COHESION POLICY AND SUSTAINABLE DEVELOPMENT

EXECUTIVE SUMMARY

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Together with

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Cohesion Policy and Sustainable Development[1,]

Key Messages

The EU Cohesion Policy has the potential to be a key tool to implement Europe 2020 and to address a wide range of EU economic, environmental and social objectives. It could and indeed should become a catalyst and driver of the transition towards smart, sustainable and inclusive growth. It currently offers both examples of significant economic and environmental "win-wins" and of "trade-offs" that fail to offer net added value. Governance performance is equally mixed, with opportunities to learn from the many positive and innovative experiences of the current governance vanguard. To effectively contribute to the shift towards a resource efficient, climate resilient and low carbon economy, i.e. a green economy, it would need to be reformed along the following lines.

Investment choices: where to spend more, where to spend less

1. ***Prioritise activities which can realise gains for the environment and economy as well as social benefits***, notably housing stock energy efficiency improvements; green infrastructure creation and restoration and ecosystem service provision; and measures for climate mitigation and adaptation. These should be the new priority areas for spending more.
2. ***Phase out, or reform*** accordingly, activities with high environmental externalities, i.e. those that entail significant ***economic-environmental trade-offs*** and that can be seen as ***environmental harmful subsidies***. Trade-offs require a ***burden of proof*** that the net benefits are worth Cohesion Policy support (e.g. to clarify whether roads offer net benefits and EU funding is truly adding value) and that impacts or risks minimised. There needs to be a concerted move away from trade-offs, so as to avoid policy dissonance – e.g. with climate change, biodiversity, water security and energy security.
3. **Investments should encourage cost-effective solutions**, e.g. by due project prioritisation and requiring user charging where relevant. Cost effective solutions that build in potential for full cost recovery and resource pricing should be sought within water, waste water and waste infrastructure investment to help meeting the EU *acquis Communautaire*. Programmes should proactively identify where working with natural capital can lead to more cost-effective solutions due to ecosystem service benefits than the "traditional" approach of using man-made capital, technological solution (e.g. water purification and provision for cities/towns, flood control, carbon storage).

Investment better - via improved Cohesion Policy governance and instrument use

4. ***Strengthen the use of conditionalities*** (e.g. gear the award of funding to meeting concrete environmental targets as specified in Partnership Contracts) and establish environmental project selection criteria; apply Green Public Procurement, EMAS, eco-labels, thermal insulation of buildings and user charging for transport; and strengthening the implementation of Water Framework Directive and existing biodiversity regulations.

[1] These key messages have been produced by IEEP on behalf of the study team comprising IEEP (lead) and GHK, Matrix, CEE Bankwatch Network, BIO Intelligence Service S.A.S. (BIO), Institute for Ecological Economy Research (IÖW) and Netherlands Environmental Assessment Agency (PBL). It is the output of the study for DGregio, contract number: 2009.CE.16.0.AT.069 and 2009.CE.16.C.AT.035). We are grateful for the support from DGRegio.

5. ***Improve the use of existing tools*** such as **SEA and EIA** and learn from their successful applications, such as use SEA in a more holistic, comprehensive and co-ordinated manner, contributing to the development of indicators, project selection criteria, EIAs/other project assessments as well as to the ex-post evaluations of OPs; integrate the wider appreciation of the values of natural capital in SEA and EIA to ensure that a fuller picture is assessed; use JASPERS technical assistance to provide environmental expertise.

6. Invest in ***environmental capacities***, institutional structures, awareness, training, and skills – and make greater use of technical assistance, guidelines ***and guidance***. These can both help with general governance, support effective governance of (new) functional geographies (e.g. river basins, coastal zones, cities), and collaborative governance on critical cross boarder issues of occasional potentially high impact high, such as flooding, invasive alien species, storms, coastal realignment due to sea level rise. This can help support improved spending.

7. Invest in and integrate ***environmental indicators*** in the system of core indicators and require their application in annual implementation and strategic reports and evaluations. These can usefully include i*mproved indicators* for ecosystem services related to green infrastructure, ***natural capital accounts*** (e.g. carbon stocks) and spatial analysis of interrelations between ecosystems, economic and social systems (e.g. cities, protected area and wider green infrastructure benefit for water provision or flood control, recreation and livelihoods.

8. Build on ***innovative instruments*** such as NECATER climate proofing, but elaborate and expand their application to biodiversity and resource efficiency proofing.

<u>Overarching Principles</u>

9. **Make the polluter pays principle and precautionary principle guiding principles underlying Cohesion Policy funding**, in order to ensure that the environmental principles that underlie EU environmental policy also underlie Cohesion Policy funding. ***The Cohesion policy should aspire to being (at least) carbon neutral and supporting no net loss of biodiversity, as well as encourage resource efficiency and progress towards decoupling regional economic development from environmental losses.*** This can help improve the quality of Cohesion Policy spending.

10. ***Improve strategic planning*** by setting out explicit environmental objectives and targets in the Common Strategic Framework and negotiating respective obligatory measures and conditionalities in Partnership Contracts negotiated with Member States.

