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IMPACT ASSESSMENT

Accompanying the document

Proposal for a Decision of the European Parliament and of the Council

on a General Union Environment Action Programme to 2020
"Living well, within the limits of our planet"

This report commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission.

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INTRODUCTION

This impact assessment accompanies the Commission proposal for a Decision of the European Parliament and of the Council establishing an EU Environment Action Programme to 2020. In preparing the Decision, the Commission engaged in a broad public consultation and took into consideration the views of the other European Union (EU) institutions.

Environment Action Programmes have guided the development of EU environment policy since the early seventies. The Treaty on the Functioning of the EU (TFEU) introduced the requirement that "General action programmes setting out priority objectives to be attained shall be adopted by the European Parliament and the Council, acting in accordance with the ordinary legislative procedure and after consulting the Economic and Social Committee and the Committee of the Regions".[1] The 6th Environment Action Programme (6th EAP), which expired in July 2012, was the first to be adopted under this procedure. The European Commission has committed to delivering a new EAP responding to the demand from stakeholders, including the Council and the European Parliament, for a successor programme. The new programme intends to build on the value-added of the 6th EAP while addressing its weaknesses.

The context in which this programme is being developed differs from that which prevailed at the time the 6th EAP. In particular, the EU has adopted the Europe 2020 strategy -- an overarching strategy for all EU policies to create 'smart, sustainable and inclusive growth'. And while today many EU countries are struggling to cope with economic crisis, the attendant need for structural reforms offers new opportunities for all countries to move rapidly onto a more sustainable, green growth path. The new EAP should provide further impetus to put the EU on the right track towards meeting these objectives – and keep it there.

EU Environment policy has three key, mutually supporting contributions to make in this respect:

(1) ensuring that Europe's **natural capital** is sufficiently **resilient** to pressure and change

(2) ensuring that its economy is highly **resource efficient and low-carbon emitting**

(3) ensuring that the **health and wellbeing** of EU citizens continue to benefit from high degrees of environmental protection.

The new environment action programme focuses on reinforcing efforts to reach these core objectives over the period up to 2020, guided by a long-term vision for the environment in 2050. This Impact Assessment examines the main challenges to and options for ensuring that these objectives are attained as effectively, efficiently and coherently as possible.

Although various scientific assessments show a number of positive trends over the past decade, four underlying problems are hindering the achievement of these key environmental objectives: 1) inadequate **implementation** of and gaps in the existing environment policy *acquis*; 2) lack of **coherence** in addressing increasingly interlinked challenges, which also requires efforts from other policy fields; 3) problems related to incentives for **investment** in

[1] Article 192 (3) Treaty on the Functioning of the European Union

environment-related measures; and 4) insufficiently coordinated data and information on the environment and gaps in the **knowledge base**, including emerging issues and trends.

The new EAP will also aim at further strengthening both the urban and global dimensions of EU environment policy, as these spatial scales feature specific problems and challenges related to the environment and climate change which require specially targeted approaches. The substantive commitments arising from the UNCSD 2012 (Rio + 20) are also reflected in the programme.

Reflecting these considerations, the **policy options** are examined in a two-step approach. In the **first step**, three options on policy content are considered and then a **second step** addresses the question of what kind of Environment Action Programme, if any, would provide the most effective strategic framework to enable the first three specific objectives to be met.

The assessment finds that the option of **smarter implementation and responding to new knowledge** combined with a **new EAP focused on a limited set of priority objectives** offers most value-added as a strategic framework to support action. Overall, the package is expected to deliver environmental objectives effectively and efficiently.

1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Procedural issues

An Interservice Steering Group (ISG) was convened in February 2012 and met three times to discuss and advise on the process for drafting the IA. The group was chaired by DG Environment (ENV). Eighteen Directorates-General and services of the European Commission were invited to take part, and the following were actively involved in discussions: the Secretariat-General (SG), Agriculture & Rural Development (AGRI), Climate Action (CLIMA), Communications Networks, Content and Technology (CONNECT), Economic and Financial Affairs (ECFIN), Energy (ENER), Enterprise and Industry (ENTR), EuropeAid Development & Cooperation (DEVCO), Health and Consumers (SANCO), Internal Market and Services (MARKT), Joint Research Centre (JRC), Maritime Affairs and Fisheries (MARE), Research and Innovation (RTD), Mobility and Transport (MOVE), as well as the European External Action Service (EEAS).

