>SOCIAL CAPITAL</b>																			
<b>Wage differentials / poverty</b>																			
Evolution of poverty rates						-		-	-	-									
Disparity between average income of highest & lowest deciles											-			-		-	-		-
Male / female wage differentials																			

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
Number of social welfare recipients	–	+	–																
Levels of deprivation														+				+	
<b>Spatial impact of poverty</b>																			
Districts with special development needs		+																	
Spatial concentration of disadvantage / Gini coefficient per province and between provinces					–								–						
Spatial distribution of neighbourhoods with highest concentration of non-nationals, and where those with the highest incomes				+															
Out-migration of young people			–																
<b>Gender inequalities</b>																			
Share of women in full time jobs / unemployed	–	?																	
Women's pay as a proportion of average pay							+												
<b>Networks / Cooperation</b>																			
Number of cooperative, intermunicipal projects and strategies		+																	

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
Number of public / private sector agreements					+														
Population covered by Agenda 21 processes							+												
% of the population that belongs to socio-cultural associations							+												
Creation of voluntary associations and social networks												-							
Participation and cooperation between all local parties and interests in agricultural restructuring.														-					
Improvement of governance capacity								+	+										
Involvement in environmental issues, and in business creation									+										
<b>R&amp;D</b>																			
Number of patents / R&D investment					+														
<b>Health</b>																			
Access to health centres					+					+	+								
Availability of hospital beds						?													
<b>Precarious employment</b>																			

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
Average duration of employment contracts					?														
Company survival rates					?														
Sectoral diversity / number of businesses																			+
<b>Crime</b>																			
Crime rates													-						
Youth criminality																-	-		
<b>Welfare expenditure / public servies</b>																			
Access to basic services							+					?							
Social protection expenditure						+													
Improvements in communication infrastructure						?													
<b>Territorial dev.</b>																			
Increase in the attraction of rural territories								?											
Polycentric development																			+

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands	
<b>NATURAL CAPITAL</b>																				
<b>Climate change</b>																				
CO <sub>2</sub> emissions	+		+											-						
<b>Air quality</b>																				
Air quality (SO <sub>2</sub> , NO <sub>2</sub> , PM 10, lead, ozone, benzene benso-a-pyrene)		+	+							+						-	-			
<b>Biodiversity</b>																				
Stocks of endangered species	-		-																	•
No. of hectares protected with management plans (and average size)					+	+	+			+		+			+					
% of cultivated area with environmental restrictions							+													
<b>Water</b>																				
Surface / inland water quality		+							+					-						
Value per drop of water					-															
Industrial water consumption / water consumption per hab.						-		-			-									
<b>Waste</b>																				
Quantity of collected waste (kg /cap. /GDP)				+		-	-													+

	Germ CSF	North Rhine West- phalia	Sax- ony	Ant- werp	Anda- lucia	Cata- lonia	Navarra	Midi- Pyr.	Nord Pas de Calais	Greece CSF	Thess- aly	Cal- abria	Cam- pania	Ire- land CSF	Gelder- land	Portu- gal CSF	Norte	West Mids	Vastra Gota- lands
<b>Land use</b>																			
Green areas (ha / hab)				+															
Evolution of land occupation for urban uses in coastal areas (km2)					-														
Evolution in consumption of natural & agri. land								+	-										
Congestion & pressure on natural resources in urban areas & coasts (transport, tourists ..)													-						
Building / Land recycling (brown field vs green field development)		+		+														+	
<b>Energy</b>																			
Evolution of energy use per capita / per GDP		?					-	-	-							-	-		
<b>Resource efficiency</b>																			
Improved efficiency in manment & use of natural resources (forests, H2O, bathing sites. )										+	+	-	-					-	
<b>Soil pollution</b>																			
Soil pollution (emissions of nitrate, phosphate and ammonia)															-				

## ANNEX 3: A DISCUSSION OF CRITICAL THRESHOLDS

### INTRODUCTION

To evaluate the impact of a project or programme on sustainable development, an important aspect is to understand whether the project or programme impacts on any critical assets or threatens particular thresholds beyond which the loss of a critical asset occurs.

There is, however, no single defined set of critical thresholds. Some are addressed (in part) by legislation, some are noted by scientific research and formalised by panels, others are arguably definable and defined by stakeholder views as to what is truly acceptable, and others are not defined yet.

While it is not possible to define mechanistically a set of thresholds that can act as a checklist for appropriate practice, it is possible to note a series of thresholds – at the legal, scientific and other levels – that can be guides. This note summarises the status of thresholds and should be of use to SD evaluation. It is important to note that in some areas complying with legal or scientifically established thresholds is not a sufficient guarantor of sustainable development. A stakeholder assessment of acceptable thresholds is therefore required so as to obtain a working definition of thresholds, backed up, where possible, by existing legislative and/or scientific threshold values.

The following discussion describes the main thresholds – noting legal, additional scientific thresholds and a broader discussion on thresholds related to stakeholder knowledge and concern for impacts.

### THRESHOLDS

#### Legal thresholds

Environmental legislation – EU Directives, regulations, decisions, and Member State and regional legislation – define acceptable emission values (e.g. for an installation – electricity generation, or incineration), ambient quality standards, national emissions limits, and requirements for best available techniques and technologies that provide moving threshold values – as well as the need for Environmental Impact Assessments (EIAs), and on a broader policy level strategic environmental appraisals (SEAs). In addition there are planning implications of legislation (eg under the Seveso II Directive). These clearly do not cover all environmental issues nor fully take into account true impacts, nor indeed are they easy to translate into operational terms for SD assessments. Nevertheless they provide a valuable tool for exploring the impacts of a programme and project. Table A.1 in the Annex notes details of some key legally based thresholds. Key examples include:

- The Seveso II Directive on hazardous installations requires, inter alia, that a safe distance is maintained between hazardous facilities and residential areas, transport corridors etc. This is a recently implemented directive and certainly likely that some past projects will run counter to the philosophy/requirements of this Directive;
- Fuel quality directives affect the quantity of lead and sulphur in fuels – that have an important influence on the emissions from particular vehicles, though the concentration of traffic and proximity of traffic to residential areas or nature sites. Emissions can have important impacts despite compliance with the directives.

Importantly, increased traffic can lead to significant degeneration of air quality, despite quality fuels, and despite vehicle emissions standards being met. These combined impacts are often noted by stakeholders, and certain scientific information exists regarding risks of exposure.

- Landfill Directive, packaging waste directive, (Waste) incineration directives, Integrated Pollution Prevention and Control Directives – affect how waste should be dealt with – eg where what type of waste should go where (inert waste such as building rubble, domestic waste, hazardous waste). Importantly, the directives tend to deal with only certain sizes of installations, and smaller installations have more relaxed limits, and some have no limits. This can be important for small waste incinerators.
- Water quality directives – drinking water, bathing water, surface water, ground water, shellfish water and waste water treatment directives – deal with, inter alia, “acceptable” water quality, and acceptable pollution concentrations in effluent. These can be important for agriculture and pesticide and fertilisers leach into ground water and pass on to surface waters and coastal waters as well as, if not pre-treated fully, into drinking water. Importantly some issues are not covered by existing legislation (e.g. hormones in water) that can have important impacts that are being discovered by science, and raised by stakeholders (see later discussions).

Many of the projects funded under the structural funds – mainly those that support infrastructure developments (roads etc), are required to implement environmental impact assessment and produce an EIA report. The EIA report should contain information on the environmental impact of the project, and will, for example note whether the project (e.g. road) will impact on Natura 2000 sites or sites of special scientific interest / habitats.

For the Seveso Directive, it is important to note that the planning distances apply not only to new or significantly upgraded installations, but also for the development of residential areas, green spaces and transport corridors (main and local) which might be near hazardous installations (eg chemical plant, refineries).

Note for evaluators – there is no need to check whether the SF projects comply with legislation as they should, though of course, interviews exploring the question can help highlight any breaches, or near breaches which might be interesting to note. Evaluators should ask questions as to whether there are any impacts and/or concerns even if no legislative non-compliance. In some areas there are no legal problems, but there are real impacts that might or might not affect thresholds not defined in legislation but scientifically important (see section 2.2), or important for the stakeholders (see section 2.3).

### **Scientific thresholds**

In many areas, legislation has not been able to truly specify “critical thresholds”; science however can define various thresholds, noting areas where these are critical (though the political debate may mean that scientifically critical thresholds are not necessary translated into policy or legal (critical) thresholds. And in some areas science can establish relationships between exposure and impacts though there is no definition of what is a “critical threshold”. Indeed in some cases there are no “critical thresholds” but only increasing risk – arguably equally important to deal with, though often difficult to define, or get agreement on. Scientific thresholds include:

- maximum temperature change rate (oC per year) given the maximum species migration rates (km/yr).
- Greenhouse gas emissions levels that will stop additional contributions to global warming. These scientific thresholds suggest emissions reductions far greater than those agreed in the Kyoto Protocol - the International Panel of Climate Change (IPCC), states that a 60% reduction would be needed to address climate change, whereas the Kyoto protocol agrees to less than 10% reduction and these only from industrialised countries.
- Absorptive capacity of soils and lakes – of acidic emissions – before significant changes in land/water acidity takes place, with subsequent effects on flora and fauna (eg acidity levels reached such that fishlife disappears).

In some cases there are no scientific critical thresholds, but a scientific relation can be established – eg

- between particulate emissions and asthma/bronchitis, dioxin emissions and risk of cancer.
- between water quality and likelihood of digestive track impacts.

Here the issue is how to reduce the risks, and in some cases legislation includes emissions values (dioxin emissions), ambient/product quality (eg “acceptable” pesticide or dioxin quantities in milk) and seek to reduce this risk. Here the “precautionary principle” (eg take precautions to avoid known risks or possible risks) is key, and this can be an important tool within stakeholder discussions.

In addition there are clear physical thresholds – landtake and available land for landfill sites, size and biodiversity levels of nature reserves and species and habitats loss etc. In many areas while there is scientific fact, there may not be scientifically defined critical thresholds, let alone legal thresholds. In some of these cases, however, there are clear stakeholder preferences. In some cases the stakeholder concerns can encourage scientific research to allow scientific thresholds to be subsequently defined, and in some cases the stakeholder concerns can lead to new policies and legislation. In many cases, however, there are no scientific thresholds or legal thresholds.

#### **Other thresholds – SD defined by stakeholders**

As noted above there are many areas where legislation or science cannot define “critical thresholds”. In some areas scientific fact / quantitative information can however, be gathered that allow some measure of the issue. In other areas it is difficult to obtain quantitative facts, but stakeholders nevertheless feel that there are some unacceptable impacts – which can arguably be called stakeholder defined critical thresholds. These can include:

- Local traffic levels – as increased traffic can reduce the social fabric and increase risk of accident and pollution
- Emissions of pollutants – not only given a risk of non-compliance (eg incinerators), but also concern that the emissions standards will not offer complete protection.
- Proximity to landfills, waste water treatment plant or incinerators – objections can arise from concern of odour, accident, or simply the fact that house prices might be

affected, or indeed contribute to a feeling of being “second class citizens” (eg landfills are often sited next to poor areas and contribute to social exclusion)

- Building standards – materials use, conditions etc might not be regarded as acceptable
- Concern of impacts on nature – through road incursion, tourist habits
- Concern of impact on landscape – eg mining (peat, gravel, sand, etc).

It is important to therefore understand what the concerns are, which are critical, and which are significant. This contributes important information to the discussion of trade-offs across the different forms of capital.

Annex

Table A1: Legal Environmental Thresholds

	<b>Emissions Thresholds (emissions standards and total national/regional emissions)</b>	<b>Air quality thresholds</b>																																			
<b>Air – General</b>	<p><u>National Emission ceilings (2001/81/EC):</u> Sets emission ceilings for So2, NOx, VOCs and ammonia (NH3), but leaves Member States with the flexibility to determine how to comply with them. By 2010 Member States shall limit their annual national emissions of SO2, NOx, VOCs and NH3, for example (in kilotonnes):</p> <table border="1" data-bbox="474 646 952 917"> <thead> <tr> <th></th> <th>SO2</th> <th>NOx</th> <th>VOC</th> <th>NH3</th> </tr> </thead> <tbody> <tr> <td>Austria</td> <td>39</td> <td>103</td> <td>159</td> <td>66</td> </tr> <tr> <td>Belgium</td> <td>99</td> <td>176</td> <td>139</td> <td>74</td> </tr> <tr> <td>Germany</td> <td>520</td> <td>1051</td> <td>995</td> <td>550</td> </tr> <tr> <td>France</td> <td>375</td> <td>810</td> <td>1050</td> <td>780</td> </tr> <tr> <td>UK</td> <td>585</td> <td>1167</td> <td>1200</td> <td>297</td> </tr> <tr> <td>EU15</td> <td>3850</td> <td>6519</td> <td>6510</td> <td>3110</td> </tr> </tbody> </table> <p><b>IPPC (96/61/EC)</b></p>		SO2	NOx	VOC	NH3	Austria	39	103	159	66	Belgium	99	176	139	74	Germany	520	1051	995	550	France	375	810	1050	780	UK	585	1167	1200	297	EU15	3850	6519	6510	3110	<p><u>Air Quality Framework (AQFD) (96/62/EC)</u> A framework for ambient air quality management in the EU, providing for the establishment of new ambient air quality standards and objectives. Limit values and alert thresholds for various ambient air pollutants are to be set through daughter Directives, some of which will replace the existing EC air quality standards for sulphur dioxide and particulates, nitrogen dioxide and lead. The Directive itself does not create any precise air quality objectives, but it sets out a framework and basic principles for ambient air quality monitoring and management.</p> <p>Two daughter Directive have been adopted: (I) providing limit and alert values for SO2, NOx, particulate matter and lead.(II) benzene and carbon monoxide – this Directive is the first to set a limit value for air pollution for a carcinogen. The setting of such limits is problematic.</p> <p>For examples, for SO2:</p> <ul style="list-style-type: none"> <li>- Hourly limit value for the protection of human health, averaged over 1 hour, equals 350µg/m3, not to be exceeded more than 20 times in the calendar year.</li> <li>- Daily limit value for the protection of human health, averaged over 24 hours, equals 125µg/m3, not to be exceeded more than 3 times a calendar year.</li> <li>- limit value for the protection of ecosystems, average over the</li> </ul>
	SO2	NOx	VOC	NH3																																	
Austria	39	103	159	66																																	
Belgium	99	176	139	74																																	
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France	375	810	1050	780																																	
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EU15	3850	6519	6510	3110																																	

		<p>calendar year and winter, equals 20 µg/m<sup>3</sup></p> <ul style="list-style-type: none"> <li>- Alert threshold averaged over 3 consecutive hours over an area of 100km<sup>2</sup> or an entire agglomeration, equals 500 µg/m<sup>3</sup></li> </ul>												
Ozone		<p>Air quality framework directive:</p> <p>One of directive's key requirement is that EU member states ensure that a World health organisation ozone standard of 120 micrograms per cubic metre (ug/m<sup>3</sup>) is exceeded no more than 25 times per year averaged over three years by 2010. By 2020 the limit should be met without any exceedences.</p>												
CO <sub>2</sub>	Total Emissions threshold established for countries under the Kyoto Protocol.	There are no ambient quality thresholds for CO <sub>2</sub> emissions												
SO <sub>2</sub>	<p><u>Large Combustion Plants</u> (88/609/EEC- to be repealed by 2001/81): Attempts to limit emissions of SO<sub>2</sub> and NO<sub>x</sub> from fossil-fuelled power stations and other large combustion plants. Also restricts emissions of dust. Existing plants are subject to total national emission limits, and for new plants emission limits applicable to individual authorisations are defined. The 2001 Directive will set stricter limits; Member States must either take appropriate measures to ensure that all licenses for the existing plants contain conditions that comply with the emission limit values for SO<sub>2</sub>, NO<sub>x</sub> and dust set in part A of Annexes III to VII for new plants, or alternatively they can be subjected to a national emission reduction plan. The aim is that the plan would lead to the same emission level that would have been achieved by applying the emission limit values individually to the existing plants in operation. In other words, the plan would allow some plants to exceed the limits provided that emissions from other plants are below them. The reduction targets for emissions of SO<sub>2</sub> and NO<sub>x</sub> from existing plants are set in Annexes I and II with which the plan must comply.</p> <p>Emission limits for new plants are set in either part A or in part B of Annexes</p>	<p>Directive 80/779/EEC (to be repealed after new standards have been established through a daughter Directive of the AQFD), was the first piece of Community-wide legislation to lay down mandatory air quality standards. The standards relate to SO<sub>2</sub> and smoke. Annex I sets limit values for the ground level concentration of so<sub>2</sub> and suspended particulates, which must be met through Member States during specified periods:</p> <table border="1"> <thead> <tr> <th></th> <th>Smoke</th> <th>Limit values-air SO<sub>2</sub></th> </tr> </thead> <tbody> <tr> <td>Year (median of daily values)</td> <td>80</td> <td>If smoke less than 40:120 If smoke more than 40:80</td> </tr> <tr> <td>Winter (median of daily values 1 Oct-31 March)</td> <td>130</td> <td>If smoke less than 60:180 If smoke more than 60:130</td> </tr> <tr> <td>Year (peak) (98 percentile of daily values)</td> <td>250</td> <td>If smoke less than 150:350 If smoke more than 150:250</td> </tr> </tbody> </table>		Smoke	Limit values-air SO <sub>2</sub>	Year (median of daily values)	80	If smoke less than 40:120 If smoke more than 40:80	Winter (median of daily values 1 Oct-31 March)	130	If smoke less than 60:180 If smoke more than 60:130	Year (peak) (98 percentile of daily values)	250	If smoke less than 150:350 If smoke more than 150:250
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Winter (median of daily values 1 Oct-31 March)	130	If smoke less than 60:180 If smoke more than 60:130												
Year (peak) (98 percentile of daily values)	250	If smoke less than 150:350 If smoke more than 150:250												