11. **Strengthen the coherence between Cohesion Policy investments and other national and regional strategies**, by designing the Partnership Contracts and Operational Programmes so that they are informed by the already existing national and regional sustainable development strategies and respective long-term sectoral objectives, strategies, and management plans as well as by wider EU objectives, EU environmental acquis and the international context

Cohesion Policy has the potential to impact directly by its investment, by its leverage (legal framework, negotiations, and conditionalities), by leading by example and by launching innovative solutions that other may quickly learn from. This would help actors at city, regional or national levels to choose a development path to a resource efficient Europe that responds to the needs for improved territorial cohesion, builds on the diverse natural and man-made assets and infrastructures of the regions and be a catalyst in the transition to a green economy.

1. INTRODUCTION

This is the executive summary of the project 'Cohesion Policy and Sustainable Development' (contract number: 2009.CE.16.0.AT.069 and 2009.CE.16.C.AT.035) and its final report; Hjerp, P., Medarova-Bergstrom, K., Cachia, F., Evers, D., Grubbe, M., Hausemer, P., Kalinka, P., Kettunen, M., Medhurst, J., Peterlongo, G., Skinner, I. and ten Brink, P., (2011) *Cohesion Policy and Sustainable Development,* A report for DG Regio, October 2011.

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The purpose of this project was to examine how Cohesion Policy could contribute to managing the shift to the green economy and to contribute to the development of the framework for Cohesion Policy post-2013. The project focused on the four key environmental themes that were set out in the EU's Sustainable Development Strategy (SDS)[2]: climate change and clean energy; sustainable transport; conservation and management of natural resources (water resources and biodiversity); and sustainable consumption and production.

The work includes an extensive literature review, the development of an analytical framework for Cohesion Policy and sustainable development, the development of tools for the integration of environmental issues into Cohesion Policy and the identification of investments for the transition to a resource efficient, green economy. It also includes an analysis of Cohesion Policy funding allocations and an assessment of practice focusing on 26 case studies (Annex 1 presents the list of case studies).

2. THE CHANGING CONTEXT OF EU'S COHESION POLICY

The political realities of the European Union are changing, as is the context for Cohesion Policy. Long term challenges such as climate change, energy security, resource scarcity (raw materials, water) and biodiversity loss have become some of the key strategic priorities of the EU. These are coupled with short-term threats such as increasing sovereign debt and fiscal discipline which require intelligent, timely and forward-looking policy responses. At the same time there is an increasing awareness of the emerging opportunities that exist in overcoming these barriers to growth by moving towards a resource and energy efficient economy that also acknowledges the potential of green infrastructure and ecosystem services.

The overarching strategy, *Europe 2020*, which sets out the objectives for smart, sustainable and inclusive growth, responds to some of these changing challenges and opportunities. It

[2] Council of the European Union (2006) *Review of the EU Sustainable Development Strategy (EU SDS) – Renewed Strategy*, Document 10917/06, http://register.consilium.europa.eu/pdf/en/06/st10/st10917.en06.pdf

builds on the EU 20/20/20 climate and energy package through flagship initiatives such as Innovation Europe, Resource Efficient Europe and Industrial Policy for the Globalisation Era. It is also complemented by a wide range of EU strategies and commitments, for example the commitment to halting biodiversity loss and investing in restoration/green infrastructure (CBD 2010 Aichi Accord and the 2011 EU Biodiversity Strategy). Similarly the growing evidence base of the benefits of addressing environmental concerns – e.g. climate change[3], biodiversity[4] and environmental improvements for health – is changing the underlying paradigm from one where economy and environment are seen primarily as trade-offs to one where the synergies and co-benefits are increasingly appreciated.

From the perspective of Cohesion Policy and sustainable development a key issue is whether a measure (e.g. an investment) creates either an incentive for a more efficient allocation and use of resources within the economy or a less efficient use of resources (e.g. by creating negative externalities). In some cases this will lead to positive gains for the economy, environment, and social concerns, in others trade-offs. Where investments supported by Cohesion Policy deliver an economic (or social) benefit at a clear environmental cost, it could be argued that such support amounts to an environmentally harmful subsidy (EHS) that may merit attention for reform.

Overall, Cohesion Policy is still missing important opportunities to secure environmentally sustainable economic development. This is in spite of a long period of efforts to improve the integration of environmental objectives into Operational Programmes (OPs) using Commission guidance and a range of strategic and procedural tools to this end. These efforts have failed to be fully effective for a number of reasons, including poor implementation and insufficient institutional capacity. However, an important factor has been that environmental objectives are often seen as secondary to economic objectives, which has resulted in trade-offs between economic and environmental objectives being implicitly accepted in favour of development. As a result potential win-wins which might otherwise have led to more sustainable development paths have been insufficiently exploited.

Hence, the opportunity for the future Cohesion Policy is one of moving from supporting a historical "development path" where economic gain has often been at the expense of natural resource depletion or pollution to one where the many and often innovative synergies between economic, environmental and social spheres are recognised and built on and the trade-offs minimised. The EU funding instruments have a critical role to set examples of excellence and innovation and are well placed to deliver the highest EU added value by contributing towards the necessary transition towards greener sources of development.