1.2. External expertise and consultation of interested parties

The views and opinions expressed by a broad range of stakeholders in various meetings and events as well as through a specific online public consultation were carefully assessed and taken into account in the preparation of this IA.

Stakeholders were invited to express their views – including written inputs - on the final assessment of the 6th Environment Action Programme and the next steps in a stakeholder consultation meeting on 29 March 2011.[2] On that occasion, there was broad consensus on the need for rapid adoption by the Commission of a 7th EAP.

Member States and key stakeholder groups were consulted on their priorities for a new EAP at various events held between 2010 and 2012, including a 2-day conference 'Europe Enviornment Policy: what's next?'...Towards a 7th environment action programme', organised by the Belgian Presidency in November 2010,[3] a workshop on 'Priorities for the 7th Environment Action Programme' organised by the European Parliament in January 2012,[4] and an expert workshop organised by the Danish Presidency in February 2012[5] attended by some 150 participants.

The Commission conducted a 12-week long public consultation via the EUROPA website, consisting of a consultation paper setting out the Commission's preliminary views on priorities that should guide environment policy up to 2020 and a questionnaire reflecting the contents of the paper. The consultation received 300 responses, of which 136 (45%) came from individuals and 164 (55%) from organisations. Out of the total 164 responses on behalf of organisations, the majority came from companies/business associations (57), followed by NGOs (47), regional/local public authorities (21), national authorities (10), and "others" (28).

Overall, 232 of the 300 respondents agreed that a new EAP would add value (63% of whom strongly agreed) whereas only 1.3 % of the respondents thought that a new EAP would have no added value. In terms of how it could bring added value to EU environment policy,

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2 http://ec.europa.eu/environment/newprg/consult_2011.htm

3 http://www.eapdebate.org/en/latest-events /

4 http://www.europarl.europa.eu/document/activities/cont/201203/20120306ATT40113/20120306ATT40113EN.pdf

5 http://www.mim.dk/eng/EU2012/miljohandlingsprogram/expert_workshop/

respondents attributed the highest value to 1) developing a strategic agenda for the environment, 2) ensuring full implementation of agreed policies and legislation and 3) providing a coherent framework and furthering the integration of environmental considerations into other policies.

A further 40 written contributions were received from businesses, NGOs, national authorities and other organisations/individuals during the public consultation period. Almost all of them agreed that ensuring proper implementation and enforcement of environmental policies and legislation is a priority. NGOs highlighted also the need to set ambitious targets to stimulate and guide action by different stakeholders. Businesses stressed the need for innovation and resource efficiency while taking into account competitiveness concerns, and to prioritise the implementation and streamlining of existing legislation over the development of new legislation. A detailed description of the main results, different positions expressed, and an analysis of the inputs is included in Annex 1.

Various specific stakeholder groups, including SMEs, NGOs and national, regional and local authorities also conveyed their priorities and concerns in bilateral meetings with the Commission during the preparation of this IA.

Stakeholders were also consulted on a number of key themes addressed in the proposed new EAP in specific stakeholder consultations organised by the European Commission within the last two years, including resource efficiency, the low-carbon economy, biodiversity, water and sustainable consumption and production.[6] These consultations went into considerable detail on each of these subjects. The IA also draws on numerous studies commissioned from external consultants to support these initiatives.

Finally, this Impact Assessment draws on the final evaluation of the 6th EAP outlined in section 2.1 and in more detail in Annex 7, as well as on an independent assessment of the Programme, the results of the public consultation as well as various recent reports and studies, notably the European Environment Agency's 'European Environment – State and Outlook 2010' report (SOER 2010).[7]

1.3. Consultation of other EU institutions

On 30 April 2007, the Commission adopted a Communication to the Council, the European Parliament (EP), the Committee of the Regions (COR) and the European Economic and Social Committee (EESC) on the Mid-term review of the Sixth Community Environment Action Programme.[8] The Council adopted conclusions on 28 June 2007[9] and the European Parliament adopted a resolution on 10 April 2008.[10]

As requested by the 6th EAP itself, the Commission adopted during the last year of the Programme a Communication to the Council, the EP, the CoR and the EESC on the Final Assessment of the 6th Community Environment Action Programme.[11] On 10 October 2011, the Council adopted conclusions[12] in which it invites the Commission to present a successor