	<p>III to VII. The emission limit values set in part B are stricter than those in part A. The Directive sets an emission limit value of 200mg/Nm<sup>3</sup> NOx for plants (solid fuel, part B) over 500 MW by 2016. Smaller plants (solid fuel, part B) of 50-500MW are to meet the target of 600mg/Nm<sup>3</sup>. The Directive specifies emission limit values for SO2 in relation to solid fuels (including biomass), liquids and gas. For example the emission limit value for SO2 in plants over 100 MW using solid fuels in 200mg/Nm<sup>3</sup> (part B). The Directive also sets emission limit values for dust.</p> <p><u>Sulphur content of fuels (93/12/EEC)</u>: a limit of 0.2% sulphur by weight for gas oils came into effect from 1 October 1994. A more stringent limit of 0.05% sulphur is applied solely to diesel fuels from 1 October 1996. Directive 1999/32 maintains the 0.2% limit for gas oil until Jan 2008 when it is to be reduced to 0.1% by mass. The Directive sets the limit on the sulphur content of heavy fuel oil to 1% by mass from Jan 2003.</p> <p>The sulphur content of diesel requirements are superseded by 98/70/EC for road fuels, but Member States may apply either value for off-road machinery and tractors. Leaded fuel is prohibited from sale after 1 Jan 2000</p>	
NOx		<p>Directive 85/203/EEC (to be repealed after new standards have been established through a daughter Directive of the AQFD). Sets a limit of 200µg/m<sup>3</sup> for nitrogen dioxide in the atmosphere (calculated as the 98<sup>th</sup> percentile of mean values per hour recorded throughout the year). It also sets guide values of 50 µg/m<sup>3</sup> (50<sup>th</sup> percentile of mean values) and 135 µg/m<sup>3</sup> (98<sup>th</sup> percentile of mean values) which are intended to serve as reference points for the establishment of particular schemes within zones in Member States.</p>

VOC	<p>1999/13/EC sets out 3 different ways for reducing solvent emissions: uniform emission limit values; reduction schemes; or national plans. Controls must achieve one of two aims: either all installations must comply with specific limits laid down in Annex IIA to the Directive; or they must meet the requirements of a reduction scheme specified in accordance with Annex IIB. Annex IIA is very precise, setting out different emission limit values for waste gases and fugitive emissions, or alternatively for total emissions, for each of the main activities covered by the Directive. The limits are mostly expressed in relation to the total carbon content. The limits for fugitive emissions in Annex IIA do not have to be applied where they are not technically and economically feasible, as long as there is no significant risk to humans or the environment. Article 5 also incorporates additional controls for certain specific types of VOCs, which are subject to an emission limit where the discharge exceeds a given level. Another emission limit applies to certain halogenated VOCs.</p>	
Lead	<p>98/70/EC prohibits the sale of leaded petrol after 1 Jan 2000</p>	<p>Directive 82/884/EC (to be repealed after new standards for lead have been established through a daughter Directive of the AQFD). The concentration of lead in the air is not to exceed 2 micrograms per cubic metre, expressed as an annual average mean concentration. Member States may set more stringent values.</p>
<b>Water</b>	<p>There are four types of standards in Water Policy: ambient quality standards; objectives regarding eutrophication; emission standards; and product standards. Ambient quality standards are set under the following Directives:</p> <p><u>Surface Water for Drinking (Directive 75/440)</u></p> <p>Sources of surface water for the abstraction of drinking water are to be classified by their existing quality into three categories: A1, A2 and A3 corresponding to the three standard methods of treatment required to transform the 'surface water' into drinking water. Forty-six 'parameters' are listed against which numerical values are given under six columns: an I (or</p>	<p>The Water Framework Directive (2000/60/EC (OJ L327 22.12.2000) requires that all waters either achieve 'good ecological status' or that 'high status' waters are maintained, subject to specific derogations.</p> <p>The environmental objectives are set out in Article 4 and require Member States to:</p> <ul style="list-style-type: none"> <li>➤ prevent deterioration of ecological quality and pollution of surface waters and restore polluted waters, in order to achieve good water status in all surface waters by 31 December 2015.</li> <li>➤ prevent deterioration of groundwater quality, restore polluted</li> </ul>

	<p>imperative) value and a G (or guide) value for each category A1, A2, A3. The parameters include temperature, BOD<sub>5</sub>, nitrates, lead and faecal coliforms. Member States are required to lay down values for sampling points where water is abstracted, and must then ensure that 95 per cent of the samples of 'surface water' meet the values laid down for the I values and that 90 per cent of the samples do so for the other values laid down.</p> <p><u>Bathing Water (76/160/EEC)</u> An annex lists 19 physical, chemical and microbiological parameters, against 13 of which are indicated I (Imperative) and/or G (Guide) values. Member States must set values which bathing water must meet, the values being no less stringent than the I values, with the G values being observed as guidelines. Where a Member State adopts the I values, 95% of samples must comply to conform with the Directive.</p> <p><u>Dangerous substances in water (76/464/EEC)</u> Sets a framework for the elimination or reduction of pollution in inland, coastal and territorial waters by particularly dangerous substances. All discharges liable to contain list II substances require prior authorisation with emission standards being laid down. These emission standards are to be based on quality objectives. For list I substances Member States may chose between 2 alternative regimes: limit values which emission standards set at national level are not to exceed; or emission standards set by reference to quality objectives.</p> <p>Daughter directives specify limit values for different types of processes or industrial sectors. Quality objectives are set for various bodies of water. Emission standards are then to be set by the Member States so that the appropriate quality objective(s) is or are complied with in the area affected.</p> <p><u>Water standards for freshwater fish (78/659/EEC)</u> Quality objectives are to be set for designated stretches of river or other fresh waters in order to allow fish to live in favourable conditions. An annex set out 14 physical and chemical parameters against which are listed I (imperative)</p>	<p>groundwater, and ensure a balance between abstraction and recharge of groundwater, in order to achieve good groundwater status in all groundwaters by 31 December 2010.</p> <ul style="list-style-type: none"> <li>➤ comply with all standards and objectives relating to Protected Areas by 31 December 2010, unless otherwise</li> <li>➤ specified in the Community, national or local legislation under which the individual Protected Areas have been established.</li> </ul>
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	<p>and G (Guide) values for salmonid and cyprinid waters. Member State are to set values no less stringent than the I values and 'shall endeavour to respect the values in column G'. Member States are to ensure that within 5 years of designation the waters conform to the values set.</p> <p><u>Shellfish Waters (79/923/EEC)</u> Member State are to establish pollution reduction programmes so that within six years of designation the waters conform with values set by Member States. These values must be set for 12 physical, chemical or bacteriological parameters listed in an Annex. The annex sometimes specifies I values, G values or both. The values set by the Member States must be at least as stringent as the I values.</p>	
<b>Noise - <u>Outdoor equipment, (2000/14)</u></b>	<p>This Directive brought together a number of separate pieces of noise legislation, including those addressing lawnmowers and construction equipment, within one framework for noise for outdoor equipment. It reduces previous noise limits for most types of outdoor equipment. For 55 types of outdoor equipment noise is to be measured. For 19 of these noise reduction limits are set. Example: For lawnmowers, noise limits were set according to the cutting width of the mower and ranged from 96-105 dB(A).</p>	
<b><u>Cars, buses, lorries (92/97/EC)</u></b>	<p>Introduced mandatory noise limits for exhaust systems of motor vehicles. Example: Cars – 74 dB(A); Buses over 3.5 tonnes, less than 200HP – 78 dB(A)</p> <p>Directive 2001/43 introduces limits on noise arising from the contact between road surfaces and tyres on vehicles and trailers when the vehicle is in motion.</p>	
<b><u>Motorcycles (97/24/EC)</u></b>	<p>Established mandatory noise limits. Example: Motorcycles &lt; 80cc – 75 dB(A); 80-174cc – 77 dB(A)</p>	

<u>Aircraft (80/51/EEC)</u>	This, along with other Directives, ensures that Member states implement the noise standards for subsonic aircraft which have been agreed, but without mandatory force, within the ICAO.	
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## ANNEX 4: BACKGROUND NOTE ON PROJECT PIPELINES IN THE CANDIDATE COUNTRIES

### Introduction

In the Candidate Countries<sup>2</sup> there is a particular challenge in ensuring effective and efficient pipelines of projects that allow the candidate countries to implement the *acquis communautaire*, build their infrastructure as part of the process of cohesion to the EU, while balancing the various needs – economic, social and environmental. This challenge was already noted in the Commission's 1998 Communication on Accession Strategies for the Environment<sup>3</sup>, which called on Candidate Countries to develop investment strategies for the implementation of the *acquis communautaire*.

In addition to national, regional and local sources of funding, the Candidate Countries are supported by EU sources of funding for projects. As proposed in *Agenda 2000* the Union is allocating substantial Community financial assistance for environmental investments in Candidate Countries, particularly through the new Instrument for Structural Policies for Pre-Accession (ISPA) as well as the revised Phare programme and the new pre-accession instrument for agriculture and rural development (SAPARD). ISPA, which started operation in 2000, will grant over 500 Mio € per year for environmental investments over the period 2000-06. In addition, several Candidate Countries have joined the *Life Programme*.

Each of these, as well as domestic investment initiatives (national and regional funds, government budgets, municipalities and local authority budgets), include a list of eligibility criteria, and mechanisms for project selection. Project identification is sometimes made explicit, and sometimes left for the countries to decide on themselves (Box 1 presents a summary of practice in the Candidate Countries). There have been many concerns on the provision of projects for funding (national and other).

#### Box 1: Practice with Project Pipeline Development in Candidate Countries

In many countries there are National Environmental Action Plans (NEAPs), that contain a long list of projects in an annex. In some countries this is the prime instrument for noting projects and subsequent project selection. In Romania, for example, the NEAP is regarded as the prime source of environmental projects from which to look for projects to respond to EU funding opportunities. Projects included in the list were identified by consultation with various municipalities, and local (Judet level) environmental protection agencies. The list contains a lot of gaps (e.g. some directives not covered), and seems imbalanced across sectors (water, waste and air addressed to differing degrees). The list is updated, but it appears that this is not an annual process, and more ad hoc than systematic.

In some countries there are national, regional and local environmental funds. A key example of practice is found in Poland, where the national environmental fund and eco-fund, finance a large share of environmental projects. There is an annual call for projects launched and publicised in the press, and clear prioritisation criteria noted. It is thought that the fund is quite

<sup>2</sup> Cyprus and Malta applied for EU membership in 1990. Hungary and Poland submitted their applications in 1994, followed shortly by Czech Republic, Romania, Slovakia, Lithuania, Latvia, Estonia, and Bulgaria in 1995, and Slovenia in 1996. In 1999, Turkey's application was also formally accepted.

<sup>3</sup> COM(1998)294.

successful and a useful example of practice.

Central governments launch programmes – such as the 800+ programme in Latvia. The ‘800+’ programme began in Latvia in 1995, aiming to improve water supply and wastewater treatment in small towns and rural areas. The number 800 signifies that 800 new waste water plants will be reconstructed or built.

Central government pipelines have tended to be focused on water and waste water – air is often left to industry (now often in private hands), and waste to municipalities / local authorities, who have formal responsibility for this. Given the different financial means and interests of the various stakeholders, progress in projects across environmental media runs at different rates, with clear gaps in the overall environmental project pipeline – fewer waste and air pollution projects supported (though there are national variations here).

At the central level, responsibility for certain sectors (e.g for water projects) may not lie with the Ministry of the Environment (e.g. it is the Ministry of Public Works in Romania), and co-ordination between ministries can sometimes be inefficient. Issues such as addressing pesticides/nitrates would not fall within “project pipelines” and, where addressed, fall to designated ministries.

Local authorities/municipalities invest in projects either fully or together with private companies (e.g. for landfill sites in the CR and SR). In these cases there is increasing “tendering”, rather than direct contracts being handed out.

The ISPA funds have allowed for financing of water, waste water, waste and transport projects, offering up to 70% grant funding. It is understood that all projects need EIAs carried out. The EBRD, World Bank and EIB have all lent for environment projects – e.g. EBRD for water projects in Romania, World Bank on energy projects in Romania. Each of these lending organisations have particular eligibility and prioritisation requirements, including requirements for EIAs.

Concerns regarding project pipeline development include:

- Projects selected often are simply the next projects rather than the best projects.
- The project identification does not always lead to the best projects being identified, or a sufficiently early identification of needs to allow the next projects to include the best projects. In many cases there is insufficient and partial<sup>4</sup> canvassing of stakeholders for projects. The institutional capacity was not always sufficiently in place.
- Project identification can be influenced by the level of political linkage of municipalities to government.
- Project selection criteria are often only partial, and may miss out important benefits or impacts, whether environmental, health, social or economic. Many projects will not offer optimal contributions to sustainable development.
- While EIAs are now generally carried out, some are weak, and often these do not offer real project alternatives, missing an opportunity for addressing environmental concerns properly. There is some concern that in some areas EIAs are regarded as a bureaucratic tool / window dressing rather than as an instrument to ensure minimum environmental impacts.
- Project selection methodologies often rely on a political process rather than a transparent assessment of benefits and costs.

<sup>4</sup> Some municipalities or local/regional EPAs would have greater knowledge of calls for proposals, requirements than others.

- In some cases, there are insufficient good projects around to take advantage of the funding available – which can either lead to missed funding, or to second or even third-best projects being selected.
- There has often been a lack of know-how on how to develop good project proposals, often influenced by a view that project selection is a political process and not really a matter of meritocracy across projects.
- There has also arguably been a case of misallocation of priorities- historically many candidate countries developed national environmental action plans that included a long list of projects, but these projects were often selected on the basis of “hot-spots” (notably air, water of waste/land pollution) rather than true benefits / cost-effectiveness<sup>5</sup> of projects.
- There has also been a concern that EU projects (notably ISPA) have to be large (more than 5MEUR), and that often leads to two problems: first that this absorbs a lot of domestic money to pay for the non-EU part, and second some projects are too small for the 5MEUR threshold and hence either do not get financed<sup>6</sup> or the costs are exaggerated.
- There is some concern that grant funding leads to the wrong message, especially where there are very high grant shares, in that it goes against the polluter pays principle, user pays principle and full cost recovery principles...as well as against, in some cases, the principle of efficient allocation of resources.

In the short term, there is a very important problem regarding funding disbursement. For ISPA, while the fund moneys have been allocated, very little has been disbursed and the countries are in danger of losing the moneys. There is therefore a need to ensure a functioning mechanism for disbursing funds.

More positively, however:

- there are increasing efforts made to ensure that the coverage for project identification is broadened to help highlight projects that historically might have been missed in the process.
- There are regular “calls for projects” (official journal, fund web site, letters to all regions, regional EPAs and municipalities etc) that are helping ensure that currently needed projects are picked up rather than decision makers working with “old” lists. There has been a broadening (across potential beneficiary types) of this “call for projects” over the last years in some candidate countries.
- Furthermore, several candidate countries continually develop their project selection approach, including more transparency and more criteria for selection. Many are aware of the need to develop project evaluation and ranking such that the right projects are selecting.
- There are some good examples of where other SD concerns have led to project selection – for example in Poland some environmental infrastructure projects were selected in the South East, where there is high unemployment, low economic health, and low environmental infrastructure. The aim was to help develop the local and regional economy through investment in environmental infrastructure.

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<sup>5</sup> In some cases addressing hot spots can lead to large sums of money having lesser effect than focusing on new needed environmental infrastructure.

<sup>6</sup> This is understood to be in the process of being addressed, both through “grouping of projects” and for a facility for smaller projects.

- On the above-mentioned point of grant funding, there has been some progress, as candidate countries put in for lower grant share applications to make sure that the grants available could be spread more widely, facilitating more projects than initially feared.

ISPA, Sapard, and Phare also contribute to the process of trying to ensure appropriate projects are selected – though the use of, *inter alia*, clear eligibility criteria, project ranking criteria and methodologies. These have been aided by DGENV's PEPA programme which has sought to develop a set of tools to support Candidate Countries in their finance and investment planning. In particular, to support an efficient use of funds and to ensure that the entire environmental acquis is covered, rather than just a small sub-set given political priority at any one time.

The PEPA programme led to a second Communication - *Communication from the Commission: The Challenge of Environmental Financing in the Candidate Countries*.<sup>7</sup> This noted that “*investment strategies [which comprise prioritization, project identification, selection etc] are also essential tools for the countries themselves to clearly show governments the scale and timing of the expenditure needed for accession in terms of administration, staff, monitoring equipment as well as infrastructure. Such strategies are equally important for the post accession period, to support future applications for Structural/Cohesion Fund assistance.*” This included a set of prioritization criteria, as summarized in Table 1. These could clearly be further developed to clarify the benefits across the four capital types, but importantly the range of criteria do underline that optimal SD is only one part of project viability / merit.

Importantly, the current initiatives to improve investment planning (project pipelines etc) will help make the most of post-accession Community Structural and Cohesion Funds. The Commission's second report on Cohesion<sup>8</sup> indicates that support for environmental investments through the Community's structural instruments (which will replace ISPA, Phare, Sapard upon accession) will be an important priority for the new Member States.