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3 Stern (2006) Stern Review on the Economics of Climate Change.

4 TEEB (2011) The Economics of Ecosystems and Biodiversity in National and International Policy Making. Edited by Patrick ten Brink. Earthscan. London.

3. APPROACHES TO ENVIRONMENTAL INTEGRATION IN COHESION POLICY

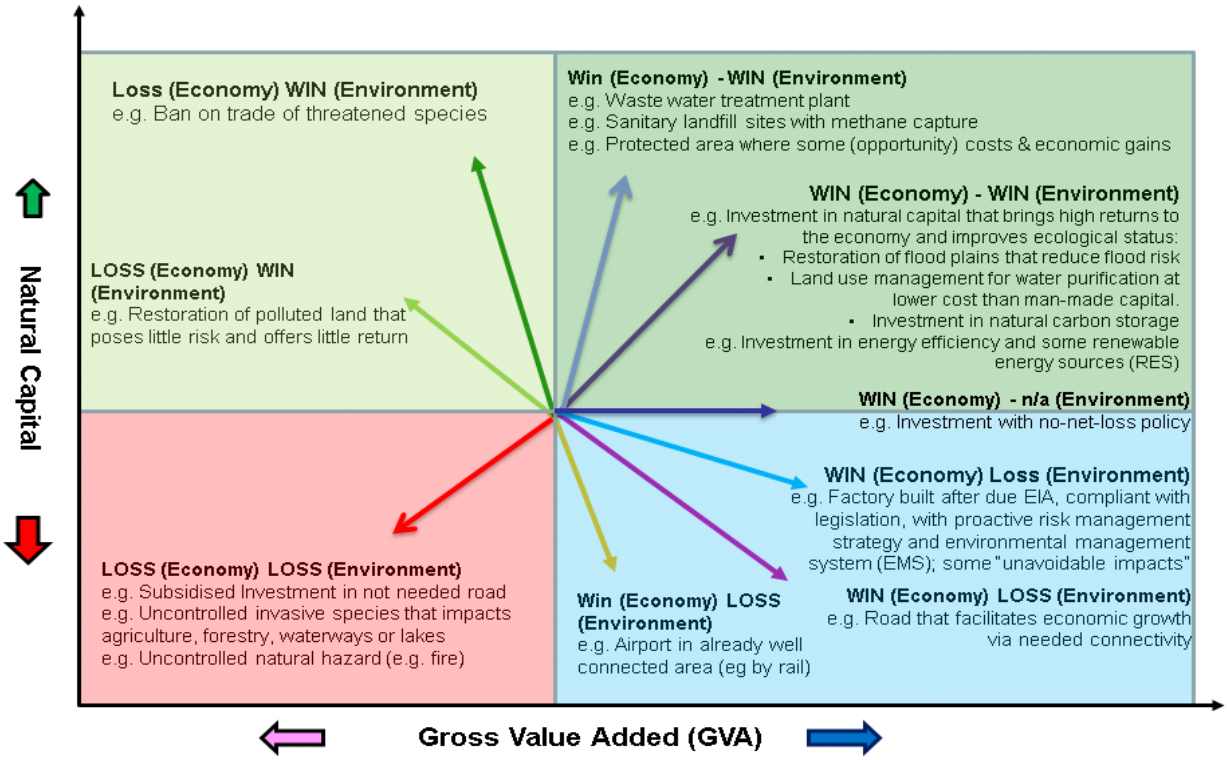
3.1 Synergies and Trade-offs

The project team has developed a framework for defining and distinguishing trade-offs (e.g. gains in one form of capital and losses in another) and more complementary beneficial outcomes, i.e. win-wins between economic and environmental objectives. In the context of this project a win-win is defined as both an economic (and potentially a social) win and an environmental win. The win-win term is a useful shorthand for the more complex reality as the first "win" may correspond to a range of economic and social benefits and outcomes, while the second "win" may amount to a range of different environmental outcomes.

The framework can also be useful for identifying contributions to regional development paths that do not result in a decline in total capital stock (or, in the terms used by Barca[5], development paths that do not lead to a decline in the total productive capacity of a region) or in contributions to development paths that still entail declines in capital stocks.

Figure 1 illustrates that in the relationship between the economy and the environment there is a range of win-win and win-loss possibilities, including different scales of wins and losses that can be provoked by policy interventions.

Figure 1: Relationships between economic and environmental outcomes from policy interventions and investments



Source: own compilation

[5] Barca, F. (2009) Am agenda for a reformed Cohesion Policy. Report prepared for DG Regional Policy, European Commission, Brussels.

3.2 Development Path Analysis

This project developed the 'Development Path Analysis' (DPA) which is an analytical approach that enables regions (or countries) to assess their current pattern of development in order to identify whether it could be made more sustainable. It is based on the assumption that certain patterns of development, or development paths, are more sustainable than others. By identifying which development paths it is currently following, a region can identify actions that will take it to more sustainable development paths.