6 http://ec.europa.eu/environment/consultations_en.htm
7 http://www.eea.europa.eu/soer
8 COM(2007) 225 final
9 "New Impetus for EU Environmental Policy: Mid-term review of the 6th Community Environment Action Programme" - 2812th ENVIRONMENT Council meeting
10 2007/2204(INI)
11 COM(2011)531
12 "Assessment of the sixth community environment action programme and the way forward: Towards a 7th EU environment action programme"

to 6th EAP in early 2012 and specifies a number of challenges and objectives that it should address. The European Parliament adopted a resolution on 20 April 2012,[13] in which it urges the Commission to present a proposal for a 7th EAP without delay. The European Economic and Social Committee adopted an opinion on the Final Assessment of the 6th EAP on 18 January 2011.[14]

In order to provide the Commission with an indication of their views on a new programme, the Council adopted on 20 December 2010 conclusions on 'Improving environmental policy instruments'[15]; the Committee of the Regions voted an outlook opinion on 5 October 2010 'The role of local and regional authorities in future environmental policy'[16] and the European Economic and Social Committee adopted on 25 April 2012 an exploratory opinion on 'the Seventh Environment Action Programme and follow-up to the sixth EAP'.[17] The Committee of the Regions is expected to adopt an Opinion "Towards a 7th EAP: Better implementation of EU environmental law" in November 2012.

Finally, on 11 June 2012, the Council adopted conclusions on 'Setting the framework for a Seventh EU Environment Action Programme',[18] which underline that the 7th EAP should set out the key elements of the future environment policy and be linked to the Europe 2020 Strategy and other relevant strategies. They also call for an ambitious and compelling 2050 vision and underscore the importance of better implementation and strengthening of existing environment policy and legislation and supporting the transition to a green economy. The Council also highlighted priorities it would like to see addressed in the Commission's proposal, in particular related to health and environment.

1.4. Consultation of the Impact Assessment Board

The draft Impact Assessment report was submitted to the Impact Assessment Board (IAB) in June 2012. In its opinion, the IAB recommended that the report should be improved in a number of respects:

– better explain the purpose of the initiative and describe the value-added of the 7th EAP in relation to existing strategies in addressing the major environmental problems the EU is facing;

– strengthen the baseline discussion including the evolution of the current situation with no new EAP;

– improve the definition of the specific objectives and better explain their correspondence to the identified problem drivers;

– clarify the monitoring and evaluation arrangements;

– better define the policy options and how the options differ from the status quo by comparing the options against a set of criteria that measure effectiveness, efficiency and coherence.

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13 EP Resolution on the review of the 6th Environment Action Programme and the setting of priorities for the 7th Environment Action Programme – A better environment for a better life (2011/2194(INI))

14 CESE 1903/11 fin

15 Council Conclusions on "Improving environmental policy instruments" (5302/11), 20 December 2010.

16 2011/C 15/02

17 CESE 114/2012 fin

18 11186/12

The IA was revised accordingly. To address the IAB's recommendation to improve the accessibility of the report, a list of studies and a glossary have been added as Annex 8 and 9.

2. PROBLEM DEFINITION, POLICY CONTEXT AND SUBSIDIARITY

2.1. Context: lessons learned from the 6th EAP and its evaluation

The 6th Environment Action Programme (6th EAP), which set out the framework for environmental policy-making in the EU for 2002-2012, expired in July 2012. The 6th EAP identified four priority areas for action: climate change, nature and biodiversity, environment and health and natural resources and waste and led to the development of Thematic Strategies in the fields of soil, the marine environment, air, pesticides, the urban environment and natural resources and waste recycling.

In 2011, the Commission carried out a final assessment of the 6th EAP,[19] based on the SOER 2010 and on an independent evaluation.[20] It concluded that the Programme helped to provide environment policy with an overarching framework for a given period (2002-2012), during which environmental legislation was largely consolidated and completed to cover almost all areas of environment, with the exception of soil. However, the assessment was unable to establish whether the Programme was the leading factor behind these developments.

Meanwhile, the past few years have witnessed a number of significant policy developments, such as the adoption of the EU Climate and Energy Package in response to heightened concerns about climate change, and EU strategies to improve resource efficiency and tackle biodiversity loss. The pace and extent of these developments have led to calls for an overarching framework that pulls them together into a coherent narrative and serves as a guide for environment policy developments in the near to medium-term.

Stakeholders also see added value in a strategic document that demonstrates how environment policy contributes to the wider Europe 2020 agenda. Indeed, the final assessment of the 6th EAP noted that the programme complemented the Lisbon Strategy and the Sustainable Development Strategy and helped strengthen integration of environmental concerns in all policy areas.