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<sup>7</sup> COM(2001) 304 final Brussels, 8.6.2001

<sup>8</sup> (COM(2001)24)

**Table 1: Criteria for Prioritisation at the Strategic Level and Project Level**

<p><b>1. Accession Issues</b></p> <ul style="list-style-type: none"> <li>• Priority allocated to the directive in the context of accession e.g. if transition period requested</li> <li>• Status of transposition &amp; enforcement of relevant legislation</li> <li>• Priority of the sector in national environmental strategies/plans (e.g. NPAA, Accession Partnerships, sectoral strategies)</li> </ul>	<p><b>2. Environmental Issues</b></p> <ul style="list-style-type: none"> <li>• Severity of problem</li> <li>• Health impacts</li> <li>• Trans-boundary impact</li> <li>• Urgency of problem</li> <li>• Cost-effectiveness of proposed solution</li> <li>• Part of long-term strategy, e.g. sustainability,</li> </ul>
<p><b>3. Financial Issues</b></p> <ul style="list-style-type: none"> <li>• Availability and sources of finance</li> <li>• Operating &amp; maintenance costs</li> <li>• Level of income expected (e.g. from charges)</li> </ul>	<p><b>4. Economic Issues</b></p> <ul style="list-style-type: none"> <li>• Affordability of proposed charges</li> <li>• Affordability of proposed investment</li> <li>• Wider economic benefits (and costs) of project</li> </ul>
<p><b>5. Technical Issues</b></p> <ul style="list-style-type: none"> <li>• Complexity of project &amp; technology used</li> <li>• Current status of project development</li> <li>• Resources available for project development</li> </ul>	<p><b>6. Institutional Issues</b></p> <ul style="list-style-type: none"> <li>• Environmental Impact Assessment if needed</li> <li>• Necessary permits for construction/operation in place</li> </ul>
<p><b>7. Commercial Issues</b></p> <ul style="list-style-type: none"> <li>• Responsibilities for development &amp; implementation clearly defined</li> <li>• Commercial framework established (e.g. contract for public-private partnership)</li> </ul>	<p><b>8. Timing Issues</b></p> <ul style="list-style-type: none"> <li>• Timing of finance (grant windows etc)</li> </ul>

### Particularities of the Candidate Countries

The current development of investment strategies, project pipelines, project preparation and selection in the Candidate countries entail, in many occasions, similar problems as encountered in EU funding in some Member States. Some of the contextual issues are, however different and will affect the nature and type of projects that are would offer the greatest SD benefits. Particularities of the Candidate countries, with respect to the EU, include

- While there has been a rapid change in employment structure, with a reduction in employment in agriculture and industry, and growth in services sector, there is still a significantly large agricultural community. Part of this agricultural community will be under risk in the internal market, and rural sustainable development will be a key issue that could influence project priorities.
- Per capita GDP values are significantly below EU levels, with some exceptions (e.g. Prague). There are significant regional variations, with richer areas the cities, and increasingly the boarder areas with the EU; eastern boarder areas (with FSU) are often significantly poorer.

- Regional unemployment is relatively low in CEE in comparison to the EU, with considerable sub-national variation (but again less than in EU Member States)<sup>9</sup>. This does not mean that there are no cases where significant regional unemployment will lead to a priority being given to projects for the region.
- The environmental infrastructure is significantly less mature and extensive than in most EU Member States, and significant investment is required for the environmental *acquis communautaire* to be implemented.
- While pollution and polluting product use has fallen significantly in most areas since 1990, the levels are generally higher per unit GDP than in the EU Member States.
- There are wide areas of particular biodiversity and habitats/eco-system benefits. Some of these are not currently under threat, and others are. It is unfortunate that environmental awareness in the populace is insufficient to address interest in economic development – and this is still seen as an “either or” situation, rather than opportunity for true sustainable development. It is clearly important that project selection takes potential impacts on these into account.
- The institutional capacities seem to be such that there are greater difficulties in proposal/project development (notably on the integration of economic and financial analysis), as well as project ranking/selection (procedures often less transparent and arguably open to influence in several countries), and ensuring disbursement takes place is non-trivial (easier for transport than environmental projects). The level of integration of SD concerns is very low, though this is perhaps not too different from the state of affairs in many EU Member States.

Overall, we could expect economic interests to be very strong, and it is therefore key that projects funded under the EU structural funds are those that have the best sustainable development profile (to the extent that can be practically assessed and ensured) and that safeguards are in place for biodiversity/ecosystems and that environmental project allocations are not lost to more easily funded projects (such as in the transport sector).

### **Key Issues / Questions for an SD of SF**

While the aim of this note to come up with recommendations on what to do for the Candidate countries, going through the process is a useful tool to highlight some of the key questions that we would like our SD methodology to be able to ask. Key issues include:

- It is important for there to be support for project preparation and for the inclusion of SD into project preparation – rather than just as post project window dressing. For SD inclusion in project prioritization, one has to be realistic – it will not be possible in the short term for selection criteria to include explicit quantitative criteria for SD, but there is a possibility that at least SD concerns are explored, including trade-offs across the 4 capitals.

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<sup>9</sup> "Enlargement and Cohesion" – Background Study for the 2nd Cohesion Report: The Impact of EU Enlargement on Cohesion . Preparation of the Second Report on Economic and Social Cohesion, Study Area 11 commissioned by the European Commission, DG Regio (FINAL REPORT: DIW, German Institute for Economic Research, and EPRC, European Policies Research Centre)

- Consequently training and guidelines are required (future ESF) on SD, project preparation etc.
- While EU funding could understandably be more focused on internal border regions (e.g. western Poland and Germany), in many cases it is the eastern borders that have the greatest need given economic disparities (e.g. eastern Poland and border with Byelorussia).
- As transport will be a key areas supported, it is important that true EIAs are carried out, and indeed that SIAs/RIAs are carried out on transport planning policies and programmes.
- There is a particular danger of compromising nature reserves/sites throughout the candidate countries. Requirements under the structural funds for not impacting on Natura 2000 sites should be communicated to project proponents and true EIAs carried out on projects.
- There is also a significant need for finance to get sites up to the Natura 2000 status, and to ensure adequate protection of other sites. It would be valuable to communicate possible structural funds possibilities for this task to the candidate countries.

### **Key Questions for the methodology**

- Training for project preparation –what is the extent, and to what extent has SD been taken into account? No training would suggest likely missed opportunities.
- In project ranking procedures how have the 4 SD capitals been taken into account? Are they taken into account at all; what is the balance; is it purely qualitative or are there quantitative indicators used? And is there evidence of this influencing project decisions or project makeup.
- EIAs – to what extent have EIAs been carried out, at what stage, were there true “alternatives”, was there any evidence that the EIA led to a change in the projects, and if so what changes were there (and judged whether substantial or marginal).
- Have there been any RIA of particular programmes? To what extent has SD been incorporated and what lessons can be learnt?
- For Project identification are all the key stakeholders identified and do all have access to submit projects?
- Is the project preparation guidance clear, and does it take SD into account (and how)?
- How clear are the requirements not to impact on protected areas, and is due consideration given to this in project specification?
- To what extent do programme priorities reflect consideration of SD impacts?

## ANNEX 5: TABLES OF THE CONTRIBUTION OF INFRASTRUCTURE, HUMAN RESOURCE AND BUSINESS SERVICES INTERVENTIONS TO SOCIAL AND NATURAL CAPITAL

The following tables show the contribution of interventions in infrastructure and human resources to social and natural capital. A typology of interventions has been crossed with contribution domains, by capital. Examples of projects/ measures and their impact are given in the table, with an abbreviation of the region concerned (see below for a key to the regions' abbreviations).

### **Key to the Abbreviations for regions**

Andalucia – And  
Antwerp: Atwp  
Calabria: Clba.  
Campania: Cmpa  
Catalonia: Ctla  
Gelderland: Glnd  
Germany: Ger  
Greece: Gr  
Ireland: Ire  
Midi Pyrénées: MiP  
Navarra: Nra  
Norte: No  
Nord Pas de Calais: NPdC  
North Rhine Westphalia: NRW  
Portugal: Por  
Saxony: Sa  
Thessaly: The  
Västra Götaland: VG  
West Midlands: WM

### **Symbols:**

+ positive contribution; ++ very positive contribution; - negative contribution; - - very negative contribution;  
(+) indirect positive contribution; (-) indirect negative contribution; 0 neutral;  
? unknown contribution

## CONTRIBUTION OF INFRASTRUCTURE INTERVENTIONS TO NATURAL CAPITAL

Infrastructure projects in funded under Objective 1 tend to be large and wide-ranging. It was considered that most of these infrastructure projects would have been funded without the structural funds. Infrastructure projects tend to have significant effects on natural capital. However the nature of the projects determines whether these effects are positive or negative:

- Road building or improvement projects were considered to have a negative impact on emissions and congestion, whereas heavy and light rail infrastructure is thought to improve emission generation as car trips are replaced by train journeys.
- Water and waste management projects were considered to have a positive effect on natural capital, despite some short-term negative effects due to the building of the facilities.
- Energy (power generation) projects were considered to have a short-term positive effect on emissions, but not always on resource use (as better access to energy leads to more consumption).

The overall contribution of infrastructure projects on natural capital is considered slightly negative. There are few infrastructure projects funded under Objective 2, (light rail and telecommunications infrastructure projects). These were considered to have a neutral to slightly positive indirect effect on natural capital.

	Natural Capital								
	Air quality	Climate Change	Water quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
Rail	Developing rail links between urban centres Portugal +			Developing rail links between urban centres Portugal +	Andalucia High Speed train -	And. Train -	Developing rail links between urban centres Portugal +		
							And. Train -		
Light Rail	Campania LRT system ++	LUAS & METRo. Ire. ++	LUAS & METRo. Ire. +	Campania LRT system ++	Subway Barcelona Ctla +	Midland Metro. WM. (+)		Subway Barcelona Ctla ?	Subway Barcelona Ctla ?
								Midland Metro. WM. 0	

	Natural Capital								
	Air quality	Climate Change	Water quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
Road	Developing network pf complementary roads Portugal -	National Roads Ire. -	National Roads Ire. (-)	Developing network pf complementary roads Portugal -	<i>Modernization of the Salerno-Reggio highway in Calabria -</i>	<i>Modernization of the Salerno-Reggio highway in Calabria -</i>	<i>Modernization of the Salerno-Reggio highway in Calabria -</i>	Road network Ctla -/0	Road network Ctla 0
				Federal road network improvements. Ger. --	And. A49 Seville-Portugal -	And. A49 -	And. A49 -		N1 motorway Madrid-France Nvra ?
					Road network Ctla -/?		Federal road network improvements. Ger. --		Ebro rd widening Nvra ?
					N1 motorway Madrid-France Nvra -				
					Ebro rd widening Nvra -				
Airports					Athens airport 0		Athens airport -	Athens airport +	
Ports					<i>Port of Gioa Tauro, Calabria 0</i>		<i>Port of Gioa Tauro, Calabria -</i>		
Transport Management	Logistics services and infrastructures NRW ?		Logistics services and infrastructures NRW -		<i>Integrated system of services and local public transports Calabria 0</i>		<i>Integrated system of parking and local public transports Calabria +</i>		
							Logistics services and infrastructures NRW ?		

	Natural Capital								
	Air quality	Climate Change	Water quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
<b>Power</b>	Natural Gas feedstock to power plants near Athens +			Campania Renewable energy power generation 0	Natural Gas feedstock to power plants near Athens 0		Natural Gas feedstock to power plants near Athens -	Natural Gas feedstock to power plants near Athens +	Water & Sewage provision Ctla 0
	Campania Renewable energy power generation +				Water & Sewage provision Ctla +			Water & Sewage provision Ctla 0	
<b>Water and waste treatment plants</b>	Waste management system for water supply in Thessalia +	Water treatment Ire. ?	Waste management system for water supply in Thessalia +		Water supply & waste-water treatment Ger. +		Water supply & waste-water treatment Ger. +	Waste management system for water supply in Thessalia ++	
			Water treatment Ire. ++						
<b>Telecomms</b>			Investing in telecomms infras. Gnd ?		Investing in telecomms infras. Gnd ?				

## CONTRIBUTION OF HR INTERVENTIONS TO NATURAL CAPITAL

The effects of HR interventions on natural capital were difficult to estimate. There was little contribution on air, water and soil quality and climate change, and traffic congestion. However training programmes were found to have a slightly positive effect on waste and biodiversity; and a positive effect on resource use and eco-efficiency. This suggests that education and training improves environmental awareness, which is translated into better use of environmental resources. The contribution of HR interventions does not appear to differ significantly with the various programme funding sources (Objective 1, 2 or 3).

	Natural Capital									
	Air quality	Climate change	Water quality	Soil Quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
Training	Infrastructure for vocational education. Sa <b>0</b>	Assistance for long-term unemployed. Ire. <b>0</b>	Assistance for long-term unemployed. Ire. <b>0</b>	Gnd. Developing flexible work times <b>0</b>	<i>Professional training to promote female activity rate. Cmpa. 0</i>	And. vocational training for women <b>(+)</b>	Atwp. training infra.?	And. vocational training for women <b>(+)</b>	Atwp. training infra.?	Vocational Training Ctla. <b>0/(+)</b>
			Gnd Technical Vocational Training <b>0</b>		<i>Prof. Training in rural areas. Cmpa. 0</i>	<i>PIT Gioia Tauro Innovative training programmes for young people Clba +</i>	And. vocational training for women <b>0</b>	<i>PIT Gioia Tauro Clba +</i>	Obj. 3 Lifelong learning. WM. <b>(+)</b>	Training researchers Nra <b>(+)</b>
			Professional Training NPdC <b>0</b>			<i>PIT Crotona tourism professional skills courses Clba +</i>	Obj. 3 Lifelong learning. WM. <b>0</b>	<i>PIT Crotona Clba. +</i>	Vocational Training Ctla. <b>0</b>	Scholarships Nra. <b>(+)</b>
						<i>PIT Savuto Clba. Business and tourism Prof. Training courses 0</i>	Scholarships Nra. <b>(-)</b>	<i>PIT Savuto Clba. Business and tourism Prof. Training courses +</i>	Education and Training Gr. <b>0/+</b>	
						Vocational Training Ctla. <b>0/(+)</b>	Prof. Training NPdC <b>0</b>	<i>Professional training Cmpa. +</i>	Voc. training and education GR. <b>0/+</b>	

Natural Capital									
Air quality	Climate change	Water quality	Soil Quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
					GInd. Developing flexible work times <b>0</b>		Rural areas. Cmpa. +	CSF II Continuous training The. <b>0</b>	
					CSF II Axis IV 1 Education and Training Gr. <b>0</b>		Education and Training Gr. <b>0</b>	Flexible long-distance adult education courses. VG. (+)	
					CSFIII Priority I Vocational training and education GR. <b>0</b>		Voc. training and education GR. <b>0/+</b>		
					Training researchers and specialists in technology development Nra (+)		Vocational training. Ger. ?		
					Scholarships for technology training Nra. (-)		Prof. Training NPdC +		
					Vocational training for young people and unemployed. Ger. ?		CSF II Continuous training The. <b>0</b>		
					Infrastructure for vocational education. Sa <b>0</b>		HR development. The. <b>0</b>		
					Flexible long-distance adult education courses. VG. (+)				

	Natural Capital									
	Air quality	Climate change	Water quality	Soil Quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
Facilitating access to jobs	Promotion of HR and equal opps. Sa. <b>0</b>		Gld. Developing flexible work times <b>0</b>	Gld. Developing flexible work times <b>0</b>	<i>Measure to get long-term unemployed back into the labour market Cmpa. 0</i>	And. Improving the employability of unemployed <b>(+)</b>	Atwp. Dutch language courses ?	And. Improving employability <b>(+)</b>	Atwp. Dutch language courses ?	Occupational Plan Cta. <b>0</b>
	Training for women and disadvantaged groups. NRW. <b>0</b>		Training NRW. <b>0</b>			Occupational Plans (internships) Cta. <b>0/(+)</b>	And. Improving employability <b>0</b>	Occupational Plan Cta. <b>0</b>	Fighting social exclusion Gr. <b>0</b>	Reducing job segregation Nra <b>(+)</b>
						Gld. Developing flexible work times <b>0</b>	Services for social support and professional training. MiP. <b>0/+</b>	Fighting social exclusion Gr. <b>0</b>	Local initiatives for unemployed and specific social groups. The. <b>0</b>	
						CSF II Axis IV Fighting social exclusion GR. <b>0</b>		Services for social support and professional training. MiP. <b>0</b>		
						Reducing job segregation through sensitization and training programmes Nra <b>(+)</b>		<i>Long-term unemployed t Cmpa. 0</i>		
						Promotion of HR and equal opps. Sa. <b>0</b>		Integration of specific needy groups. Ger. <b>?</b>		
						Integration of specific needy groups. Ger. <b>?</b>		Training NRW. <b>0</b>		

	Natural Capital									
	Air quality	Climate change	Water quality	Soil Quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
									Local initiatives for unemployed and specific social groups. The. 0	
Improving HR Management				GInd. HR management 0		GInd. HR management 0				

## CONTRIBUTION OF INFRASTRUCTURE INTERVENTIONS TO SOCIAL CAPITAL

Many interventions were judged to have a neutral effect on social capital generally. This may be a reflection of the difficulty in attributing effects between increased manufactured capital and social capital. However a clear conclusion from the case studies is that public transport such as rail and light rail is considered to have a positive effect on social capital across the board. Power and water treatment projects have a slightly positive effect overall. Road programmes are judged to be negative in terms of wage differentials, but appear to contribute positively to networks and welfare expenditure and public services. All interventions assessed against a crime indicator had a positive effect. The type of funding for the intervention does not seem to influence the effect on social capital.

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
Rail	Developing rail links between urban centres Portugal <b>+</b> ?			And. Train <b>0</b>		And. Train <b>(+)</b>			
	And. High Speed train <b>0</b>								
Light Rail	Subway Barcelona Ctla <b>(+)</b>	Cmpa LRT system <b>+</b>		Modernization of the Salerno-Reggio highway in Clba <b>0</b>	Subway Barcelona Ctla <b>+</b>		Cmpa LRT system <b>(+)</b>	Subway Barcelona Ctla <b>+</b>	Midland Metro. WM. <b>(+)</b>
	LUAS & METRo. Ire. <b>+</b>						LUAS & METRo. Ire. <b>+</b>		
	Midland Metro. WM. <b>(+)</b>								
Road	National Roads Ire. <b>?</b>			And. A49 <b>0</b>	Road network Ctla <b>0</b>	And. A49 <b>(+)</b>		National Roads Ire. <b>?</b>	
	And. A49 Seville-Portugal <b>0</b>			N1 motorway Madrid-France Nvra <b>(+)</b>				Modernization of highway Clba <b>+</b>	
	Road network Ctla <b>0</b>			Ebro rd widening Nvra <b>(+)</b>				Road network Ctla <b>0/+</b>	

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
	Federal road network improvements. Ger. -			Federal road network improvements. Ger. -				N1 motorway Madrid-France Nvra (+)	
								Ebro rd widening Nvra (+)	
<b>Airports</b>					Athens airport 0		Athens airport +		
<b>Ports</b>				Port of Gioa Tauro, Clba +				Port of Gioa Tauro, Clba 0	
<b>Transport Management</b>	Logistics services and infrastructures NRW 0		Logistics services and infrastructures NRW (-)	Integrated system of parking and local public transports Clba 0				Integrated system Clba +	
				Logistics services and infrastructures NRW (+)					
<b>Power</b>	Natural Gas feedstock to power plants near Athens +	Cmpa Renewable energy power generation 0			Natural Gas feedstock to power plants near Athens 0		Natural Gas feedstock to power plants near Athens +		
							Cmpa Renewable energy power generation 0		
<b>Water and waste treatment</b>	Water & Sewage provision Ctla 0		Water supply & waste-water treatment Ger. 0		Water & Sewage provision Ctla +			Water & Sewage provision Ctla 0	

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
t plants	Waste management system for water supply in The +							Water treatment Ire. +	
	Water supply & waste-water treatment Ger.0								
	Water treatment Ire. ?								
Telecomms				Investing in telecomms infras. Gind ?					