As shown in

Table **1**, seven different development paths were identified, with particular reference to their impact on natural capital. Three pathways were grouped under "Business as Usual," three under "active environmental management" and a further two under "pursuing environmental sustainability".

Table 1. Description of the Development Paths

Development Path	Strategic Approach	Description of the types of intervention	Nature of Synergy / Trade-off with Environmental Impact
No Natural Capital impacts	**Business as usual**	Interventions with no direct natural capital impact and no obvious indirect impact – e.g. pure social capital investment	Irrelevant
A: Declining Sustainability		Interventions leading to obvious loss of natural capital (e.g. those that cause degradation of ecosystems and their services as a result of increased fragmentation of landscapes, fossil fuel energy systems and pollution)	Absolute Loss
B. Environmental Compliance, including man-made capital and environmental infrastructures		Interventions that help actors to comply with environmental legislation (e.g. regulation & standards) and to mitigate environmental impacts, such as investment in environmental infrastructure, mitigation measures)	Relative Win (but Absolute Loss)
C. Risk Management	**Active environmental management**	Interventions to reduce hazards and manage risks, e.g. (ecosystem-based) climate change adaptation and mitigation, (ecosystem-based) mitigation of floods, droughts and wild fires, and prevention of risks related to invasive alien species	Avoidance of Relative / Absolute Loss
D. Natural Capital Investment, including clean-up, restoration and conservation		Interventions to clean-up pollution and contamination from previous activities (e.g. land remediation / restoration, brownfield redevelopment), as well as conserving natural and cultural assets, including proactive investment in these assets	Absolute Win
E. Eco-efficiency	**Pursuing environmental sustainability**	Interventions to improve resource efficiency of existing activities (strong relative wins) (e.g. transport modal shift, increased energy efficiency)	Some Relative and some Absolute Wins
F. Decoupling		Interventions that have the potential to decouple economic activity from pressures on the environment/natural capital (absolute wins) (e.g. new industrial activities / technologies (e.g. renewable energy), reduced consumption patterns)	Absolute Win

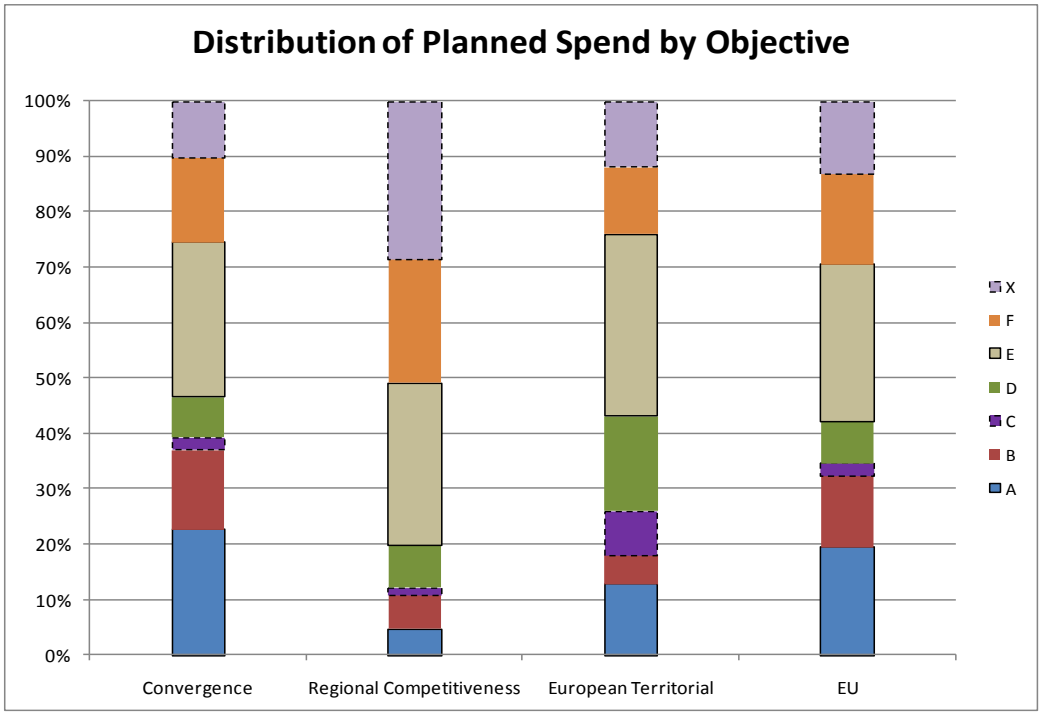
In the context of Cohesion Policy 2007-2013, it has not been possible to evaluate the actual impact of specific policies due to the limited amount of so far fully implemented interventions. Instead the approach chosen is based on a pragmatic assumption that each category of Cohesion Policy expenditure can be allocated to one of the above Development

Paths. Applying this assumption allows an estimate of the planned and allocated contribution by development path. This approach allows an ex ante judgement to be made on the contribution of EU support for pre-identified investment categories to environmental quality and economic performance. Consequently a development path analysis was conducted on the planned 2007-2013 EU Cohesion Policy Funds allocation to investigate the support provided for different "development paths", with a view to seeing where Cohesion Policy encouraged development along pathways to a more resource efficient, greener economy, and where the emphasis was elsewhere.