The 6th EAP also served as a reference for Member States and local authorities in defending environment policy against competing policy demands, securing appropriate funding and providing predictability for business. The programme also helped to build political will for the adoption of effective targets and timetables and their subsequent implementation. However, the assessment pointed to some important shortcomings: in particular, the inclusion of an issue or action in the EAP was no guarantee that Member States would sign up to specific related policy proposals, and the actual design of the programme lent itself towards accommodating a large number of specific actions varying both in scope and effect, which hindered its overall effectiveness.

The new EAP should retain the successful elements of the 6th EAP and draw on lessons learned. The proposed approach is therefore to establish the overarching environment policy objectives that should drive environment policy development in the current context so as to contribute to further environmental improvements as well as to the EU's broader objectives of

[19] Communication on the Final Assessment of the 6th Community Environment Action Programme COM(2011)531

[20] http://ec.europa.eu/environment/newprg/pdf/Ecologic_6EAP_Report.pdf

smart, sustainable and inclusive growth. The four priority areas for action identified in the 6th EAP are re-clustered into three thematic policy objectives, reflecting the recent policy developments described above:

(1) To protect, conserve and enhance the EU's natural capital

(2) To turn the EU into a resource efficient and more competitive low-carbon economy

(3) To safeguard EU citizens from environment-related pressure and risks to health and wellbeing.

Conserving and restoring our natural capital is an important part of transforming Europe into a competitive and sustainable economy, and is fundamental to the overall resilience of our society. Measures to improve resource efficiency and reduce greenhouse gases can deliver growth and jobs whilst tackling environmental problems and reducing the risks associated with excessive use of natural resources. In particular, awareness of the need for and benefits that resource efficiency can bring has increased since the 6th EAP. Finally, tackling environment-related health problems resulting from human activities, and working with nature to improve the living conditions of EU citizens and safeguard them from changes brought about by climate change and other pressures will benefit health and wellbeing and secure long-term prosperity. These three thematic policy objectives are a coherent way to group the main actions to be carried out over the period of the new EAP.

The EU is a highly urbanised society, with approximately 70% of EU citizens residing in urban areas – a figure set to increase to 80% by 2050. Cities have to cope with a large number of environmental problems that come with high population density and rapid development, and are responsible for implementing a broad range of legislation. The new EAP should serve to further support these efforts and promote urban sustainability.

As the EU is also affected by the state of the global environment and the environment of other countries, particularly those in its neighbourhood, the new EAP should serve to enhance the external dimension of its environment policy and secure commitment to a number of priorities to guide its international action in this area in keeping with Rio+20.

2.2. What is the environment problem today?

2.2.1. The state of the global environment

The Fifth edition of the Global Environmental Outlook (GEO-5)[21] surveys the state of the global environment today. It identifies many concerns, and concludes that systemic challenges and trends related to unprecedented rates of social, economic, technological and environmental change are at the root of these problems. Global population increases and rising living standards are driving increases in consumption. Increased consumption is in turn driving land conversion and deforestation, adding to the pressure on natural resources and ecosystems all over the world, increasing the cost of and competition for essential raw materials, minerals and energy, and generating more pollution.

The erosion of our natural capital poses the risks of irreversible changes that could endanger two centuries of rising living standards[22] and cause major adverse health impacts.[23] As

[21] UNEP, GEO5, June 2012.

[22] "Environmental Outlook to 2050", OECD, 2012

pointed out in the recent report of the UN High-Level Panel on Sustainability, "*We can no longer assume that our collective actions will not trigger tipping points as environmental thresholds are breached, risking irreversible damage to both ecosystems and human communities*."[24]

2.2.2. The state of the European environment and challenges ahead

The European Environment Agency's State of the Environment Report 2010 provides information about the challenges facing Europe's environment. It shows that despite progress in some areas, in others the EU is not on track to meet many of its environment-related targets and objectives. The report concludes that while the prospects for Europe's environment are mixed, there are opportunities to make the environment more resilient to future risks and changes. The following section briefly summarises the challenges relating to the three policy objectives identified above[25]:

The state of the EU's natural capital[26]

Natural capital plays an essential role in ensuring that our environment is resilient in the face of pressure, for instance from climate change, and that our economy remains competitive. Yet Europe's natural capital, biodiversity and ecosystems services continue to be degraded and depleted, and the EU failed to to reach its target of halting bioidiversity loss by 2010.