## CONTRIBUTION OF HR INTERVENTIONS TO SOCIAL CAPITAL

Many interventions were assessed as being neutral or having indirect positive effects on the four capitals. However overall, in terms of social capital, HR interventions contribute positively, with only one of these interventions considered as having indirect negative effects (on wage differentials). Overall, HR interventions had a positive effect on poverty and wage differential, with a very positive contribution to gender inequalities, the latter reflecting the nature of some projects explicitly aimed at reducing inequality in the workplace. The contribution to networks and crime is slightly positive overall. As might be expected, a higher proportion of interventions aimed at facilitating access to jobs had positive effects on social capital, than interventions focused on training.

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
Training	And. vocational training for women 0	Atwp. training infra.+	Vocational training. Ger++	And. vocational training for women 0	Vocational Training Ctl. +/0	And. vocational training for women 0/(+)	Professional training Cmpa. (+)	PIT Gioia Tauro Clba 0	Obj. 3 Lifelong learning. WM.0
	Atwp. training infra.+	Professional training to promote female activity rate. Cmpa. +		PIT Gioia Tauro Innovative training programmes for young people Clba +		Flexible long-distance adult education courses. VG. +	Rural areas. Cmpa. 0	PIT Crotona Clba. +	
	Assistance for long-term unemployed. Ire. (+)	Prof. Training in rural areas. Cmpa. 0		PIT Crotona tourism professional skills courses Clba 0				PIT Savuto Clba. Business and tourism Prof. Training courses +	
	Obj. 3 Lifelong learning. WM.+	Infrastructure for vocational education. Sa +		PIT Savuto Clba. Business and tourism Prof. Training courses 0				Assistance for long-term unemployed. Ire. (+)	
	Vocational Training Ctl. 0/(+)			GInd Technical Vocational Training ?				Vocational Training Ctl. 0/(+)	
	CSF II Axis IV 1 Education and Training Gr. +			Training researchers Nra 0				Education and Training Gr. +	

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
	CSFIII Priority I Vocational training and education Gr. +			Scholarships Nra. +				Voc. training and education Gr. +/0	
	Training researchers and specialists in technology development Nra 0			Prof. Training NPdC +				Infrastructure for vocational education. Sa 0	
	Scholarships for technology training Nra. 0								
	Vocational training for young people and unemployed. Ger. +								
	Professional Training NPdC +								
	CSF II Continuous training The. +								
	Flexible long-distance adult education courses. VG. (-)								
<b>Facilitating access to jobs</b>	And. Improving the employability of unemployed 0	GInd. Developing flexible work times 0	GInd. Developing flexible work times 0	And. Improving employability 0	Occupational Plan CIta. 0/+	Atwp. Dutch language courses ?	<i>Long-term unemployed t Cmpa. +</i>	Atwp. Dutch language courses ?	Services for social support and professional training. MiP.+

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
Occupational Plans (internships) Cta. +	<i>Measure to get long-term unemployed back into the labour market Cmpa. +</i>	Integration of specific needy groups. Ger. +	GInd. Developing flexible work times ++	Local initiatives for unemployed and specific social groups. The. 0	And. Improving employability 0/(+)		Fighting social exclusion Gr. +		
CSF II Axis IV Fighting social exclusion Gr. +	Promotion of HR and equal opps. Sa. +	Training NRW. +	Services for social support and professional training. MiP. 0/+				Occupational Plan Cta. 0		
Services for social support and professional training. MiP.+			Reducing job segregation Nra (+)				Promotion of HR and equal opps. Sa. ++		
Reducing job segregation through sensitization and training programmes Nra (+)			Training NRW. (+)						
Integration of specific needy groups. Ger. ++									
Training for women and disadvantaged groups. NRW. 0									
Local initiatives for unemployed and specific social groups. The. +									

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
Improving HR Management				GInd. HR management 0					

## CONTRIBUTION OF BUSINESS SERVICES INTERVENTIONS TO SOCIAL CAPITAL

### Business services

The case studies show that business services measures and projects have usually been targeted at the most depressed areas within the region, which may have seen a shift from traditional manufacturing or agricultural activities. Projects are aimed at supporting technological innovation in businesses within these sectors, as well as encouraging diversification of the economy through the provision of new premises and information technology resources.

The main beneficiaries of business service measures are SMEs (although some measures include larger companies), often in the new technology, tourism and environmental sectors. Tourism is especially important in the southern MS case studies assessed, but also in the northern regions, with activities specifically targeted at this sector.

In at least three of the case studies, business services measures such as financial grants have been specifically targeted at small handicraft businesses.

Although business service measures are separate from human resource measures, there is a common theme in that they are often both aimed at disadvantaged groups such as youth and women. The introduction of ICT to SMEs through business service projects comes hand in hand with HR training activities in ICT, although these are usually funded separately.

Within the Objective 2 funded projects, networking and encouraging exchange of knowledge between companies and research institutions are an important component of business support. This is considered to have led to the creation of more productive systems and a positive contribution to all 4 capitals.

As might be expected, the greatest contribution of business services measures is to manufactured capital and human capital. However, depending on the nature and scope of the measure, several measures and projects also have positive effects on social capital and to a lesser extent, natural capital. Some key issues relating to business services measures can be summarized as follows:

- The longer term, lasting projects are ones that integrate different players at a local level, e.g. the research community and local businesses, which improve enterprise through increased innovation and the creation of high tech industry.
- A focus on the local economy, and integration, appear to be success factors. The fact that business service measures do not contribute positively to all 4 capitals is blamed in some assessments on a lack of integration.

- In some regions (usually receiving Objective 1 funding) it is considered that increasing industrialization, in part brought about by business service measures, puts more pressure on natural capital. This is the case where there is an absolute increase in businesses rather than a shift in the type of companies and production processes in an area.

There have been improvements between programming periods, with economic (and business) development in some regions being more balanced in the later period, leading to a more positive contribution of these measures across all capitals, including natural capital.

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
<b>Financial support</b>	OP CSF III Competitiveness Gr. +	Obj 1 1991-93 Assistance for SMEs Sa. 0/+	Obj 2 2000-2006 Business & start-up finance (mastercrafts) NRW +	PIT Savuto: support dept of local handicraft SMEs Clba -				PIT Savuto: support dept of local handicraft SMEs Clba -	Obj 2: Modernization investments. MiP +
	Obj 2: Modernization investments. MiP ?			Obj 2 2000-2006 Business & start-up finance (mastercrafts) NRW +				OP CSF III Competitiveness Gr. +	
				Obj 2: Modernization investments. MiP ?				Obj 1 1991-93 Assistance for SMEs Sa. 0/+	
<b>Promotion of networks and partnerships</b>	CSF III: Productive environment The. +	PIT Valle dell'Inno: integration of research comm. & local businesses Cmpa +		Obj2 Exchange of knowledge & ptnships. GInd ?	CSF III: Productive environment The. 0		PIT Valle dell'Inno: integration of research comm. & local businesses Cmpa +		
	Obj 2 2000-2006 Business networks VG +	Obj2 Exchange of knowledge & ptnships. GInd ?		POR 2000-2206: cooperation between companies Clba (-)		Obj 2 2000-2006 Business networks VG +		POR 2000-2206: cooperation between companies Clba (-)	

	Social Capital								
	Wage differentials/poverty	Spatial Impact of poverty	Gender inequalities	Networks/cooperation	Health	Precarious employment	Crime	Welfare expenditure / public services	Territorial Development
<b>Improving services to companies</b>	Obj2 1994-1999 improvement of services and tech. devpt. Ctle <b>0</b>	Obj2 Strengthen physical knowledge infra. GInd ?		Obj2 Strengthen physical knowledge infra. GInd ?	Obj2 1994-1999 improvement of services and tech. devpt. Ctle <b>0</b>			Obj2 1994-1999 improvement of services and tech. devpt. Ctle <b>0</b>	
<b>Technology innovation support</b>	Supporting productive investments. Ger <b>+/0</b>	OP 2000-2006 Support for R&T, promoting information society measures. Sa <b>0</b>	Supporting productive investments. Ger <b>+/0</b>	PIT Pollino: Support to new business in tech. innovation Ciba+				OP 2000-2006 Support fo R&T, promoting information society measures. Sa <b>0</b>	Accelerate project: use of ICT & innovation WM <b>+</b>
	OP CSF II Devpt of economic network Gr. <b>0/+</b>			Obj 2 2000-2006 Measure on industrial zones Nra <b>+</b>				PIT Pollino: Support to new business in tech. innovation Ciba+	
	Accelerate project: use of ICT & innovation WM <b>+</b>							OP CSF II Devpt of economic network Gr. <b>0-</b>	
	Obj 2 2000-2006 Measure on industrial zones Nra <b>+</b>								

## CONTRIBUTION OF BUSINESS SERVICES INTERVENTIONS TO NATURAL CAPITAL

	Natural Capital								
	Air quality	Climate Change	Water quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
<b>Financial support</b>	Obj 2 2000-2006 Business & start-up finance (mastercrafts) NRW +		Obj 2 2000-2006 Business & start-up finance (mastercrafts) NRW +		PIT Savuto: support dept of local handicraft SMEs Clba +	PIT Savuto: support dept of local handicraft SMEs Clba +	PIT Savuto: support dept of local handicraft SMEs Clba +	OP CSF III Competitiveness Gr. +	
	Obj 1 1991-93 Assistance for SMEs Sa. 0				OP CSF III Competitiveness Gr. +	Obj 2: Modernization investments. MiP ?	OP CSF III Competitiveness Gr. +		
					Obj 1 1991-93 Assistance for SMEs Sa. 0		Obj 2: Modernization investments. MiP ?		
							Obj 2 2000-2006 Business & start-up finance (mastercrafts) NRW +		
<b>Promotion of networks and partnerships</b>	PIT Valle dell'Irno: integration of research comm. & local businesses Cmpa +		Obj2 Exchange of knowledge & ptshps. GInd 0/-	PIT Valle dell'Irno: integration of research comm. & local businesses Cmpa +	POR 2000-2206: cooperation between companies Clba -	POR 2000-2206: cooperation between companies Clba -	POR 2000-2206: cooperation between companies Clba -		
	CSF III: Productive environment The. -		CSF III: Productive environment The. +		Obj2 Exchange of knowledge & ptshps. GInd 0/-			CSF III: Productive environment The. -	
					Obj 2 2000-2006 Business networks VG (-)			Obj 2 2000-2006 Business networks VG (-)	

	Natural Capital								
	Air quality	Climate Change	Water quality	Traffic congestion/intensity	Biodiversity	Land-use	Resource use	Waste	Eco-efficiency
Improving services to companies			Obj2 Strengthen physical knowledge infra. GInd 0/-		Obj2 1994-1999 improvement of services and tech. devpt. Cta 0			Obj2 1994-1999 improvement of services and tech. devpt. Cta 0	Obj2 1994-1999 improvement of services and tech. devpt. Cta 0
					Obj2 Strengthen physical knowledge infra. GInd 0/-				
Technology innovation support	OP 2000-2006 Support fo R&T, promoting information society measures. Sa +			Supporting productive investments. Ger -	PIT Pollino: Support to new business in tech. innovation Clba+	PIT Pollino: Support to new business in tech. innovation Clba +	PIT Pollino: Support to new business in tech. innovation Clba +	OP CSF II Devpt of economic network Gr. -	
					OP CSF II Devpt of economic network Gr. -	Accelerate project: use of ICT & innovation WM 0	OP CSF II Devpt of economic network Gr. -	Accelerate project: use of ICT & innovation WM 0	
					Obj 2 2000-2006 Measure on industrial zones Nra +		Supporting productive investments. Ger -		Obj 2 2000-2006 Measure on industrial zones Nra +
					OP 2000-2006 Support fo R&T, promoting information society measures. Sa +				

## ANNEX 6: DETAILED RESULTS FROM THE MACRO-ECONOMIC ANALYSIS

### 1.1 The Baseline

Tables 1 through 16 present a summary the level and changes in these indicators throughout the period of interest.

**Table 1 : Gross domestic fixed capital formation mio € 1995**

	1986	86-93	94-99	00-06	2006
Belgium	20,727	4.8	2.9	2.6	41,322
Denmark	19,935	-1.3	6.4	3.7	28,505
Germany	257,535	5.5	6.3	3.4	698,331
Greece	10,527	0.4	6.4	10.2	33,118
Spain	59,901	7.0	7.7	4.7	201,265
France	157,675	2.3	2.7	3.8	275,934
Ireland	5,348	1.2	12.9	5.6	17,998
Italy	144,792	0.8	3.3	4.1	241,973
Luxembourg	1,309	10.1	6.8	4.0	4,445
Netherlands	44,341	3.5	2.9	1.9	70,829
Portugal	10,137	9.2	9.5	3.2	39,699
UK	117,228	2.2	4.2	3.2	216,221
Austria	24,479	3.0	3.5	3.0	44,666
Finland	22,597	-4.9	7.2	4.3	31,119
Sweden	30,145	-1.4	5.5	4.2	48,871
Europe	926,676	3.3	5.1	3.7	1,993,678

Source : E3ME (2002)

**Table 2 : GVA level mio € 1995**

GVA	1986	86-93	94-99	00-06	2006
Belgium	163,996	2.2	2.2	3.0	268,293
Denmark	108,670	1.0	2.9	2.3	158,717
Germany	1,252,852	3.8	2.0	3.6	2,379,643
Greece	69,439	1.5	2.7	4.2	120,762
Spain	380,390	1.0	3.0	2.6	596,911
France	953,115	1.9	2.1	3.0	1,510,123
Ireland	26,577	5.2	9.5	7.2	111,921
Italy	683,884	2.1	1.6	2.3	1,007,054
Luxembourg	8,584	5.6	5.6	4.5	23,557
Netherlands	233,519	2.6	3.2	3.0	409,617
Portugal	56,387	5.9	4.2	3.2	120,908
UK	684,664	1.6	3.6	2.9	1,156,590
Austria	134,749	2.8	2.3	2.0	217,046
Finland	76,819	0.8	4.3	3.8	133,684
Sweden	149,574	0.6	3.9	1.5	215,551
Europe	4,983,219	2.4	2.5	3.0	8,429,012

Source : E3ME (2002)

**Table 3 : ICT investment (% total)**

	1986	86-93	94-99	00-06	2006
Belgium	0.469	0.1	0.1	0.0	1.121
Denmark	1.324	0.1	0.1	0.1	2.745
Germany	2.191	0.0	0.0	0.0	1.825
Greece	1.094	0.2	0.1	-0.1	2.015
Spain	0.219	0.0	0.0	0.0	0.223
France	1.319	0.1	0.0	0.0	2.201
Ireland	2.025	0.4	0.2	0.0	5.361
Italy	0.833	0.0	0.1	0.0	1.071
Luxembourg	0.988	0.1	0.1	0.1	2.778
Netherlands	1.082	0.0	0.1	0.1	1.935
Portugal	0.403	0.2	0.2	0.1	3.150
UK	1.100	0.1	0.2	0.2	4.461
Austria	0.590	0.1	0.0	0.1	1.518
Finland	0.846	0.1	0.1	0.0	1.724
Sweden	1.648	0.0	0.3	0.0	3.319
Europe	1.327	0.0	0.1	0.0	2.006

Source : E3ME (2002)

**Table 4 : Share of exports of high-tech products (%)**

	1986	86-93	94-99	00-06	2006
Belgium	4.277	0.2	0.1	0.0	5.446
Denmark	5.307	0.3	0.1	0.0	7.682
Germany	8.994	0.2	0.3	0.4	14.662
Greece	0.893	0.2	0.2	0.2	4.298
Spain	4.361	0.3	0.2	0.1	8.129
France	7.939	0.3	0.5	0.9	18.612
Ireland	26.674	0.1	1.0	0.4	36.059
Italy	6.638	0.4	0.1	0.0	9.845
Luxembourg	6.617	0.2	0.3	0.5	12.618
Netherlands	5.036	0.3	-0.2	0.0	5.421
Portugal	11.218	0.6	0.9	1.1	28.185
UK	10.028	0.7	0.3	0.2	17.139
Austria	3.521	0.2	0.3	0.4	8.506
Finland	3.917	0.9	1.2	0.4	19.105
Sweden	12.397	0.5	0.6	0.8	24.302
Europe	7.888	0.3	0.3	0.4	14.281

Source : E3ME (2002)

**Table 5 : Real unit labour cost (% GVA)**

	1986	86-93	94-99	00-06	2006
Belgium	0.383	4.2	1.0	1.4	0.595
Denmark	0.413	4.1	2.8	1.4	0.706
Germany	0.403	4.7	-0.1	1.0	0.573
Greece	0.237	1.9	5.5	1.9	0.504
Spain	0.278	7.9	1.8	2.4	0.627
France	0.415	3.1	1.5	1.3	0.620
Ireland	0.527	0.0	0.1	2.8	0.612
Italy	0.404	2.6	0.7	0.5	0.515
Luxembourg	0.375	4.6	1.0	3.8	0.713
Netherlands	0.413	3.4	1.1	3.3	0.690
Portugal	0.270	6.4	0.7	1.3	0.501
UK	0.463	2.2	2.8	2.1	0.806
Austria	0.380	4.9	0.3	1.9	0.597
Finland	0.510	-0.8	2.4	1.1	0.604
Sweden	0.544	1.5	1.4	2.6	0.793
Europe	0.406	3.5	1.2	1.5	0.625

Source : E3ME (2002)