The distribution of EU co-financing in the framework of 2007-2013 Cohesion Policy is shown in Figure 2. It indicates that 37 per cent of the total spending under the Convergence objective is substantially more directed to Development Paths A (implying activities which lead to declining sustainability) and B (supporting investments in man-made capital linked to EU environmental *acquis* implementation) when compared with the Competitiveness and Territorial objectives (11% and 18% respectively). This is not surprising given the substantial investment in basic transport and energy infrastructure associated with the Convergence objective.

Conversely, the share of total spending under the Competitiveness objective is substantially higher (51%) for Development Paths E and F (entailing interventions promoting eco-efficiency and decoupling). Stronger support under the Competitiveness objective is to be expected, especially given the relatively greater emphasis on innovation and the potential this implies for improvements in resource efficiency, at least some of which can be expected to contribute to absolute decoupling of resource consumption from economic growth. Under all three Cohesion Policy objectives the proportion of proposed investment classified as measures intended to manage risks (Development Path C) and enhance natural capital (e.g. clean up, restoration and conservation) (Development Path D) is relatively low.

Figure 2. Distribution of allocated EU co-financing per Development Pathway under 2007-2013 EU Cohesion Policy



Source: own compilation

Clearly there are different development pathways that contribute to a varying degree of longer term sustainability. These pathways will be territorially differentiated, for example with most new Member States still needing support to meet obligations stemming from the EU environmental *acquis*. However, ultimately, Cohesion Policy co-financing should facilitate a rapid shift away from Path A, a gradual shift from pathways B (as the infrastructure becomes more complete), and towards a suitable mix of C, D, E and F depending on the economic, environmental/geographic and social contexts.

4. CASE STUDIES AND ENVIRONMENTAL INTEGRATION

While the Development Path Analysis was helpful in showing the indicative share of Cohesion Policy expenditure for the different paths of development, the analysis of 26 selected case studies provided practical lessons on the ground, offering insights into strengths and weaknesses of integrating the environment into Cohesion Policy 2007-2013. The case studies and the main issues explored are listed in ANNEX 1.

Looking at the evidence from the case studies, it appears that a large number of win-wins are generated from investments in *eco-innovation and eco-efficiency***,** in particular in old Member States. This has facilitated the achievement of synergies between different sectors of the economy and the environment. EU funding has been directed towards R&D activities and innovation that have sponsored investments in environment-friendly technologies and they also tend to have a strong focus on *Climate change and energy*. These innovations have ultimately led to the creation or expansion of niche sectors that promote growth, employment and competitiveness, while protecting the environment. This is the case, only to mention some, of the 'wave hub' in South West UK, off shore wind energy in Bremer (Germany), eco-innovation in Lower Austria and the initiative 'Energy and Environment' in Denmark.

In the case of investment in *water and waste water management*, the case studies suggest that they could easily lead to trade-offs between the economic and the environmental dimension, if appropriate charging policies are not put in place. This would imply that projects that could lead to win-wins might also lead to win-losses if the appropriate policy framework is not in place, such as the use of full cost recovery.

While *Biodiversity, ecosystems and green infrastructure* has not been a "traditional" area of focus of Cohesion Policy, there have been some valuable experiences with win-wins to date. Protected areas such as Natura 2000 sites can play an important role in creating tourism, maintaining food security, supporting physical and mental health and protecting cultural heritage values as well as sources of knowledge. Examples of case studies that have incorporated ecosystem services as part of the projects are Natureship, TIDE and SURF.

Transport is the sector where the case studies identified most of the win-losses. All transport OPs assessed as part of the case studies have an explicit preference to promote less environmental friendly modes of transport, i.e. road compared to rail. The case studies also suggest that the adequate application of SEA and EIA can mitigate some of the negative impacts of large infrastructure projects on the environment.

The case studies found that the governance structures and the policy instruments underpinning the implementation of Cohesion Policy interventions are ultimately crucial in

determining the successful implementation of Operational Programmes and avoiding trade-offs between the economic and environmental dimension. The case studies have also identified several innovative approaches in using policy instruments, such as the principle of carbon neutrality applied effectively in the French regional OP through the NECATER tool.

While Cohesion Policy funds have brought a number of spill-over effects in terms of policy innovations and an evolving toolbox for environmental integration, the effectiveness of these have so far been relatively or limited to a few front running regions or Member States. The future Cohesion Policy should therefore incorporate and implement robust environmental integration mechanisms and instruments in its reform agenda.

5. RECOMMENDATIONS

The following sections present the key recommendations from the project that build on the evidence of the final report, case studies and supporting papers. These recommendations provide an evidence base for measures that will move future Cohesion Policy towards a smart, sustainable and inclusive growth and a green economy.