While there has been an improvement in the conservation status of some European protected species and habitats, a majority remains in unfavourable conservation status and key pressures and drivers of degradation and loss continue to put significant pressure on ecosystems. For instance, soil degradation is accelerating due to erosion, loss of organic matter, sealing, contamination, etc, with negative effects on human health, ecosystems and the climate, as well as on our economy.

Water quality has improved, but progress has been mixed, and challenges remain in meeting the targets of good water status, including in relation to ecological and chemical parameters as well as the minimum water flow necessary for the environment (e-flow).

Table 1. Indicative summary table of progress towards meeting environmental targets or objectives, and highlights of related trends over the past 10 years (based on SOER 2010)

Environmental Issue	***EU27 target / objective***	***EU27 on track?***
The contribution of natural capital to ensuring the EU's ecological and climate resilience		
Pressure on ecosystems (from air pollution, eutrophication)	*Not to exceed critical loads of eutrophying substances*	*EU not on track; improving trend [but more than 40% of sensitive terrestrial and freshwater ecosystem areas still subject to*

[23] WHO, "Ecosystems and Human Well-being", Millennium Ecosystem Assessment Health synthesis. http://www.who.int/globalchange/ecosystems/ecosys.pdf

[24] Resilient People, Resilient Planet: A future worth choosing. At: http://www.un.org/gsp/report

[25] The SOER 2010 provides a detailed overview of the state of the environment.

[26] Natural capital consists of natural assets in their role of providing natural resource inputs and environmental services for economic production. It is generally considered to comprise three principal categories: natural resource stocks, land and ecosystems. All are considered essential to the long-term sustainability of development for their provision of "functions" to the economy, as well as to mankind outside the economy and other living beings. (OECD).

		atmospheric nitrogen deposition beyond critical loads; agricultural nitrogen loads are expected to remain high; the increase of atmospheric deposition of nitrogen affects marine environment]
Conservation Status (safeguard the EU's most important habitats and species)	*To achieve favourable conservation status, set up Natura 2000 network*	*Mixed progress in the EU [in 2008, only 17% of the target species under the Habitats Directive were considered to have a favourable conservation status]*
Biodiversity (terrestrial and marine species and habitats)	*To halt the loss of biodiversity*	*EU not on track; worsening trend [biodiversity is still in decline; increase of invasive marine and estuarine alien species; loss of old-growth forest…]*
Soil degradation (soil erosion)	*To prevent further soil degradation and preserve its functions*	*EU not on track; worsening trend [decline of natural and semi-natural habitats]*
Water quality (ecological and chemical status including environmental flow - 'e flow')	*To achieve good ecological and chemical status of water bodies*	*Mixed progress in the EU [significant number of water bodies at high risk of not achieving good status by 2015]*
Water pollution (from point sources)	*To comply with urban wastewater treatment and industrial installations requirements*	*EU on track with an improving trend but gaps remain [implementation of Urban Wastewater Treatment Directive incomplete in many countries; point sources are still significant in parts of Europe]*

Resource efficient, low-carbon growth

Over the past decade, the EU has reduced its greenhouse gas (GHG) emissions and is on track to meet its Kyoto Protocol commitments. Significant progress has also been made towards meeting targets on energy efficiency and on promoting energy use from renewable sources. However, global and European cuts in GHG emissions are far from sufficient to keep average world temperature increases below 2°C. Linked to this, the issue of water stress is of increasing concern.

At the same time, environmental regulation and rising costs associated with increasingly scarce natural resources have driven eco-innovation and led to increased resource efficiency through a relative decoupling of resource use, emissions and waste generation from economic growth in some areas. However, absolute decoupling remains a challenge, especially for households and SMEs, and overall, current patterns of resource use are still far from sustainable.

There has also been some progress in the EU to tackle challenges related to waste and unsustainable use of natural resources. Member States have increased waste management and recycling efforts and some are global leaders in waste recycling technology. However, these achievements are not equally spread amongst sectors and countries, and several waste streams

continue to grow. On average only 40% of solid waste in the EU is re-used or recycled, with the rest going to landfill or incineration.