**Table 6 : Employment rate (% of working population)**

	1986	86-93	94-99	00-06	2006
Belgium	36.3	0.1	0.1	0.1	38.2
Denmark	50.7	-0.3	0.5	-0.1	50.0
Germany	44.2	-0.1	-0.3	0.0	40.5
Greece	37.9	-0.3	0.4	0.3	40.4
Spain	30.2	0.7	0.8	0.6	42.7
France	38.7	-0.1	0.1	0.4	41.6
Ireland	30.9	0.6	1.6	0.4	46.3
Italy	40.3	-0.1	0.0	0.2	41.1
Luxembourg	45.7	1.4	1.4	0.0	62.0
Netherlands	33.4	0.3	0.5	0.1	38.5
Portugal	41.1	1.4	0.3	0.3	49.5
UK	43.4	-0.4	0.4	0.2	44.8
Austria	42.3	0.0	0.1	0.0	42.3
Finland	47.1	-1.5	0.4	0.2	42.0
Sweden	52.6	-0.9	0.1	0.3	49.4
Europe	40.2	0.0	0.2	0.2	42.3

Source : E3ME (2002)

**Table 7 : Labour productivity (% GVA)**

	1986	86-93	94-99	00-06	2006
Belgium	44.8	2.2	1.9	2.1	66.7
Denmark	38.2	2.3	1.9	2.2	58.8
Germany	46.4	1.6	-1.5	2.8	55.6
Greece	19.9	-0.3	1.3	3.3	27.8
Spain	28.6	3.4	0.2	1.5	36.0
France	44.6	1.9	1.1	1.5	58.3
Ireland	25.7	4.3	3.4	5.6	61.8
Italy	30.1	2.4	1.2	1.4	41.4
Luxembourg	50.8	2.0	3.4	3.3	89.5
Netherlands	47.7	1.1	1.3	2.3	65.3
Portugal	13.5	3.5	1.6	2.5	21.7
UK	27.6	2.4	2.6	2.8	45.4
Austria	41.2	2.7	3.5	1.2	65.2
Finland	33.8	2.7	3.2	2.9	58.8
Sweden	36.5	0.9	2.9	1.2	49.0
Europe	35.8	2.2	0.7	2.2	49.2

Source : E3ME (2002)

**Table 8 : Public expenditure on education (% total)**

	1986	86-93	94-99	00-06	2006
Belgium	27.8	-0.2	-0.3	-0.7	19.9
Denmark	19.7	-0.1	-0.2	-0.4	15.8
Germany	26.5	-1.0	-0.3	-0.6	14.8
Greece	26.9	0.6	-0.2	-0.9	23.6
Spain	18.9	0.6	0.0	-0.1	20.5
France	21.9	0.1	-0.2	-0.5	17.9
Ireland	33.7	-1.0	-1.2	-0.9	13.2
Italy	19.3	0.0	0.2	-0.2	19.5
Luxembourg	40.9	-1.9	-2.3	-0.1	18.5
Netherlands	25.1	-0.4	-0.5	0.0	20.3
Portugal	20.7	-0.1	-0.2	-0.4	18.0
UK	29.9	-0.2	-0.6	-0.5	21.0
Austria	16.4	-0.3	0.3	-0.1	16.2
Finland	34.3	0.6	-0.9	-0.6	28.3
Sweden	33.3	-0.2	-0.6	-0.6	22.8
Europe	24.4	-0.3	-0.2	-0.4	18.3

Source : E3ME (2002)

**Table 9 : Energy intensity (Kgoe)**

	1986	86-93	94-99	00-06	2006
Belgium	0.366	-1.7	-0.5	-0.2	0.312
Denmark	0.216	0.9	0.3	0.0	0.232
Germany	0.290	-0.3	-0.4	0.0	0.278
Greece	0.165	0.0	-0.1	0.0	0.167
Spain	0.175	0.7	-0.4	-1.1	0.169
France	0.260	-0.6	1.7	3.2	0.337
Ireland	0.170	0.1	-5.1	2.9	0.156
Italy	0.285	-0.6	-1.7	-1.7	0.216
Luxembourg	0.366	-1.7	-0.7	-0.1	0.311
Netherlands	0.317	-1.4	-2.3	0.3	0.249
Portugal	0.253	-5.0	-3.5	-0.3	0.129
UK	0.192	-0.4	-0.5	-0.1	0.171
Austria	0.279	0.6	0.6	0.1	0.306
Finland	0.254	0.0	0.3	0.0	0.257
Sweden	0.203	-0.9	-2.0	2.8	0.204
Europe	0.254	-0.7	-0.7	-0.1	0.227

Source : E3ME (2002)

**Table 10 : CO2 (ettc)**

	1986	86-93	94-99	00-06	2006
Belgium	28,732	0.9	0.6	-1.0	29,719
Denmark	16,729	-0.7	2.8	-1.1	17,496
Germany	281,663	-1.7	0.8	0.1	258,770
Greece	15,232	2.9	0.3	0.6	21,410
Spain	51,338	1.9	0.6	0.8	66,025
France	100,590	-0.6	1.5	-0.2	107,144
Ireland	8,212	2.2	1.9	-0.2	10,076
Italy	99,087	1.5	1.5	0.2	122,541
Luxembourg	2,708	1.5	-6.8	-2.1	1,775
Netherlands	42,027	1.7	-0.3	0.5	47,539
Portugal	8,228	7.0	1.5	2.1	15,870
UK	158,140	-0.1	1.2	0.0	165,544
Austria	15,150	0.2	1.2	0.1	16,777
Finland	14,877	0.6	3.9	0.8	19,900
Sweden	16,865	-2.1	1.3	2.9	18,908
Europe	859,578	-0.1	1.0	0.2	919,378

Source : E3ME (2002)

**Table 11 : SO2 (ettc)**

	<b>1986</b>	<b>86-93</b>	<b>94-99</b>	<b>00-06</b>	<b>2006</b>
Belgium	372	-6.7	-4.8	-5.9	147
Denmark	182	-3.6	-4.3	-6.2	80
Germany	5,313	-12.4	-7.6	-8.8	1,171
Greece	509	2.3	0.3	-0.3	540
Spain	2,182	-1.4	-3.8	-5.7	1,097
France	1,269	-5.3	-4.4	-6.1	530
Ireland	178	-0.2	-4.5	-8.3	74
Italy	1,651	-3.4	-4.3	-6.4	721
Luxembourg	15	-3.6	-4.6	-6.8	6
Netherlands	202	-7.5	-5.2	-5.9	76
Portugal	362	-6.6	-3.3	-1.3	219
UK	3,731	-7.5	-5.9	-7.8	1,157
Austria	91	-11.1	-4.0	-2.5	42
Finland	260	-17.1	-4.5	0.2	114
Sweden	119	-10.5	-2.8	-0.6	69
Europe	16,436	-7.2	-5.2	-6.4	6,026

Source : E3ME (2002)

## 1.2 Detailed structural funds contribution and finance tables

**Table 12 : SF investment and current expenditures 1986-2006<sup>a,b</sup> (mio €)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	122	101	80	109	129	162	241	243	271	220	328	358	303	411	242	237	231	239	203	207	131
Denmark	125	69	62	55	85	89	70	121	129	117	105	170	160	126	80	86	87	87	77	79	71
Germany	338	338	381	442	461	1,075	2,127	1,966	2,110	2,085	3,436	3,636	3,980	3,316	3,677	3,758	3,901	4,026	3,791	3,876	3,968
Greece	506	527	597	850	1,084	1,249	1,831	2,279	2,034	1,948	2,123	2,643	3,232	2,294	1,617	3,231	3,715	3,957	3,948	4,054	4,053
Spain	489	684	1,068	1,654	2,359	2,941	3,724	3,767	3,253	6,075	6,234	6,376	6,825	7,404	4,963	5,509	5,786	6,015	5,701	5,862	6,073
France	742	968	1,036	878	1,149	1,374	1,688	1,934	1,492	1,262	1,939	2,460	2,240	2,864	1,599	1,657	1,695	1,739	1,615	1,676	1,802
Ireland	349	475	401	486	594	1,013	1,081	1,255	794	1,057	1,206	1,211	1,481	1,081	636	576	546	480	351	351	290
Italy	1,348	1,262	1,140	1,541	1,583	1,727	2,296	3,599	1,513	1,881	3,015	2,894	3,670	3,758	4,067	4,615	4,825	5,135	4,165	4,337	4,519
Luxembourg	4	10	11	6	9	27	14	16	15	17	14	20	14	15	6	6	6	6	5	6	5
Netherlands	84	94	67	107	115	188	141	228	277	222	269	421	354	167	254	254	290	320	329	432	109
Portugal	298	446	641	771	779	1,690	2,325	2,745	2,224	2,435	2,962	2,941	3,219	3,105	3,212	3,167	3,146	3,087	2,500	2,587	2,643
UK	1,204	1,214	1,152	1,236	1,176	1,336	1,475	1,334	1,741	1,092	1,963	1,931	1,882	1,279	1,086	1,085	1,085	1,077	958	999	960
Austria	0	0	0	0	0	0	0	0	0	168	236	364	341	296	115	120	126	128	122	127	133
Finland	0	0	0	0	0	0	0	0	0	208	135	380	257	253	267	277	283	295	280	289	302
Sweden	0	0	0	0	0	0	0	0	0	154	95	231	376	287	270	281	291	305	287	297	309
EU15	5,610	6,188	6,637	8,136	9,523	12,870	17,012	19,487	15,853	18,942	24,058	26,036	28,331	26,655	22,089	24,859	26,013	26,898	24,332	25,179	25,369

Sources: EC (2000b,2001a,2001c), Beutel (2002), Ernst & Young (1999)

<sup>a</sup>: Sum of all SF expenditures by year including : EAGGF - Guidance (incl. fisheries), ERDF, ESF and Other operations

<sup>b</sup>: 2001-2006 period source data includes only expenditure in Objective 1 regions. 2001-2006 Year allocation estimated from total year allocation (see Beutel 2002). Expenditures in year 2000 from 2000-2006 programme funds not included.

**Table 13 : SF expenditures in manufactured capital <sup>a</sup> 1986-2006<sup>b,c</sup> (mio €)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	8	6	5	7	8	10	15	15	26	21	32	35	30	40	106	105	104	108	93	95	62
Denmark	4	2	2	2	3	3	2	4	2	2	2	3	2	2	47	50	50	50	44	44	41
Germany	55	55	62	72	76	176	348	322	584	650	1,071	1,134	1,241	1,034	1,949	2,002	2,070	2,144	2,006	2,079	2,132
Greece	208	217	246	350	447	514	754	983	1,004	956	1,095	1,479	1,726	1,185	808	2,020	2,344	2,489	2,524	2,585	2,570
Spain	226	316	493	763	1,089	1,358	1,719	1,902	1,516	2,965	3,060	3,051	3,205	3,298	3,169	3,458	3,609	3,754	3,549	3,675	3,819
France	101	131	140	119	156	186	229	262	177	150	231	293	266	341	795	816	836	858	788	819	871
Ireland	95	129	109	132	161	274	293	374	295	396	467	490	560	405	355	325	294	259	187	192	160
Italy	355	333	301	406	417	455	605	949	298	370	594	570	722	740	2,132	2,416	2,535	2,644	2,163	2,247	2,341
Luxembourg	0	1	1	1	1	3	2	2	1	1	1	1	1	1	3	3	3	3	3	3	3
Netherlands	5	6	4	7	8	12	9	15	19	15	18	29	24	11	126	123	120	122	101	97	37
Portugal	96	144	207	249	251	545	749	933	934	1,066	1,219	1,259	1,389	1,265	1,901	1,876	1,846	1,811	1,457	1,515	1,569
UK	212	213	202	217	207	235	259	234	225	141	254	250	243	165	424	423	422	420	372	385	369
Austria	0	0	0	0	0	0	0	0	0	61	80	125	117	97	57	60	63	64	61	63	66
Finland	0	0	0	0	0	0	0	0	0	76	46	130	88	83	87	90	93	97	92	95	99
Sweden	0	0	0	0	0	0	0	0	0	56	32	79	129	94	127	132	137	144	135	140	146
EU15	1,365	1,553	1,773	2,325	2,822	3,771	4,985	5,995	5,083	6,930	8,203	8,926	9,744	8,763	12,087	13,902	14,529	14,968	13,575	14,036	14,285

Sources: EC (2000b,2001a,2001c), Beutel (2002), Ernst & Young (1999)

<sup>a</sup>: Estimated from type of interventions

<sup>b</sup>: Sum of all SF expenditures by year including : EAGGF - Guidance (incl. fisheries), ERDF, ESF and Other operations

<sup>c</sup>: 2001-2006 period includes only expenditure in Objective 1 regions. 2001-2006 Year allocation estimated from total year allocation (see Beutel 2002). Expenditures in year 2000 from 2000-2006 programme funds not included.

**Table 14 : SF Finance by Member State 1986-2006<sup>a,b</sup> (mio €)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	241	265	285	349	408	552	729	835	680	758	962	1,041	1,133	1,066	884	994	1,041	1,076	973	1,007	1,015
Denmark	120	133	142	174	204	276	365	418	340	379	481	521	567	533	442	497	520	538	487	504	507
Germany	1,467	1,618	1,736	2,128	2,491	3,366	4,449	5,096	4,146	4,622	5,870	6,353	6,913	6,504	5,390	6,066	6,347	6,563	5,937	6,144	6,190
Greece	96	106	114	140	163	221	292	334	272	303	385	417	453	426	353	398	416	430	389	403	406
Spain	463	511	548	671	786	1,062	1,404	1,608	1,308	1,459	1,852	2,005	2,181	2,052	1,701	1,914	2,003	2,071	1,874	1,939	1,953
France	1,004	1,108	1,188	1,456	1,705	2,304	3,045	3,488	2,838	3,163	4,018	4,348	4,731	4,451	3,689	4,151	4,344	4,492	4,063	4,205	4,237
Ireland	84	93	100	122	143	193	255	292	238	265	337	364	397	373	309	348	364	377	341	353	355
Italy	782	862	925	1,134	1,327	1,793	2,370	2,715	2,209	2,462	3,128	3,385	3,683	3,465	2,872	3,232	3,382	3,497	3,163	3,273	3,298
Luxembourg	12	13	14	17	20	28	36	42	34	38	48	52	57	53	44	50	52	54	49	50	51
Netherlands	391	431	462	567	663	897	1,185	1,358	1,104	1,231	1,564	1,692	1,842	1,733	1,436	1,616	1,691	1,748	1,582	1,637	1,649
Portugal	90	99	107	131	153	207	274	313	255	284	361	391	425	400	331	373	390	403	365	378	381
UK	860	948	1,017	1,247	1,460	1,973	2,607	2,987	2,430	2,709	3,440	3,723	4,051	3,812	3,159	3,555	3,720	3,846	3,479	3,601	3,628
Austria	0	0	0	0	0	0	0	0	0	474	601	651	708	666	552	621	650	672	608	629	634
Finland	0	0	0	0	0	0	0	0	0	284	361	391	425	400	331	373	390	403	365	378	381
Sweden	0	0	0	0	0	0	0	0	0	511	650	703	765	720	596	671	702	726	657	680	685
EU15	5,610	6,188	6,637	8,136	9,523	12,870	17,012	19,487	15,853	18,942	24,058	26,036	28,331	26,655	22,089	24,859	26,013	26,898	24,332	25,179	25,369

Sources: EC (2000b,2001a,2001b), Beutel (2002), Ernst & Young (1999)

<sup>a</sup>: Based on total SF expenditure (See Table 1.1)

<sup>b</sup>: Based on 2002 Public finance figures of the European Union (EC 2002b). The total contribution by MS breakdown proportional to the MS total contribution to the EC budget.

**Table 15 : SF financial position by Member State 1986-2006<sup>a,b</sup> (mio €)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	-118	-164	-204	-240	-280	-390	-488	-593	-409	-538	-634	-683	-831	-655	-642	-757	-810	-837	-770	-800	-884
Denmark	5	-64	-80	-119	-119	-187	-295	-297	-211	-262	-377	-351	-407	-407	-362	-411	-433	-451	-410	-424	-436
Germany	-1,129	-1,281	-1,355	-1,686	-2,029	-2,291	-2,322	-3,130	-2,036	-2,537	-2,435	-2,717	-2,933	-3,188	-1,713	-2,308	-2,447	-2,537	-2,146	-2,267	-2,222
Greece	410	421	484	711	921	1,028	1,539	1,945	1,762	1,645	1,738	2,227	2,779	1,867	1,264	2,833	3,299	3,526	3,558	3,651	3,647
Spain	26	173	520	983	1,573	1,879	2,320	2,158	1,945	4,617	4,382	4,371	4,643	5,352	3,262	3,594	3,783	3,944	3,827	3,924	4,119
France	-262	-139	-152	-579	-555	-930	-1,357	-1,554	-1,345	-1,901	-2,079	-1,888	-2,491	-1,587	-2,090	-2,495	-2,649	-2,753	-2,448	-2,529	-2,435
Ireland	265	382	302	363	451	820	826	963	557	792	870	847	1,084	707	327	228	182	103	11	-2	-65
Italy	567	400	215	407	256	-66	-75	884	-696	-581	-113	-491	-13	293	1,195	1,384	1,443	1,639	1,002	1,063	1,221
Luxembourg	-8	-3	-3	-11	-11	-1	-22	-26	-19	-21	-34	-32	-43	-39	-39	-44	-46	-48	-43	-45	-46
Netherlands	-307	-337	-396	-459	-548	-709	-1,044	-1,129	-827	-1,009	-1,295	-1,271	-1,488	-1,566	-1,182	-1,362	-1,401	-1,428	-1,252	-1,204	-1,540
Portugal	208	347	534	640	626	1,483	2,051	2,431	1,969	2,151	2,601	2,551	2,794	2,705	2,881	2,794	2,756	2,684	2,135	2,209	2,263
UK	344	266	135	-11	-284	-636	-1,133	-1,653	-689	-1,616	-1,477	-1,792	-2,170	-2,533	-2,073	-2,470	-2,635	-2,770	-2,522	-2,602	-2,668
Austria	0	0	0	0	0	0	0	0	0	-305	-366	-287	-368	-370	-437	-501	-525	-544	-487	-502	-501
Finland	0	0	0	0	0	0	0	0	0	-76	-226	-11	-168	-147	-64	-96	-107	-109	-85	-89	-79
Sweden	0	0	0	0	0	0	0	0	0	-357	-555	-472	-389	-432	-327	-391	-411	-421	-370	-382	-376
EU15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sources: EC (2000b,2001a,2001b,2001c), Beutel (2002), Ernst & Young (1999)

<sup>a</sup>: Based on total SF expenditure (See Table 1.1)

<sup>b</sup>: Based on 2002 Public finance figures of the European Union (EC 2002b). The total contribution by MS breakdown proportional to the MS total contribution to the EC budget.