5.1 Overarching principles for policy reform

There are a number of overarching principles underlying the policy reform that derive from the Europe 2020 Strategy and related Flagship Initiatives, the Budget Review and subsequent proposals for the 2014-2020 EU Multi-annual Financial Framework, the Communication on Sustainable Growth and the Barca Report. These principles aim to increase the likelihood of securing effective environmental integration, promote resource efficiency and support the move to a green economy. These principles can be summarised as:

- **Adopt the underlying principles of Europe 2020**, i.e. the need to deliver smart, sustainable and inclusive growth, as guiding principles of Cohesion Policy, **while recognising that the objectives of Cohesion Policy are wider than those of Europe 2020**, to contribute to economic, social and territorial cohesion.

- Adopt a broad and comprehensive **definition of regional productive capacity**: understand that the total productive capacity of a region includes natural capital as well as manufactured, human and social capital.

- **Ensure market and government failure, as well as equity concerns, underpin the rationale for policy interventions**: Enabling environmental costs and impacts to be formally recognised as part of an economically efficient and equitable policy, rather than a response to perceived special cases. This would require an improvement in strategic planning by setting out explicit environmental objectives, targets and conditionalities while recognising the integrated nature of development.

- **Improve investment choices**, i.e. where to spend more, where to spend less: prioritise activities which can realise win-wins, notably housing stock energy efficiency improvements, green infrastructure, ecosystem service provision and climate mitigation and adaptation. Phase out or reform activities with high environmental externalities, i.e. those that entail significant economic-environmental trade-offs (win-loss) and that can be seen as environmentally harmful subsidies.

- **Strengthen the coherence between Cohesion Policy investments and other national and regional strategies**, Partnership Contracts and Operational Programmes should be designed so that they are informed by the already existing national and regional sustainable development strategies and respective long-term sectoral management plans.

- **Make the precautionary principle, the principle of preventative action and the polluter pays principle guiding principles underlying Cohesion Policy funding**, in order to ensure that the environmental principles that underlie EU environmental policy also underlie Cohesion Policy funding, which is one of the most significant ways in which EU policy affects the environment.

It is also possible to apply specific principles that aim to address some of the more pressing environmental challenges that the EU faces, particularly climate change and biodiversity loss. In this respect, Cohesion Policy funding should be allocated where the highest EU value added can be exploited, i.e. to actions which can contribute to achieving EU's strategic objectives and targets, including those related to carbon reduction. Hence, there should be an aspiration for Cohesion Policy funds programmes to be **overall carbon neutral**, as EU funds programmes should set an example and drive the direction for other investments. It should also be remembered that, if such Member States are supported to invest in carbon intensive infrastructures now, they might be running the risk of getting into a technological lock-in and consequently high carbon path dependency.

The resource efficiency Flagship Initiative also notes the need to halt the loss and restore biodiversity and ecosystem services. Consequently, applying a **principle of biodiversity no net loss** and indeed **net positive gain** to Operational Programmes would be consistent with achieving these aims. This would require some specific requirements to ensure no net loss when planning interventions and projects that are likely to have significant impacts on land use.

5.2 Refocusing Cohesion Policy investments: Mitigating win-losses and avoiding environmentally harmful subsidies

Cohesion Policy expenditure takes place within the framework of EU legislation on the environment. While many projects address a need or demand (e.g. mobility or energy security), and are able to deliver a short term economic gain (e.g. employment, trade and GDP growth), others can come at the cost of environmental damage (CO_2 emissions and climate impacts, land use change, habitat disruption). The trade-offs in some cases may be "acceptable" given the economic and social benefits, but in other cases the overall societal balance may be a negative one. In some cases the same objectives could have been met by other means (e.g. rail not road) or the same means but integrating environmental aspects to reduce damage (e.g. reflecting EIA recommendations in routing).

Where investment has led to significant environmental damage, these can be regarded as environmentally harmful subsidies. Some traditional road and energy projects which fail to integrate environmental concerns can be seen as environmentally harmful subsidies. What may at first appear as an economic-environmental win-loss (and hence at first sight potentially acceptable) may actually turn out to be a loss-loss once the impact on public goods/wellbeing is integrated.

Therefore, trade-offs should be recognised, managed and minimised where this is possible through changes in investment patterns, the application of tools and instruments for environmental integration and the establishment of governance systems that nurture change and learning. In order to avoid investment risks contributing to declining sustainability, we recommend:

- **Explicitly and transparently identify and acknowledge trade-offs** in order to **mitigate win-losses** and ensure that loss-loss options, which might at first sight appear as acceptable win-loss trade-offs, are not taken forward;
- For win-losses, **consider whether conditional or complementary instruments might be applied** to mitigate the potential losses;
- For certain types of investment (i.e. those that are most likely to deliver environmental harm), **require that there be a burden of proof on the project applicant to demonstrate the need for the investment**, including demonstrating the value added. This is particularly important for roads;
- **Improve the use of tools** to minimise or halt losses in natural capital. Better use of procedural instruments, such as EIA and SEA and further develop proofing tools that deliver carbon neutrality and no net loss for biodiversity;
- Where there remains a need to support environmental compliance, **investments should encourage cost-effective solutions**, e.g. by due project prioritisation and requiring user charging where relevant. For such investment, there will be important geographic differences, e.g. for water supply, waste water treatment and waste management, as some countries have mature and complete infrastructures, while others require significant additional capital expenditure.
- **Better application of the provisions of existing legislation**, including the investment appraisal and user charging that are enabled by the Water Framework Directive.