Table 2. Indicative summary table of progress towards meeting environmental targets or objectives, and highlights of related trends over the past 10 years (based on SOER 2010)

Sustainable, low-carbon growth		
Global mean temperature change	*To limit increases to below 2°C globally*	*EU not on track; worsening trend*
GHG emissions	*To reduce GHG emissions by 20% by 2020*	*EU on track; mixed trends [emissions from large point sources are decreasing while emission from mobile and diffuse sources have increased; transport still a problematic emitting sector with an increasing emissions trend]*
Energy Efficiency	*To reduce primary energy use by 20% by 2020 vs. business as usual*	*Mixed progress in the EU; overall, insufficient to reach the objective of 20% energy efficiency improvement by 2020 ;*
Renewable Energy Sources	*To increase energy consumption from renewables by 20% by 2020*	*Mixed progress in the EU; overall improving trend [share of renewable sources in energy production has been increasing]*
Decoupling (resource use from economic growth)	*To decouple resource use from economic growth*	*Mixed progress in the EU; overall improving trend [growth of municipal waste generation slower than that of GDP; overall decoupling of emissions from GDP]*
Waste generation	*To substantially reduce waste generation*	*EU not on track; worsening trend [increase of waste generation from construction and demolition, from waste electric and electronic equipment (fastest-growing waste streams), and of the volume of hazardous waste and sewage sludge generation]*
Waste management (recycling)	*Several recycling targets for different specific waste streams*	*EU on track; improving trend [but hazardous and problematic wastes are increasingly being shipped across borders]*
Water stress (water expolitation beyond natural limits)	*Contribute to achieving good water status by ensuring minimum environmental flow (e-flow)*	*Mixed progress in the EU [resources and demand for water unevenly distributed across Europe; water stress exapnding and projected to further increase]*

Environment-related health and well-being

In the EU, air pollution has declined, but not enough to achieve good air quality in all urban areas. There have been reductions in the levels of sulphur dioxide (SO2), carbon monoxide (CO), NO_X and lead concentrations. However, exposure to particulate matter (PM) and ozone (O3) remain of concern, linked to a loss of life expectancy, acute and chronic respiratory and cardiovascular effects, impaired lung development in children, and reduced birth weight. Between 20-50% of the European population lives in areas where the air quality breaches European limit values. Air pollution continues to cause more than 350,000 premature deaths in Europe each year and the estimated annual costs in terms of health expenditure or days of work lost through illness run to billions of Euros.

In addition to pollution from ambient air from outside, indoor air quality is also affected by biological, chemical and physical agents emitted from a wide range of products, such as building materials, furniture, carpets and cleaning products, and from the use of solid heating material in inadequately ventilated premises.

EU citizens are still exposed to multiple pollutants and chemicals, which can lead to long-term damage to human health.[27] Of particular concern are persistent and bio-accumulative compounds, endocrine-disrupting chemicals and heavy metals.

The impacts of climate change are already being felt across Europe, including more frequent and severe flooding, heat waves and other extreme events, which have implications for human health and wellbeing but also for the health of species and ecosystems and the functioning of ecosystem services. The risk of new infectious diseases or diseases previously eradicated in Europe is also expected to rise. Although some regions are more seriously affected than others, all will face consequences of some kind. The effects will be unevenly distributed, with young and old, poor and ill being at greatest risk, and unless they are proactively addressed they will result in high economic costs.[28]

Table 3. Indicative summary table of progress towards meeting environmental targets or objectives, and highlights of related trends over the past 10 years (based on SOER 2010)

Human health and well being		
Transboundary air pollution (NOx, NMVOC, SO2, NH3, primary particles)	*To limit emissions of acidifying, eutrophying and ozone precursor pollutants*	*Mixed progress in the EU; overall improving trend [successful reductions in levels of SO2, CO, NOx and lead concentrations]*
Air quality in urban areas (particulate matter and ozone)	*To attain levels of air quality that do not give rise to negative health impacts*	*EU not on track; stable trend [ozone concentrations exceed health and ecosystem-related target values, most of Europe's urban population exposed to ambient air concentrations of particulate matter in excess of EU limit value set for the protection of human health]*

[27] Worldwide, an estimated 4.9 million deaths were attributable to environmental exposure to chemicals in 2004. WHO, Prüss-Ustün et al, 2011.

[28] WHO, "Protecting Health in Europe from Climate Change" (http://www.euro.who.int/__data/assets/pdf_file/0016/74401/E91865.pdf).