### 1.3 Detailed scenario tables

**Table 16: Gross domestic fixed capital formation (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	-0.041	-0.033	-0.053	-0.067	-0.061	-0.084	-0.098	-0.13	-0.02	-0.119	-0.325	-0.238	0.075	0.044	0.049	0.06	0.087	0.081	0.061	0.03	0.09
Denmark	0.056	-0.004	-0.016	0.01	-0.049	-0.014	-0.038	-0.091	-0.149	-0.085	-0.08	-0.126	-0.123	-0.126	-0.158	-0.092	-0.112	-0.125	-0.124	-0.123	-0.127
Germany	-0.018	-0.028	-0.034	-0.035	-0.049	-0.053	-0.051	-0.055	-0.02	-0.009	0	0.018	0.037	0.026	-0.001	-0.066	-0.005	0.057	0.084	0.104	0.139
Greece	1.149	1.442	1.56	1.897	2.208	1.922	2.652	3.399	3.743	3.467	3.838	4.398	4.24	3.187	2.252	3.705	3.976	3.875	3.573	3.317	1.966
Spain	0.171	0.221	0.317	0.433	0.609	0.769	0.987	1.174	1.052	1.487	1.58	1.594	1.603	1.632	1.517	1.552	1.573	1.585	1.518	1.49	2.245
France	0.04	0.044	0.042	0.028	0.019	0.035	0.039	0.023	0.013	0.004	-0.046	-0.027	0.043	0.046	0.098	0.094	0.111	0.104	0.1	0.101	0.139
Ireland	1.058	1.411	1.078	1.31	1.308	2.29	2.292	2.915	1.933	2.188	2.516	2.261	2.347	1.819	1.442	1.349	1.263	1.178	1.039	0.948	0.797
Italy	0.164	0.151	0.143	0.156	0.155	0.171	0.211	0.332	0.131	0.159	0.186	0.173	0.222	0.208	0.426	0.477	0.481	0.481	0.407	0.426	0.54
Luxembourg	0.045	0.059	0.072	0.067	0.084	0.128	0.127	0.136	0.126	0.141	0.151	0.162	0.175	0.167	0.215	0.255	0.225	0.231	0.266	0.299	0.287
Netherlands	0.02	-0.066	-0.197	-0.251	-0.118	-0.514	-0.7	-0.876	-1.047	-1.153	-1.329	-1.479	-1.643	-1.94	-2.026	-1.996	-1.939	-1.831	-1.723	-1.535	-2.004
Portugal	1.592	1.899	2.357	2.464	2.065	4.005	4.547	4.505	4.014	4.453	5.077	4.883	5.196	4.52	4.714	4.786	4.627	4.425	3.885	3.743	3.29
UK	0.117	0.14	0.115	0.087	0.052	0.05	0.036	-0.015	0.067	-0.078	0.071	0.042	0.042	0.003	0.016	-0.005	-0.094	0.027	0.022	0.041	-0.033
Austria	0.084	-0.005	-0.014	-0.012	-0.017	0.007	0.008	-0.032	-0.074	0.09	0.051	0.107	0.133	0.097	-0.007	-0.048	-0.044	-0.011	0.012	0.061	-0.008
Finland	-0.011	0	0.003	0.063	-0.029	-0.01	-0.016	-0.012	0.01	0.099	-0.023	0.124	0.072	0.053	0.123	0.206	0.142	0.227	0.198	0.328	0.252
Sweden	-0.022	-0.041	-0.037	-0.023	-0.054	-0.056	-0.059	-0.071	-0.065	-0.028	-0.326	-0.009	0.092	0.078	0.19	0.133	0.112	0.052	0.045	0.059	-0.077
EU15	0.1	0.109	0.114	0.126	0.127	0.167	0.199	0.213	0.175	0.209	0.219	0.231	0.273	0.215	0.232	0.261	0.292	0.333	0.321	0.342	0.313

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 17: Gross value added (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.027	0.037	0.003	0.002	0.01	-0.013	0.007	-0.001	0.053	-0.013	-0.102	-0.033	0.024	0.082	0.02	0.053	0.039	0.027	0.027	-0.011	0.005
Denmark	0.1	0.008	-0.006	-0.019	-0.012	-0.027	-0.074	-0.08	-0.087	-0.076	-0.122	-0.128	-0.141	-0.148	-0.26	-0.128	-0.167	-0.176	-0.172	-0.157	-0.187
Germany	-0.016	-0.023	-0.022	-0.029	-0.033	-0.012	0.011	0.002	0.024	-0.003	-0.002	0.015	0.037	0.021	0.14	-0.012	0.009	0.03	0.05	0.064	0.054
Greece	2.792	2.512	1.986	2.484	2.8	2.274	2.88	3.317	2.97	2.697	3.102	3.457	3.792	3.138	2.57	3.36	3.547	3.59	3.522	3.542	3.069
Spain	0.149	0.212	0.353	0.504	0.707	0.829	0.992	1.016	0.979	1.387	1.505	1.646	1.793	1.977	1.685	1.814	1.913	1.98	2.005	2.051	3.18
France	0.094	0.111	0.108	0.082	0.081	0.11	0.124	0.123	0.09	0.068	0.097	0.139	0.139	0.169	0.068	0.06	0.096	0.103	0.099	0.108	0.127
Ireland	1.731	2.41	1.85	2.29	2.554	3.842	4.009	4.198	3.105	3.152	3.394	3.615	4.142	3.717	2.851	2.859	2.749	2.678	2.628	2.522	2.092
Italy	0.32	0.258	0.221	0.261	0.24	0.253	0.301	0.413	0.189	0.204	0.253	0.23	0.278	0.255	0.24	0.31	0.316	0.284	0.231	0.235	0.33
Luxembourg	0.069	0.117	0.144	0.114	0.135	0.28	0.222	0.243	0.22	0.246	0.251	0.28	0.28	0.285	0.35	0.42	0.267	0.279	0.32	0.38	0.345
Netherlands	-0.01	-0.09	-0.176	-0.215	-0.19	-0.273	-0.365	-0.418	-0.443	-0.445	-0.58	-0.611	-0.673	-0.807	-0.824	-0.757	-0.76	-0.707	-0.661	-0.586	-0.786
Portugal	2.018	2.569	3.239	3.251	3.077	4.526	4.826	5.139	5.044	6.655	5.47	5.687	5.708	5.208	5.141	5.069	4.854	4.661	4.547	4.42	3.076
UK	0.187	0.201	0.181	0.165	0.115	0.102	0.069	0.016	0.135	-0.025	0.233	0.195	0.092	0.023	-0.004	-0.013	-0.032	-0.015	-0.015	-0.022	-0.091
Austria	0.052	-0.027	-0.025	-0.027	-0.034	-0.027	-0.035	-0.061	-0.086	0.04	0.036	0.104	0.111	0.084	-0.057	-0.034	-0.031	-0.018	-0.014	-0.002	-0.039
Finland	0.008	0.013	0.016	0.028	0.02	0.033	0.044	0.054	0.019	0.063	-0.016	0.086	0.029	0.012	0.031	0.114	0.103	0.184	0.15	0.229	0.231
Sweden	-0.007	-0.02	-0.021	-0.019	-0.024	-0.03	-0.04	-0.047	-0.033	0.027	-0.041	0.06	0.117	0.064	0.016	0.053	0.01	-0.005	-0.004	0.006	-0.042
EU15	0.17	0.173	0.177	0.196	0.197	0.257	0.309	0.366	0.351	0.483	0.479	0.532	0.574	0.569	0.554	0.569	0.588	0.603	0.603	0.617	0.584

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 18: Investment in 'knowledge / ICT' sectors (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Belgium	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.004	-0.001	-0.001	-0.001	-0.001	-0.007	0.004	0.000	0.002	0.003	
Denmark	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Germany	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	-0.003	-0.006	-0.005	-0.002	0.001	0.003	0.005	
Greece	-0.001	-0.005	-0.007	-0.009	-0.011	-0.005	-0.013	-0.020	-0.030	-0.015	-0.035	-0.042	-0.036	-0.023	-0.013	-0.027	-0.026	-0.023	-0.016	-0.009	-0.002	
Spain	-0.001	-0.001	-0.002	-0.003	-0.004	-0.006	-0.009	-0.014	-0.014	-0.019	-0.024	-0.028	-0.032	-0.036	-0.037	-0.039	-0.041	-0.043	-0.047	-0.057	-0.070	
France	0.002	0.002	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.004	0.005	0.005	0.004	0.002	0.002	0.000	0.002	0.003	0.003	0.003	
Ireland	0.005	0.015	0.016	0.020	0.026	0.037	0.033	0.088	0.073	0.080	0.106	0.115	0.156	0.188	0.189	0.166	0.150	0.150	0.150	0.143	0.140	
Italy	0.000	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.002	-0.003	-0.007	-0.003	-0.001	-0.001	-0.001	
Luxembourg	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	
Netherlands	0.000	-0.003	-0.007	-0.008	-0.011	-0.009	-0.016	-0.018	-0.014	-0.016	-0.025	-0.019	-0.021	-0.022	-0.020	-0.012	-0.010	-0.004	-0.001	0.000	-0.003	
Portugal	-0.009	-0.010	-0.012	-0.012	-0.010	-0.019	-0.021	-0.025	-0.023	-0.028	-0.034	-0.035	-0.039	-0.037	-0.039	-0.044	-0.047	-0.050	-0.052	-0.057	-0.057	
UK	0.003	0.004	0.004	0.001	0.003	0.002	0.000	-0.001	0.003	-0.001	0.002	0.002	-0.001	-0.002	-0.003	-0.005	-0.073	0.017	0.007	0.020	-0.006	
Austria	0.001	0.000	-0.001	-0.001	-0.001	-0.001	0.000	-0.001	-0.001	-0.002	0.000	0.000	0.000	-0.001	-0.003	-0.004	-0.008	-0.001	0.003	0.004	-0.002	
Finland	-0.001	0.000	0.000	-0.002	0.001	0.000	0.000	0.000	0.000	-0.001	0.000	-0.001	0.007	0.002	0.001	0.007	-0.060	0.046	0.003	0.032	0.007	
Sweden	0.002	0.001	0.000	0.002	-0.001	0.000	0.001	0.003	0.004	-0.006	0.018	0.008	0.003	0.007	0.004	0.017	0.034	-0.001	0.004	0.009	0.015	
EU15	0.000	0.000	0.000	-0.001	-0.002	-0.001	-0.003	-0.002	-0.001	-0.002	-0.003	-0.001	-0.002	-0.001	-0.003	-0.004	-0.011	-0.002	-0.002	-0.002	0.000	

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 19: Share of exports of high-tech products in total exports (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.000	0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.003	-0.001	0.000	0.010	0.017	0.014	0.014	0.024	0.008	0.009	0.014	0.016	0.016	0.016
Denmark	0.000	0.000	-0.001	-0.002	-0.002	-0.001	-0.003	0.000	0.002	0.004	0.014	0.026	0.032	0.038	0.062	0.032	0.036	0.040	0.040	0.040	0.039
Germany	-0.001	0.002	-0.002	-0.002	-0.002	-0.003	-0.005	-0.006	-0.003	-0.002	0.017	0.030	0.024	0.023	0.068	0.012	0.006	0.020	0.024	0.020	0.016
Greece	-0.001	-0.005	-0.010	-0.014	-0.014	-0.019	-0.027	-0.033	-0.049	-0.047	-0.055	-0.064	-0.076	-0.095	-0.100	-0.098	-0.094	-0.082	-0.081	-0.077	-0.096
Spain	-0.002	-0.006	-0.017	-0.029	-0.041	-0.068	-0.085	-0.074	-0.053	-0.046	-0.056	-0.040	-0.072	-0.085	-0.092	-0.099	-0.087	-0.056	-0.026	-0.005	-0.050
France	0.000	0.000	-0.003	-0.004	-0.004	-0.004	-0.006	-0.006	-0.001	0.002	0.020	0.036	0.039	0.045	0.074	0.049	0.051	0.063	0.069	0.071	0.099
Ireland	-0.017	-0.018	-0.031	-0.042	-0.036	0.009	0.008	0.068	0.036	0.044	0.134	0.111	0.132	0.158	0.205	0.156	0.151	0.176	0.180	0.173	0.134
Italy	0.000	0.000	-0.004	-0.006	-0.006	-0.008	-0.010	-0.011	-0.009	-0.008	0.003	0.016	0.015	0.014	0.045	0.000	-0.004	0.001	0.000	-0.002	-0.002
Luxembourg	0.000	0.001	-0.002	-0.003	-0.002	-0.004	-0.004	-0.004	0.002	0.005	0.020	0.039	0.045	0.054	0.071	0.064	0.066	0.076	0.077	0.076	0.083
Netherlands	0.000	-0.001	-0.005	-0.005	-0.005	-0.007	-0.010	-0.011	-0.009	-0.010	0.004	0.008	-0.005	-0.007	0.001	-0.013	-0.010	-0.001	-0.003	-0.004	-0.020
Portugal	0.050	0.194	0.349	0.327	0.668	0.933	0.566	0.600	1.051	0.547	0.862	1.030	1.572	2.206	3.035	4.353	5.373	6.092	6.654	7.088	7.893
UK	-0.005	-0.003	-0.006	-0.008	-0.009	-0.004	-0.008	-0.001	-0.004	-0.002	0.023	0.035	0.056	0.065	0.089	0.037	0.063	0.068	0.069	0.067	0.063
Austria	0.000	0.000	-0.002	-0.002	-0.002	-0.003	-0.003	-0.004	-0.005	-0.006	-0.002	0.000	-0.008	-0.010	0.024	-0.003	-0.011	-0.009	-0.013	-0.017	-0.003
Finland	-0.001	-0.001	-0.002	-0.003	-0.003	-0.004	-0.006	-0.008	-0.006	-0.003	0.001	0.017	0.021	0.025	0.036	0.017	0.004	0.019	0.023	0.019	0.013
Sweden	-0.002	0.001	-0.004	-0.005	-0.003	-0.004	-0.007	-0.009	-0.004	-0.003	0.027	0.039	0.039	0.048	0.124	0.010	0.024	0.044	0.049	0.050	0.063
EU15	0.000	0.003	0.002	0.002	0.006	0.010	0.004	0.006	0.014	0.011	0.031	0.046	0.055	0.067	0.105	0.078	0.088	0.105	0.113	0.114	0.153

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 20: Real unit of labour cost (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.021	0.010	0.030	0.031	0.033	0.054	0.046	0.054	-0.006	0.055	0.139	0.076	0.038	-0.009	0.012	-0.020	-0.025	-0.021	-0.017	-0.014	-0.036
Denmark	-0.043	0.034	0.028	0.026	0.023	0.009	0.000	0.035	0.068	0.056	0.081	0.077	0.080	0.074	0.094	0.020	0.051	0.048	0.041	0.024	0.054
Germany	0.014	0.013	0.019	0.020	0.029	0.066	0.083	0.082	0.062	0.105	0.155	0.166	0.163	0.141	0.067	0.154	0.128	0.117	0.109	0.093	0.102
Greece	-1.937	-0.712	0.324	0.137	-0.069	0.750	0.422	0.519	0.660	1.009	0.612	0.463	0.174	0.668	1.093	-0.021	-0.141	0.033	0.301	0.420	0.711
Spain	0.044	0.032	0.015	0.013	-0.025	-0.036	-0.035	-0.084	-0.125	-0.095	-0.176	-0.274	-0.321	-0.359	-0.675	-0.733	-0.793	-0.824	-0.862	-0.881	-1.185
France	-0.048	-0.042	-0.026	0.010	-0.040	-0.004	-0.003	0.003	0.029	0.047	0.037	0.020	0.033	0.029	0.098	0.079	0.041	0.035	0.037	0.037	0.065
Ireland	-1.399	-1.458	-0.427	-0.465	-0.336	-1.009	-0.422	0.007	1.069	1.026	0.583	0.352	-0.203	0.111	0.554	0.085	-0.204	-0.475	-0.693	-0.886	-0.127
Italy	-0.065	0.216	0.292	0.311	0.404	0.418	0.430	0.472	0.476	0.290	0.291	0.331	0.225	0.275	0.191	0.112	0.089	0.129	0.148	0.137	0.248
Luxembourg	-0.039	-0.089	-0.096	-0.087	-0.114	-0.229	-0.169	-0.197	-0.172	-0.228	-0.202	-0.221	-0.214	-0.202	-0.268	-0.310	-0.177	-0.200	-0.231	-0.277	-0.245
Netherlands	0.031	0.075	0.129	0.150	0.136	0.197	0.240	0.292	0.310	0.289	0.373	0.406	0.424	0.473	0.478	0.447	0.478	0.442	0.418	0.379	0.465
Portugal	0.378	0.266	-0.018	0.053	-0.574	0.482	1.496	0.795	-1.143	-2.490	-0.478	-0.576	-0.152	-0.438	-1.460	-1.334	-1.062	-0.920	-1.198	-1.143	-0.150
UK	-0.122	-0.086	-0.032	-0.023	0.007	-0.008	-0.006	-0.004	-0.107	0.013	-0.180	-0.129	-0.049	-0.014	-0.015	-0.020	-0.015	-0.049	-0.045	-0.035	0.029
Austria	-0.048	0.028	0.033	0.035	0.041	0.037	0.052	0.076	0.091	0.001	0.009	-0.060	-0.054	-0.024	0.021	0.059	0.057	0.047	0.062	0.049	0.060
Finland	-0.007	-0.008	-0.008	-0.016	-0.008	-0.019	-0.026	-0.032	-0.002	0.000	0.049	0.040	0.072	0.119	0.118	0.078	0.106	0.055	0.093	0.039	0.058
Sweden	0.001	0.004	0.000	-0.006	-0.004	-0.003	-0.001	-0.003	-0.019	-0.069	-0.026	-0.120	-0.168	-0.099	-0.030	-0.072	-0.026	-0.024	-0.019	-0.020	0.006
EU15	-0.078	-0.002	0.034	0.063	0.053	0.104	0.119	0.089	0.004	-0.144	-0.079	-0.102	-0.159	-0.152	-0.224	-0.259	-0.283	-0.298	-0.314	-0.330	-0.328