5.3 Harnessing Cohesion Policy for the green economy: spending on win-wins

There is a new awareness of the wider economic and social benefits from working with natural capital[6]. This helps to use the often limited financial resources in a way that supports the delivery of biodiversity and sustainable development objectives, such as preserving and making full use of the potential of ecosystem services. Therefore, examples of investment priorities that would benefit from Cohesion Policy funding are:

- Investments for the restoration and development of **green infrastructure** where this offers important ecosystem services, e.g. watersheds for water provision/purification for cities; protected areas for recreation and tourism; river restoration; and combating fragmentation;
- Investments in **greening man-made infrastructure**, particularly rail and roads, in order to help reduce impacts and facilitate additional connectivity;

6 TEEB – The Economics of Ecosystems and Biodiversity (2008) *TEEB Interim Report*. Available from www.teebweb.org; TEEB – The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature 2009. And TEEB (2010): The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations. Edited by Pushpam Kumar, Earthscan, London. And finally TEEB (2011), The Economics of Ecosystems and Biodiversity in National and International Policy Making. Edited by Patrick ten Brink. Earthscan, London.

- Investment in the **energy efficiency of buildings** and associated **skills** and **capacities** (energy audit, energy management systems). This has major potential for savings, improved levels of disposable income and comfort, increases in the value of the housing stock, as well as contributing to emissions reductions and help job creation.
- Support for **labelling/certification schemes** to help improve the supply of information and products/services that can encourage the due evolution of social norms (e.g. product labelling, building standards and associated labels/passports).

5.4 Strengthening governance and tools for integration

Whether expenditure within the Cohesion Policy has the potential to encourage a move to a green economy depends on the instruments that are used within the Cohesion Policy cycle, i.e. at the various stages of decision-making that lead to the delivery of the investment on the ground. While actions within Cohesion Policy can act as an important driver and catalyst in the transition to a green economy, this can be enhanced through the use of a range of **conditional and complementary** instruments:

- Applying ***Green Public Procurement*** (GPP)_generally and to the transport sector in particular and make greater use of *Whole Life Costing* (WLC) within GPP;
- Applying ***EMAS and Ecolabels***;
- Applying ***standards*** for the ***thermal insulation of buildings*** in a systematic way when buildings are constructed;
- Strengthening the ***implementation of the Water Framework Directive*** (WFD), including the greater use of ***water pricing*** to assist ***full cost recovery*** and the development of guidelines for undertaking the proposed appraisal for water investment;
- Strengthening the use of ***existing EU biodiversity Regulations*** and the application of market based mechanisms for nature conservation; and
- Applying ***user charging for transport*** infrastructure.

For each of these instruments, the necessary strategic framework needs to be set out at the EU level, while Member State specific requirements should be set out at the Member State level, e.g. in the respective Partnership Contracts. These frameworks need to be reflected in lower level of governance.

Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) are relatively well established as the main environmental integration instruments in Cohesion Policy, yet their implementation and capacity to really 'green' the decision-making has so far not always been straightforward. Even so, there are number of examples of innovative application of these instruments, as shown in the case studies that ought to be taken forward in any future guidance, such as:

- Require SEAs to be undertaken in an **on-going** way (e.g. Piemonte case study).
- Review the SEA on a **regular** (e.g. bi-annual) basis (e.g. South West England case study).
- Improve the **link between SEA and the assessment of projects** (e.g. Southern Finland case study).

- Require the SEA to **include in its scope a list of indicative projects** in order that alternative projects and mitigation measures are considered at the planning stage.
- Use SEA to develop **indicators** (e.g. case study on Polish Infrastructure and Environment) and environmental criteria (e.g. Bulgarian case study).
- **Adapt** SEA to better **correspond to the scope of the Operational Programme** (e.g. Southern Finland case study).
- **Develop the EIA in relation to the SEA**, including the selection of indicators and monitoring, that would contribute to the ex-post evaluation of programmes (e.g. see the Southern Finland and Piemonte case studies).

Overall, there is scope to use SEA in a more holistic, comprehensive and co-ordinated manner, contributing to the development of indicators, project selection criteria, EIAs/other project assessments as well as to the ex-post evaluations of OPs. In addition the SEA can already be started as part of the ex-ante evaluations of the Partnership Contracts, as a safety net for the adequate incorporation of environmental impacts and benefits, which can then be further developed in the SEA of Operational Programmes.

Finally, the allocation of Cohesion Policy funds under the next programming period needs to be better informed by a systematic/consistent use of complementary **environmental indicators**. One specific area of need is that of improved indicators for ecosystem services related to green infrastructure. These can usefully contribute to ***natural capital accounts*** (e.g. carbon stocks) and spatial analysis of interrelations between ecosystems, economic and social systems (e.g. cities, protected area and wider green infrastructure benefit for water provision or flood control, recreation and livelihoods).