Chemicals	*To improve the protection of human health and the environment from the risks of chemicals, to reduce the emission of pollutants to water and air, including indoor air, and improve the collection of information*	*Mixed progress in the EU; [Decline in discharges of hazardous chemicals to receiving waters; reported levels on pestcides in surface and groundwaters exceed environmental quality standards; data remain scarce, and although obligations under EU chemicals legislation has brought about some improvements, there is still no system for collecting information on concentrations of chemicals and combined effects of chemicals in various environmental media]*

2.3. Drivers of environmental problems

2.3.1. What drives global environmental problems?

The 5th Edition of the Global Environment Outlook report shows that the environment remains under pressure from key drivers of environmental change. For instance, population growth, urbanisation, unsustainable consumption patterns, fossil-fuel based transport and energy consumption are driving land and habitat fragmentation, over-exploitation and extraction of natural resources, increased pollution and waste generation, and use of fertilisers and chemicals in unsafe quantities.

These trends are complex and inter-related, for example: global energy demand is expected to rise by 40% over the next 20 years, but at the same time it is forecast that in 2030 some 2.7 billion people will be without basic modern energy services[29], with many relying on wood fuel or charcoal to the detriment of forest ecosystems. There is likely to be a shortfall of 40% in water available for human use by 2050, with major consequences for many economic sectors, notably agriculture.

2.3.2. Why do environmental problems persist at the EU level and what prevents them from being addressed effectively?

The globalisation of the world economy further intensifies the drivers highlighted in the previous section. As a result, many problems outside of Europe will ultimately affect Europe as well.

In the EU, four underlying **problems** are preventing the environmental issues set out in Section 2.1 from being addressed effectively. These relate to and build on the cross-cutting issues identified in the 6th EAP, and stakeholders broadly agreed that they are the key underlying problems. They are:

- the inadequate implementation of the environment policy *acquis*
- inadequate incentives for investment in environment and climate action
- problems of policy coherency and inadequate integration

[29] International Energy Agency, "Energy for All – financing access for the poor", 2011.

- gaps in the knowledge base for policy making and challenges associated with new and emerging issues

1) Implementation of the *acquis*

The Council and European Parliament have both cited poor implementation of existing EU environmental law as an impediment to achieving desired objectives[30] and 80% of respondents to the public consultation on the 7th EAP agreed that it could provide clear added value by ensuring full implementation of agreed policies and legislation.

The situation with regards to the implementation of environmental law and on compliance with the *acquis* differs across Member States.[31] This is problematic not only for the environment, but also for the EU economy, as variable implementation across Member States can distort competition in the Single Market. Moreover, the costs of not fully implementing the environmental *acquis* are estimated, broadly, at around 50 billion Euros per annum and outweigh the costs of implementation.[32]

This has led to calls for action to improve implementation and ensure that agreed legislation delivers its intended benefits. Responses to the public consultation reveal strong support for action to strengthen the correct implementation of EU environment law and thereby contribute to ensuring a level playing field.

2) Investment in environment and climate change action

Significant amounts of money are available to Member States for environment and climate-related action under various EU funds in the 2007-13 period. In some Member States a number of barriers such as an inadequate and/or incomplete regulatory framework, weak capacities or an insufficient project pipeline have hampered a timely and efficient use of the available funding in the area of environment with the exception of funds which have resources earmarked for the environment, such as the EU research framework programme (FP7), Competitiveness and Innovation framework programme (CIP) and the LIFE+ programme. .[33] For instance, available data for the EAFRD[34] suggest a very slow uptake of funds.[35] Based on the data available, if the current execution trend continues, only 50% of the funds available for environment and climate change will have actually been used by the end of the current financial period.[36] Given the time lag between the funding and the implementation of actions beneficial for the environment and the concrete environmental outcomes, the late or inadequate uptake of EU funds is cause for concern.

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30 Council Conclusions on "Improving environmental policy instruments" (5302/11), 20 December 2010; European Parliament resolution on the review of the 6th Environment Action Programme and the setting of priorities for the 7th Environment Action Programme – A better environment for a better life (2011/2194(INI)).

31 See the 2009 Environment Policy Review at: http://ec.europa.eu/environment/policyreview.htm

32 Commission Communication on Improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness (COM/2012/095)

33 Commission Staff Working Document of Regional Policy contributing to sustainable growth in Europe 2020, SEC(2011) 92 final, p.6 and Annex III for details and Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "Cohesion Policy: Strategic Report 2010 on the implementation of the programmes 2007-2013, COM(2010)110 final, p.6.

34 http://ec.europa.eu/environment/enveco/biodiversity/pdf/assessment_natura2000.pdf.