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 21: Employment as a share of the total population (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.010	0.010	0.006	0.006	0.005	0.007	0.009	0.008	0.005	0.005	0.001	0.003	0.006	0.007	-0.002	-0.006	-0.010	-0.012	-0.015	-0.020	-0.022
Denmark	0.027	0.022	0.010	0.003	0.005	-0.011	-0.034	-0.024	-0.011	-0.010	-0.025	-0.025	-0.030	-0.037	-0.088	-0.049	-0.056	-0.063	-0.062	-0.064	-0.067
Germany	-0.002	-0.004	-0.004	-0.005	0.000	0.050	0.065	0.047	0.045	0.041	0.048	0.047	0.051	0.042	0.040	0.034	0.032	0.032	0.033	0.037	0.033
Greece	0.234	0.497	0.662	0.763	0.797	0.530	0.573	0.685	0.718	0.737	0.799	0.868	0.915	0.940	0.911	0.886	0.952	1.046	1.123	1.189	1.300
Spain	0.033	0.049	0.078	0.117	0.167	0.203	0.239	0.231	0.214	0.321	0.352	0.384	0.432	0.497	0.340	0.362	0.378	0.390	0.387	0.391	0.612
France	0.016	0.024	0.029	0.030	0.025	0.041	0.046	0.050	0.048	0.047	0.055	0.066	0.072	0.084	0.069	0.064	0.062	0.062	0.060	0.059	0.075
Ireland	0.066	0.240	0.385	0.500	0.644	0.809	1.016	1.164	1.281	1.330	1.314	1.371	1.461	1.547	1.438	1.264	1.094	0.948	0.820	0.680	0.909
Italy	0.075	0.194	0.244	0.315	0.374	0.426	0.494	0.606	0.475	0.365	0.403	0.410	0.293	0.317	0.247	0.241	0.231	0.250	0.229	0.218	0.411
Luxembourg	0.011	0.006	0.010	0.013	0.016	0.026	0.030	0.031	0.025	0.009	0.028	0.034	0.040	0.037	0.038	0.047	0.038	0.037	0.038	0.043	0.043
Netherlands	0.003	-0.005	-0.021	-0.025	-0.022	-0.030	-0.046	-0.050	-0.053	-0.057	-0.083	-0.082	-0.100	-0.138	-0.142	-0.127	-0.121	-0.108	-0.098	-0.081	-0.131
Portugal	0.664	0.863	1.056	1.125	1.064	1.998	2.619	2.588	1.976	2.117	2.477	2.645	2.946	2.790	2.306	2.414	2.601	2.722	2.499	2.446	2.439
UK	0.022	0.043	0.053	0.053	0.042	0.025	0.008	-0.010	-0.003	-0.023	0.000	-0.003	-0.015	-0.027	-0.038	-0.042	-0.049	-0.050	-0.052	-0.049	-0.056
Austria	0.006	-0.001	0.002	0.002	0.001	0.002	0.003	0.002	-0.001	0.010	0.010	0.017	0.018	0.017	-0.016	0.003	0.003	0.005	0.005	0.006	-0.001
Finland	0.000	0.002	0.004	0.006	0.005	0.006	0.008	0.009	0.006	0.020	0.006	0.035	0.027	0.029	0.037	0.051	0.054	0.067	0.069	0.081	0.084
Sweden	-0.005	-0.011	-0.015	-0.018	-0.020	-0.024	-0.028	-0.032	-0.033	-0.030	-0.045	-0.042	-0.041	-0.036	-0.032	-0.026	-0.026	-0.033	-0.030	-0.025	-0.044
EU15	0.050	0.091	0.115	0.137	0.143	0.184	0.219	0.232	0.195	0.190	0.215	0.228	0.225	0.229	0.180	0.181	0.185	0.194	0.185	0.185	0.163

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 22: Labour productivity (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	-0.001	0.009	-0.013	-0.014	-0.005	-0.033	-0.018	-0.023	0.038	-0.028	-0.106	-0.042	0.007	0.062	0.024	0.071	0.067	0.062	0.069	0.045	0.069
Denmark	0.046	-0.035	-0.027	-0.026	-0.022	-0.006	-0.006	-0.03	-0.064	-0.055	-0.07	-0.077	-0.082	-0.077	-0.086	-0.032	-0.054	-0.05	-0.044	-0.026	-0.05
Germany	-0.011	-0.014	-0.013	-0.019	-0.033	-0.104	-0.124	-0.101	-0.078	-0.102	-0.119	-0.102	-0.091	-0.084	0.042	-0.094	-0.066	-0.044	-0.025	-0.019	-0.009
Greece	2.155	1.139	0.17	0.387	0.568	0.758	1.245	1.371	0.956	0.652	0.806	1.008	1.286	0.591	0.028	0.835	0.9	0.753	0.524	0.419	-0.059
Spain	0.04	0.059	0.117	0.163	0.24	0.268	0.318	0.342	0.353	0.469	0.534	0.617	0.68	0.739	0.843	0.926	1.002	1.053	1.093	1.133	1.589
France	0.054	0.049	0.034	0.007	0.044	0.009	0.01	-0.002	-0.031	-0.051	-0.041	-0.025	-0.039	-0.036	-0.097	-0.09	-0.05	-0.042	-0.041	-0.03	-0.054
Ireland	1.517	1.629	0.613	0.695	0.572	1.302	0.876	0.646	-0.635	-0.529	-0.228	0.004	0.555	0.197	-0.343	0.078	0.346	0.594	0.795	0.97	0.234
Italy	0.188	0.048	-0.018	-0.033	-0.092	-0.108	-0.1	-0.063	-0.154	-0.061	-0.028	-0.059	0.012	-0.019	0.012	0.078	0.089	0.027	-0.018	-0.018	-0.034
Luxembourg	0.046	0.104	0.122	0.086	0.103	0.23	0.165	0.186	0.174	0.234	0.203	0.221	0.212	0.223	0.287	0.341	0.205	0.218	0.255	0.308	0.274
Netherlands	-0.021	-0.075	-0.116	-0.146	-0.135	-0.19	-0.235	-0.273	-0.288	-0.273	-0.349	-0.385	-0.405	-0.449	-0.455	-0.423	-0.441	-0.417	-0.396	-0.359	-0.436
Portugal	0.373	0.535	0.863	0.862	1.07	0.989	0.33	0.767	1.836	3.363	1.66	1.699	1.404	1.328	2.013	1.906	1.608	1.408	1.569	1.523	0.52
UK	0.136	0.1	0.061	0.044	0.019	0.044	0.049	0.041	0.143	0.034	0.233	0.202	0.126	0.087	0.087	0.091	0.088	0.107	0.111	0.096	0.047
Austria	0.038	-0.024	-0.03	-0.031	-0.036	-0.031	-0.043	-0.065	-0.083	0.016	0.011	0.064	0.068	0.043	-0.021	-0.042	-0.039	-0.03	-0.025	-0.016	-0.036
Finland	0.007	0.009	0.008	0.016	0.008	0.018	0.024	0.031	0.002	0.013	-0.031	-0.001	-0.036	-0.056	-0.058	-0.008	-0.026	0.025	-0.013	0.036	0.032
Sweden	0.002	0.001	0.008	0.014	0.014	0.016	0.016	0.022	0.038	0.092	0.057	0.155	0.208	0.142	0.086	0.109	0.067	0.067	0.062	0.061	0.054
EU15	0.053	-0.012	-0.05	-0.066	-0.046	-0.072	-0.089	-0.06	0	0.139	0.098	0.127	0.142	0.14	0.208	0.219	0.231	0.226	0.239	0.248	0.237

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 23: Expenditure in education as a percentage of total public expenditure (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.001	0.003	0.004	0.007	0.010	0.015	0.026	0.029	0.034	0.031	0.044	0.048	0.039	0.052	0.023	0.023	0.021	0.021	0.017	0.017	0.010
Denmark	0.010	0.003	0.003	0.003	0.004	0.003	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.000
Germany	0.011	0.011	0.012	0.014	0.013	0.022	0.041	0.037	0.038	0.037	0.070	0.074	0.080	0.064	0.053	0.052	0.052	0.051	0.046	0.044	0.037
Greece	1.460	1.343	1.235	1.368	1.416	1.418	1.928	2.189	1.548	1.300	1.386	1.604	1.976	1.318	0.922	1.355	1.489	1.541	1.432	1.413	1.347
Spain	0.117	0.135	0.189	0.256	0.322	0.354	0.400	0.362	0.297	0.498	0.496	0.520	0.581	0.655	0.261	0.299	0.311	0.313	0.288	0.282	0.575
France	0.079	0.101	0.104	0.083	0.106	0.121	0.146	0.167	0.133	0.110	0.162	0.202	0.177	0.214	0.079	0.078	0.074	0.070	0.060	0.056	0.060
Ireland	2.097	2.757	2.335	2.671	3.015	5.035	5.050	5.436	2.842	2.899	3.226	3.000	3.620	2.473	0.913	0.759	0.705	0.569	0.390	0.346	0.232
Italy	0.177	0.151	0.122	0.151	0.134	0.140	0.164	0.204	0.076	0.078	0.122	0.115	0.145	0.140	0.114	0.128	0.128	0.133	0.102	0.102	0.124
Luxembourg	-1.808	-5.305	-4.310	-1.774	-2.116	-7.435	-2.229	-1.973	-1.328	-1.164	-0.966	-1.367	-0.859	-0.850	-0.182	-0.193	-0.183	-0.170	-0.142	-0.140	-0.076
Netherlands	-0.027	-0.028	-0.020	-0.031	-0.031	-0.048	-0.030	-0.040	-0.036	-0.014	-0.017	-0.025	-0.024	-0.012	-0.012	-0.013	-0.016	-0.018	-0.020	-0.026	-0.010
Portugal	1.099	1.392	1.793	1.945	1.679	3.355	4.222	4.426	2.823	2.551	3.274	3.349	3.813	3.280	2.174	1.949	1.781	1.633	1.254	1.220	1.079
UK	0.060	0.059	0.053	0.058	0.054	0.055	0.057	0.049	0.067	0.037	0.067	0.066	0.063	0.040	0.024	0.022	0.021	0.020	0.017	0.017	0.019
Austria	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.013	-0.019	-0.040	-0.037	-0.030	-0.009	-0.009	-0.010	-0.009	-0.009	-0.009	-0.008
Finland	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047	0.033	0.094	0.063	0.061	0.070	0.071	0.068	0.067	0.059	0.058	0.059
Sweden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.004	0.011	0.016	0.009	0.006	0.003	0.001	0.001	0.001	0.001	-0.001
EU15	0.067	0.078	0.079	0.086	0.097	0.121	0.151	0.173	0.124	0.130	0.173	0.185	0.207	0.192	0.114	0.119	0.117	0.114	0.095	0.093	0.094

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 24: Sulphur Dioxide emissions SO2 (%pa)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.015	0.013	-0.009	-0.014	-0.018	-0.007	0.004	-0.004	-0.016	-0.050	-0.076	-0.013	-0.063	-0.103	-0.055	0.027	0.012	0.070	0.328	-0.183	0.081
Denmark	0.000	0.000	0.002	0.003	-0.012	-0.007	-0.008	-0.007	-0.012	-0.020	-0.037	-0.035	-0.037	-0.045	-0.044	-0.036	-0.033	-0.039	-0.036	-0.039	-0.043
Germany	-0.006	0.009	0.004	-0.001	-0.020	-0.054	-0.062	-0.029	0.012	-0.016	-0.042	-0.036	-0.036	-0.034	-0.011	-0.010	-0.018	-0.018	-0.011	-0.004	-0.004
Greece	0.509	0.524	0.386	0.493	0.691	0.563	0.678	0.873	0.971	0.438	0.701	0.951	1.438	1.575	2.257	3.112	3.780	4.229	4.641	5.073	5.579
Spain	-0.001	0.039	0.095	0.120	0.204	0.273	0.282	0.299	0.351	0.445	0.504	0.576	0.668	0.761	0.632	0.693	0.745	0.794	0.829	0.852	1.204
France	0.029	0.036	0.039	0.033	0.040	0.053	0.067	0.081	0.071	0.072	0.078	0.089	0.096	0.105	0.069	0.081	0.100	0.108	0.109	0.109	0.129
Ireland	0.099	0.179	0.239	0.423	0.485	0.700	0.569	0.746	0.592	0.543	0.571	0.635	0.658	0.549	0.383	0.465	0.439	0.347	0.294	0.199	0.287
Italy	0.030	0.123	0.124	0.059	0.064	0.050	0.065	0.104	0.125	0.084	0.096	0.105	0.088	0.070	-0.008	-0.049	0.031	0.122	0.300	0.218	0.216
Luxembourg	0.354	0.632	0.558	0.441	1.372	1.669	1.882	2.175	1.359	0.096	0.082	0.065	0.072	0.070	0.058	0.060	0.055	0.046	0.035	0.042	0.042
Netherlands	0.003	0.003	0.000	0.003	0.001	0.000	-0.006	0.003	0.001	0.002	-0.012	-0.002	-0.011	-0.022	-0.019	0.001	0.017	0.031	0.046	0.095	0.049
Portugal	0.152	0.246	0.491	0.479	0.552	0.749	0.883	1.131	1.332	1.596	1.648	1.662	1.754	1.727	1.649	1.761	1.757	1.841	1.869	1.905	1.699
UK	-0.005	0.014	0.028	0.037	0.040	0.044	0.044	0.043	0.037	0.050	0.118	0.077	0.075	0.044	0.035	0.011	0.011	0.013	0.004	0.001	0.002
Austria	0.021	-0.004	-0.003	0.011	0.004	0.014	0.009	0.021	-0.006	0.074	-0.024	0.043	0.015	0.040	0.012	0.213	-0.064	0.028	-0.018	0.016	0.030
Finland	0.012	0.017	0.021	0.066	0.015	0.040	0.054	0.061	0.068	0.016	0.019	0.092	-0.010	0.068	0.050	0.156	0.123	0.323	0.224	0.042	0.181
Sweden	0.003	-0.014	-0.014	-0.086	-0.010	-0.010	-0.012	0.023	0.010	0.037	-0.015	-0.059	-0.033	-0.020	-0.066	-0.070	-0.091	-0.085	-0.074	-0.063	-0.048
EU15	0.018	0.043	0.048	0.045	0.060	0.063	0.071	0.099	0.115	0.104	0.120	0.134	0.147	0.153	0.150	0.183	0.213	0.254	0.302	0.290	0.300

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 25: Carbon Dioxide emissions CO2 (%pa)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	0.000	0.000	0.000	0.000	-0.035	-0.060	-0.058	-0.069	-0.028	-0.055	-0.185	-0.079	-0.037	0.008	0.018	0.075	0.023	0.082	0.172	-0.245	-0.093
Denmark	0.000	0.000	0.000	0.000	0.014	-0.010	-0.018	-0.022	-0.045	-0.060	-0.112	-0.125	-0.138	-0.151	-0.137	-0.138	-0.120	-0.126	-0.115	-0.108	-0.116
Germany	0.000	0.000	0.000	0.000	0.008	-0.324	-0.311	-0.095	0.071	0.012	-0.003	0.010	0.023	0.027	0.116	0.106	0.083	0.076	0.107	0.127	0.125
Greece	0.000	0.000	0.000	0.000	0.593	0.644	0.755	0.906	1.109	0.256	1.074	1.716	3.086	4.005	5.754	7.575	8.865	9.607	10.280	11.013	12.908
Spain	0.000	0.000	0.000	0.000	0.111	0.135	0.162	0.193	0.194	0.281	0.288	0.310	0.350	0.480	0.479	0.537	0.586	0.632	0.667	0.692	0.911
France	0.000	0.000	0.000	0.000	0.037	0.043	0.061	0.076	0.067	0.058	0.063	0.081	0.108	0.131	0.110	0.116	0.153	0.193	0.221	0.235	0.265
Ireland	0.000	0.000	0.000	0.000	0.651	0.689	0.639	0.721	0.705	0.588	0.600	0.586	0.714	0.794	0.689	0.762	0.710	0.669	0.621	0.561	0.595
Italy	0.000	0.000	0.000	0.000	0.120	0.078	0.093	0.171	0.150	0.127	0.131	0.141	0.127	0.081	-0.126	-0.254	-0.036	0.244	0.768	0.544	0.489
Luxembourg	0.000	0.000	0.000	0.000	0.029	0.010	0.069	0.076	0.094	0.005	-0.019	-0.061	-0.104	-0.102	-0.141	-0.162	-0.222	-0.254	-0.318	-0.399	-0.386
Netherlands	0.000	0.000	0.000	0.000	-0.008	-0.052	-0.082	-0.086	-0.139	-0.034	-0.323	-0.286	-0.260	-0.392	-0.308	-0.250	-0.440	-0.443	-0.347	-0.075	-0.437
Portugal	0.000	0.000	0.000	0.000	4.878	6.582	6.740	6.877	6.660	5.981	7.033	7.435	7.468	6.681	6.293	5.915	5.502	5.067	4.606	4.055	3.520
UK	0.000	0.000	0.000	0.000	0.008	0.007	0.006	0.008	0.007	0.007	0.061	0.065	0.041	0.022	0.016	0.029	0.027	0.035	0.034	0.041	0.016
Austria	0.000	0.000	0.000	0.000	-0.026	-0.011	-0.003	-0.015	-0.024	0.042	0.013	0.012	0.062	0.064	0.016	-0.002	-0.026	0.028	-0.027	0.015	0.020
Finland	0.000	0.000	0.000	0.000	0.027	0.045	0.060	0.060	0.079	-0.010	-0.027	0.033	0.034	0.088	0.123	0.204	0.208	0.341	0.279	0.232	0.331
Sweden	0.000	0.000	0.000	0.000	0.039	0.032	0.027	0.066	0.054	0.073	-0.081	-0.002	0.048	0.058	0.023	0.008	-0.043	-0.066	-0.056	-0.045	-0.053
EU15	0.000	0.000	0.000	0.000	0.416	0.484	0.492	0.585	0.690	0.778	0.894	0.960	1.098	1.179	1.460	1.658	1.814	1.932	2.032	2.058	2.163