The development and application of environmental indicators can be arranged through a number of delivery mechanisms in the post-2013 Cohesion Policy. For example, they can be explicitly stipulated in the Partnership Contracts as well as in the other stages of the Cohesion Policy process. It is therefore important to invest in and integrate **environmental indicators** in the system of core Cohesion Policy indicators, on which further updating and guidance is required.

6. CONCLUSIONS

The EU Cohesion Policy has the potential to be a key mechanism in driving the economic, environmental and social changes required for the transitions towards a green, low carbon and resource efficient economy. It currently offers both examples of significant economic and environmental "win-wins" and of "trade-offs". The supporting environmental governance processes show also mixed results, in although there are emerging opportunities to learn from the many positive and innovative experiences of the current governance vanguard.

Cohesion Policy has the potential to drive investments, exert leverage (through legal frameworks, negotiations, and conditionalities), lead by example and promote innovative solutions that others may quickly learn from. This would help actors across the different governance levels to choose a development path to a resource efficient Europe that responds to the needs for strengthened territorial cohesion building on the diverse natural and man-made assets and infrastructures of the regions and be a catalyst in the transition to a green economy.

ANNEX 1

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Description of the case studies

Case studies	Subject of the Case Studies	Main Issues Explored	Type
Bulgaria	4 major OPs focusing on infrastructure and horizontal EE/RES measures	-	National
Southern Finland	Use of SEA and project selection criteria	- Inclusion of sustainable development - Weighting criteria - Procedural Assessment - Governance Structures	National
Poland	Win-loss scenarios in Cohesion Policy	- Inclusion of sustainable development - Procedural Assessments - Governance Structures	National
Denmark	The organisational structure of regional development authorities	- Governance Structures - Partnerships - Consultation	National
France	Adaptation of an infrastructure to climate impacts in coastal areas, France	- Inclusion of sustainable development - Procedural Assessments - Governance Structures	National
UK	N Ireland use of DPA	- Inclusion of sustainable development - Consistency - Procedural Assessments - Reporting and Evaluation	Regional
France	Carbon neutrality in OPs	- Inclusion of sustainable development - Proofing tools - Governance structures	Regional
Spain	The Green Public Procurement action plan of the Basque Country, Spain	- Weighting criteria - Financial Resources - Proofing Tools - Governance Structures	Regional
SW England	Sustainability appraisal of programme and comprehensive inclusion of environmental impacts, including Bristol	- Procedural Assessments - Reporting and Evaluation - Proofing Tools - Governance Structures	Regional
Italy	Role of sustainable development as a horizontal issue in Piedmont Region	- Inclusion of sustainable development - Assessments - Reporting and Evaluation	Regional

Case studies	Subject of the Case Studies	Main Issues Explored	Type
		- Governance Structures	
Finland	Natureship	- Inclusion of Sustainable Development - Financial Resources - Procedural Assessment - Partnerships	Interreg
UK, BE, NL, DE, SE	SURF (Sustainable Urban Fringes), North Sea Region	- Consistency - Procedural Assessments - Governance Structures	Interreg
DE, UK, NL, BE	TIDE, Integrated management of estuaries	- Inclusion of sustainable development - Consistency - Procedural Assessments - Governance Structures - Partnerships - Consultation	Interreg
Germany	Recovering from economic downturn with renewables: Bremerhaven, Germany	- Inclusion of sustainable development - Procedural Assessments - Governance Structures	City
Spain	Building on the Covenant of Mayors approach in Barcelona	- Financial Resources - Governance Structures - Partnerships	City
Poland	Urban transport projects in Krakow	- Inclusion of sustainable development - Governance Structure	City
Portugal	'Intercommunal system for distribution and cleaning of the waters of Alto Zêzere e Côa'	- Inclusion of sustainable development - Consistency - Financial Resources	Major Project
Malta	ERDF Innovation Actions Grant Scheme (Environnent)	- Procedural Assessments - Reporting and Evaluation - Governance Structures - Partnerships - Consultation	Major project
Hungary	Flood management along the Tisza River in Hungary	- Consistency - Procedural Assessments - Governance Structures - Consultation	Major project
Greece	Lake Karla	- Consistency - Governance Structures	Major project
Austria	Eco Innovation Support through Clusters in Lower Austria	- Inclusion of sustainable development - Procedural Assessments	Major project

Case studies	Subject of the Case Studies	Main Issues Explored	Type
		- Governance Structures	
Romania	Cost recovery and affordability issues in waste water treatment projects in Romania	- Financial Resources - Governance Structure	Major Project
Lithuania	Energy efficiency schemes	- Financial Resources - Governance Structures	Major project
Czech Republic	Investments in the waste sector in Czech Republic	- Consistency - Weighting Criteria - Procedural Assessments - Consultation	Major Project
Poland	Via Baltica (S8) expressway in North-Eastern Poland	- Procedural Assessments - Governance Structures - Consultation	Major Project
Poland	Warsaw-Lodz railway upgrade	- Procedural Assessments - Consultation	Major Project