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

**Table 26: Energy intensity (%)**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	-0.017	-0.025	-0.009	-0.010	-0.020	-0.003	-0.016	-0.014	-0.058	-0.029	0.002	-0.024	-0.043	-0.098	-0.050	-0.045	-0.047	0.006	0.171	-0.082	0.076
Denmark	-0.097	-0.009	0.006	0.021	0.006	0.021	0.066	0.070	0.070	0.057	0.087	0.094	0.104	0.104	0.214	0.099	0.137	0.140	0.141	0.124	0.149
Germany	0.005	0.008	0.007	0.009	0.013	0.001	-0.016	-0.005	-0.020	-0.015	-0.043	-0.052	-0.074	-0.058	-0.159	-0.002	-0.030	-0.053	-0.067	-0.076	-0.065
Greece	-2.414	-1.901	-1.551	-2.130	-2.339	-1.936	-2.504	-2.770	-2.378	-2.269	-2.627	-2.960	-3.238	-2.635	-2.252	-2.958	-3.107	-3.146	-3.111	-3.147	-2.891
Spain	-0.147	-0.170	-0.251	-0.373	-0.484	-0.529	-0.662	-0.675	-0.577	-0.898	-0.943	-1.024	-1.063	-1.118	-0.961	-1.035	-1.088	-1.106	-1.097	-1.122	-1.625
France	-0.082	-0.082	-0.067	-0.041	-0.045	-0.069	-0.073	-0.065	-0.035	-0.014	-0.047	-0.086	-0.076	-0.100	-0.023	-0.018	-0.046	-0.046	-0.037	-0.046	-0.043
Ireland	-1.588	-2.111	-1.504	-1.745	-1.934	-2.962	-3.224	-3.290	-2.440	-2.467	-2.687	-2.842	-3.289	-2.980	-2.335	-2.283	-2.214	-2.218	-2.224	-2.183	-1.718
Italy	-0.292	-0.195	-0.141	-0.184	-0.150	-0.145	-0.177	-0.272	-0.019	-0.065	-0.120	-0.090	-0.150	-0.129	-0.143	-0.204	-0.200	-0.180	-0.120	-0.145	-0.162
Luxembourg	0.143	0.241	0.219	0.241	0.661	0.704	0.899	1.072	0.634	-0.152	-0.172	-0.207	-0.201	-0.203	-0.276	-0.345	-0.195	-0.215	-0.265	-0.322	-0.285
Netherlands	0.012	0.093	0.176	0.218	0.189	0.271	0.355	0.418	0.438	0.443	0.556	0.593	0.644	0.762	0.777	0.720	0.719	0.679	0.665	0.693	0.795
Portugal	-1.839	-2.264	-2.670	-2.665	-2.412	-3.574	-3.704	-3.756	-3.491	-4.691	-3.507	-3.704	-3.679	-3.231	-3.231	-3.061	-2.860	-2.603	-2.474	-2.322	-1.421
UK	-0.192	-0.186	-0.153	-0.128	-0.076	-0.059	-0.027	0.024	-0.101	0.071	-0.119	-0.115	-0.014	0.026	0.041	0.028	0.049	0.028	0.022	0.027	0.097
Austria	-0.049	0.027	0.023	0.013	0.017	0.002	0.008	0.027	0.059	-0.071	-0.058	-0.101	-0.109	-0.086	0.029	0.017	-0.028	-0.005	-0.044	-0.060	-0.006
Finland	0.001	-0.003	-0.003	0.149	-0.036	-0.014	-0.010	-0.016	0.002	-0.058	0.007	-0.042	-0.032	0.014	-0.019	-0.061	-0.066	-0.082	-0.080	-0.200	-0.163
Sweden	0.010	0.021	0.021	-0.639	0.035	0.025	0.033	0.029	0.007	-0.033	0.002	-0.100	-0.145	-0.091	-0.067	-0.097	-0.075	-0.066	-0.060	-0.061	-0.029
EU15	-0.158	-0.143	-0.136	-0.171	-0.138	-0.182	-0.221	-0.265	-0.239	-0.379	-0.359	-0.398	-0.418	-0.401	-0.386	-0.371	-0.367	-0.359	-0.335	-0.340	-0.295

Source: E3ME v3.0; Cambridge Econometrics (2002).

Notes: All values are percentage difference of policy-on from policy-off scenario. When variables are measured in levels percentage changes are used. For variables measured as percentage simple difference are used. See table 5 for additional details about the variables.

## **ANNEX 7: IMPROVING POLICY COHERENCE AND INTEGRATION FOR SUSTAINABLE DEVELOPMENT: A CHECKLIST**

### **Purpose of the Checklist**

The following checklist provides guidance for policy-makers on improving policy coherence and integration for the pursuit of the sustainable development goal. It is not a compilation of "quick fix" solutions or "recipes". Rather, building on the experience of OECD countries and their concerns that achieving the sustainable development goal requires specific attention to governance practices, it draws attention to the main obstacles to be overcome at the domestic level in order to address the institutional challenges raised by the pursuit of sustainable development. Guidance is presented in the form of an outline on the different aspects of policy coherence and integration. These institutional challenges involve not only government but all stakeholders, including the business community, civil society organisations and other citizens' associations.

This checklist is intended as a contribution to building longer-term governance for sustainable development. It draws primarily on the lessons learned by OECD countries, but most of the issues raised may also be of relevance to non-OECD countries. The checklist has been developed on the basis of findings from case studies in five OECD countries, and has been discussed and amended by experts from government, academia and non-governmental organisations who participated in the seminar on Improving Governance for Sustainable Development (Paris, 22-23 November 2001). It was reviewed by the Public Management Committee of the OECD at its 25th session, Paris, 21-22 March 2002.

### **Main issues**

If sustainable development is so important, why have our commitments often failed to be effectively implemented? Part of the answer lies in the inadequacy of governance tools. Good governance and sound public management are preconditions for the implementation of sustainable development policies. These preconditions include efforts to ensure an ethical and more transparent government process, as well as decision-making practices sufficiently open to citizens. Although the precise impact of these basic "good governance preconditions" on sustainable development has not been examined, the negative impact of defective governance on economic and social development, as well as on the environment, is clear. In addition to these basic preconditions, the importance for sustainable development of key management tools such as performance measurement, mechanisms for citizen engagement, specific policy and implementation processes, and continuous strategic assessment is crucial.

### **Achieving greater internal coherence through policy integration**

The traditional response to how to integrate an emerging issue in the policy debate has been to create new institutions. The same pattern is evident with respect to sustainable development. However, new institutions may be insufficient to respond to the challenges posed to public management systems by sustainable development, as these institutions tend to be independent and fragmented, and tend to operate according to closed decision-making processes. Implementation of sustainable development goals often requires specific initiatives by government to

better integrate economic, environmental and social goals within the mandate of each existing institution.

What institutional adjustments are required to implement sustainable development policies? For instance, how to raise awareness and maintain commitment both within and outside government when short-term economic considerations such as GDP growth and inflation are the absolute priority? During economic recessions, for instance, short-term stabilisation policies are often preferred to long-term sustainable development policies.

In addition, traditional government procedures for addressing cross-sectoral and intergenerational issues often display a deficit of coherence: constitutional, legal and political obstacles to policy co-ordination exist partly in order to maintain clear distribution of responsibilities and specialisation of tasks among sectors and across levels of government. In addition, segmented working methods prevail. A lack of effective co-ordination between sectors and across the various levels of government is therefore one of the major challenges. Similarly, coherence is still lacking between the key choices made by the public sector and those made by the private sector.

Achieving greater policy coherence demands sustained efforts to improve the integration of sectoral policies, to ensure policy integration across levels of government, and to ensure consistency in the choices made by the various stakeholders. An important issue is how to advance this “integration agenda”. Central agencies have a role to play in monitoring the implementation of the sustainable development agenda, and this process should be mainstreamed into the regular policy process. Longer-term budgeting and sound regulatory instruments, for example, are important tools for integration. Governments also have a key role in providing the right incentives for improving coherence and integration, including through financial and fiscal mechanisms.

### **Involving all stakeholders**

Progress in developing further internal government mechanisms, while necessary, is not sufficient for achieving progress towards sustainable development. Major barriers to policy integration are strongly rooted in the differing stakeholder perceptions of the issues involved. Conflicting interests are often at stake in discussions about sustainable development, and trade-offs remain a major feature of policy-making. Efforts have been made to address this problem, in particular when agreement on a common interest can be identified or when the unsustainable nature of specific activities becomes obvious. Governments have an important role to play in addressing the major conflicts of interests among stakeholders, in particular by involving them in constructive discussions on these issues.

Innovative decision-making mechanisms that associate the private and public sectors as well as NGOs are in demand, and, increasingly, businesses are playing a positive role. This is particularly true of traditionally polluting (“brown”) sectors that suffered from their increasingly negative image in society. Beyond specific sectoral efforts, a commitment to reach more sustainable production and consumption habits is critical. This may require partnership between government, business and consumers.

A careful review of the mechanisms for interacting with civil society requires the capacity to identify and use the best available instruments for managing this broad involvement. If sustainable development policies are to be implemented by

governments, then they need to be supported by effective systems for broader consultation and participation throughout policy processes (e.g. to ensure transparency, fairness, realistic timeframes, procedures for managing feedback, etc.).

### **Improving knowledge management**

The complexity and unpredictability of the long-term effects of most issues related to sustainable development imply that, for most policy decisions to be made, conclusive scientific evidence is not always available. Most decisions will therefore involve stakeholders with different backgrounds and objectives. A limited capacity on the part of institutions to deal with the range of perspectives on the issue, as well as an inability to absorb complexity and to manage change, will be at odds with the need for a mutual understanding among the different disciplines, audiences or constituencies involved.

Managing knowledge for sustainable development is therefore extremely challenging. Scientific knowledge should be the basis for raising awareness in different constituencies and increasing the visibility of the sustainable development concept within and outside government (including in the media). However, since conclusive scientific evidence will not be available for many of the decisions to be made, it is crucial to ensure that sufficient debate occurs to confront values, perceptions and views, in order to take decisions that are more universally acceptable. Most importantly, perhaps, this requires a government that is prepared to judge its interventions in the policy debate appropriately.

Better inputs from scientific research in policy decisions will require that governments stimulate the production of scientific data in a number of key disciplines, and that they set clear and transparent rules for "assessing knowledge". Governments should therefore:

- Fund research based on a range of paradigms and options including "dissident opinions";
- Stipulate that scientific institutes should reflect broader societal concerns, where appropriate; and
- Organise public discussion guided by concrete scenarios on conflicting information and knowledge.

### **Checklist on Improving Policy Coherence and Integration for Sustainable Development**

The criteria presented below constitute some of the fundamental elements that need to be borne in mind when assessing institutional and decision-making practices for sustainable development. The guiding principle in the design of these criteria is improving policy coherence and integration. In this context, effective implementation of sustainable development goals requires:

- A common understanding of sustainable development;
- Clear commitment and leadership;
- Specific institutional mechanisms to steer integration;

- Effective stakeholder involvement;
- Efficient knowledge management.
- More specific questions on these points are presented below.

**Criteria I: Is there a common understanding of sustainable development?**

The sustainable development agenda has been agreed at international level, but this does not mean that the implications of economic, environmental and social sustainability are adequately brought into the general policy debate and into various sectoral policy agendas. Government should ensure that the precise economic, social and environmental realities of sustainable development, and how they relate to each other, are properly understood. Achieving this understanding will require addressing the following questions:

- √ What efforts have been made to provide clear, widely accepted and operational objectives and principles for sustainable development?
- √ Is the concept of sustainable development sufficiently clear and understood by the public?
- √ Is the concept of sustainable development well understood by public organisations and across levels of government?
- √ Are the benefits made evident with clear examples supported by statistics?

**Criteria II: Is there clear commitment and leadership?**

Clear commitment and leadership within government to sustainable development goals, and communication of this commitment, are essential to support the development of a concrete strategy and subsequent action. This commitment should come from the top, but developing leadership and capacity throughout public sector organisations is also essential.

This is particularly challenging given the potential for conflict among various interests both in the public and private sectors. Stronger political leadership is needed to shape the debate on how to take sustainable development forward. This leadership has, in turn, to address problems that result from 'silo' thinking, from a reluctance to cede decision-making authority, and from "short-termism". Achieving clear commitment and leadership implies addressing the following questions:

- √ Is there a clear commitment at the highest level for the formulation and implementation of sustainable development objectives and strategies?
- √ Is this commitment effectively communicated to the various sectors of the government machinery and across levels of government?
- √ When gaps exist between the administrative and political agendas, are specific efforts made to bridge (or fill) them?
- √ Is leadership expressed through a sequence of priorities over time?
- √ Is government maintaining a sense of urgency, despite the longer-term nature of the issues related to sustainable development?

√ Are pioneer activities of selected agencies and local communities encouraged, rewarded and disseminated?

**Criteria III: Are conditions in place to steer sustainable development integration?**

Non-environmental policy sectors should be mandated to develop their own sectoral strategies in conformity with overall objectives. This should include a critical evaluation of both the formulation of sectoral strategies and their implementation, including from the point of view of the enforcement tools used (voluntary agreements, etc.). The need to enforce sustainable development strategies through an overarching institution acting as a "catalyst" is particularly important, as is the need to ensure mechanisms for critical evaluation. Within this framework, sectoral ministries should introduce monitoring mechanisms for the early "internal" discussion of their sectoral sustainable development strategies. Environment agencies could play an important role, mainly supportive, in this process.

Increasing decentralisation of power is a feature of most OECD countries, and maintaining the right balance between local autonomy and central steering capacities is a major challenge for managing across levels of government. To support sustainable development, specific attention should be paid to translating international, national and sub-national strategic policy directions into measures that can be implemented at lower levels. This requires paying attention to the risk of fragmentation and overlap of responsibilities. In addition, decentralisation should not take place at the expense of accountability for sustainable development. Achieving policy integration for the pursuit of sustainable development goals requires addressing the following questions:

√ Is there an institutional "catalyst" (ministry, select committee, etc.) in charge of enforcing sustainable development strategies?

√ Is this "catalyst" located strategically within the government machinery (e.g. at the level of the Prime Minister's office)?

√ Are there specific reviews of laws and regulations to check whether they conflict with sustainable development, and are sustainable development objectives embedded in new legislation and regulations?

√ Are there mechanisms to ensure effective feedback between different levels of government?

√ Are organisations moving from narrow sectoral perspectives (e.g. agriculture, industry, transport, etc.) to a more "issues-oriented" agenda (e.g. air quality, mobility, poverty reduction, etc.)?

√ Is sustainable development integrated into regular government exercises (e.g. the budget process) ?

√ Is there a clear framework for assessing the performance of public organisations with regard to sustainable development?

√ Are there evaluation and reporting mechanisms to support sustainability appraisal within the public sector (i.e. indicators of progress, cost/benefit analysis, environmental and social impact assessment)?

√ Does government make effective use of these evaluation and reporting mechanisms?

√ Have specific external and independent auditing and reporting mechanisms been established?

√ Has a body been put in charge of providing guidance to organisations upon request?

#### **Criteria IV: Is stakeholder involvement in decision-making encouraged?**

Information and communication about government measures will not be sufficient to reassure stakeholders about the complex and controversial sustainable development agenda. Businesses, trade unions, NGOs and citizens' associations should be encouraged to engage actively, and governments have the responsibility to ensure that these consultation and participation processes feed effectively into decision-making processes.

Public consultation and participation should not become formal exercises, nor should they be an excuse for deferring decisions when faced with sensitive trade-offs in policy choices. Government 'culture' is still evolving towards more participatory approaches, with greater transparency in decision-making processes. A sound infrastructure for citizen involvement should address the following questions:

√ Do effective mechanisms exist within government or independent organisations for informing consumers about the consequences of their consumption decisions?

√ Has the legal framework been reviewed and adapted in order to provide clear legal provisions for consultation and participation?

√ Are there clear guidelines on when, with whom, and how consultations should be carried out?

√ Is a case-by-case approach to policy development being developed at all levels and on the various dimensions of the issues, and is the public involved in this?

√ Are mechanisms in place for the evaluation of and feedback on consultation, and for monitoring the influence of participation on decision-making?

√ Is transparency ensured? For example, has restricted information been made the exception, not the rule, both in principle and in practice?

√ Are transparency mechanisms being reinforced at different levels of government about key decisions?

**Criteria V: Is the diversity of knowledge and the scientific input to problems adequately managed?**

Improved scientific input to policy development for sustainability is necessary and requires investment in specific research fields. In addition to improving links between the scientific community and policy makers, changes in government practices will be required to assess possible options before taking decisions. The methodological limits of approaches such as contingent evaluation, as well as the fact that scientific uncertainty is sometimes downplayed in the evaluation of effects, may require a “precautionary” approach. Efforts are also needed to develop a multi-disciplinary and holistic evaluation of costs and benefits. Stakeholders should also be engaged in appraisal and evaluation systems, as required. Addressing the following questions is therefore crucial:

- √ Are the mechanisms transparent, supported by arbitration processes (e.g. a “sustainable development ombudsman”), for managing conflictual knowledge?
- √ Does government ensure that a framework is in place to allow discussions to focus constructively on areas of disagreement, by developing scenarios and options?
- √ Given that scientific and technological innovation is critical for sustainable development, is sufficient attention devoted to ensuring that the flows of information between the scientific community and decision-makers are efficient and effective?
- √ Do research policies encourage and facilitate networks of scientists and do they support the development of “joined-up” research between disciplines?
- √ Are specific efforts made to support forward-looking and policy-relevant knowledge, in particular through assuring the ‘right mix’ between public and privately funded investment in research?