35 See as well SEC(2011) 540 final, Impact Assessment accompanying the Commission Communication "Our life insurance, our natural capital: an EU biodiversity strategy to 2020" COM (2011)244 final. http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/2020/1_EN_impact_assesment_part1_v4.pdf

36 Final data will only be available during the final evaluation of the various programmes in 2013.

Market failures are another factor preventing investments from being made at the necessary scale. The value of natural capital is not adequately reflected in decision-making processes and accounting systems. Markets and prices, taxes and subsidies do not reflect the real costs of resource use and lock the economy into an unsustainable path.

Only one in sixteen Euros in revenue is raised from environmental taxes in the EU. Environmentally harmful subsidies (EHS) continue to stimulate excessive and wasteful use of natural resources and distort their prices, as well as lead to increased public deficits. Some Member States have taken steps to remove EHS, a limited number have foreseen EHS reform in their National Reform Plans under the European Semester process, whereas others have yet to act on this issue. Although economic tools such as market-based instruments have been exploited in some sectors (notably through the GHG emission trading system), their full potential remains untapped.

3) Improving integration and coherency

Although some progress was made through the 6th EAP to integrate environment considerations into other policies, the 'global megatrends' identified in the SOER 2010[37] are magnifying inter-linkages between policies and adding to the complexity of achieving policy coherence and reconciling competing needs and interests. Modelling and scenario analysis routinely identify these inter-linkages as crucial for solving environmental problems (see OECD analysis set out in Annex 4).

For example, intensifying global competition for increasingly scarce resources and rising demand from different policy sectors for these same resources, but for different uses is complicating efforts to achieve sustainable use and reconcile these demands and pressures with environmental objectives. Land use is a case in point. Growing demand for renewable energy or food can lead to direct or indirect impacts on biodiversity and the environment. Another example is the potential of fuel switching in response to climate or energy security considerations to increase air pollution emissions (See Annex 2).

Effective responses require joined-up policy approaches that take into account multiple objectives and try to reconcile them in a way that delvers multiple or co-benefits (not only environmental, but also economic and social) and reduces trade-offs between different policy objectives. Cities in particular are faced with multiple and inter-related challenges, from pressures such as overcrowding and social inequity to pollution and traffic congestion. Due to high population density and intense activity, environmental problems tend to converge in urban areas. Policy coherence and integrated approaches that take into account and attempt to reconcile environmental, social and economic objectives are essential to respond effectively to complex challenges and minimise trade-offs.

Due to the global nature of many environmental challenges and the increasingly interlinked economic systems at international level, the thematic objectives identified above can only be fully achieved as part of a global approach or in cooperation with partner countries. A coherent approach to addressing environmental issues in the EU's external relations is therefore needed, including the systematic integration of environmental concerns into external policies.

37 "Assessment of Global Megatrends", EEA, 2010.

Current trends in the state of the environment suggest that existing frameworks for ensuring environmental integration and policy coherence and corresponding efforts may not be appropriate or sufficient for addressing these concerns.

4) The environment policy knowledge base and emerging risks

EU environment policy benefits from an extensive knowledge base and in turn, EU policy and legislation has stimulated research and development in the environmental sciences, including through the research framework programmes. However, this data and information is often not collected, exchanged and used in a way that can be easily accessed and used, whether by scientists for research purposes, public authorities in the formulation of policy, or citizens wishing to know whether environmental laws are being respected. Moreover, state of the environment monitoring is often carried out over a short period of time or in an ad hoc fashion, whereas regular, long-term data series are indispensable to adequately track changes and inform policy responses.

At the same time, while scientific and technical knowledge about the environment is constantly evolving, new knowledge is not always finding its way into policy, either because policy frameworks do not allow for the flexibility needed to adapt quickly to this knowledge or because of policy inertia. For example, available data on air pollution impacts has for some time already pointed to a gap between current efforts and the EU's air quality targets, and the targets themselves are no longer aligned to the latest science.

The emergence of new technologies or challenges (e.g. nanotechnologies, hydraulic fracturing, etc.) may present risks to the environment and merit an assessment of whether they are adequately addressed by existing policy and legislative frameworks, and if not, whether they need to be updated or whether new rules or policies are needed.

As the knowledge base develops, it helps not only to show new ways of dealing with existing problems, but also sheds light on new and emerging issues. Innovation and technological development can be forceful catalysts for, and enablers of growth. However, new technologies rely on public acceptance for their future development. In some cases, technological changes outpace developments in policy and can give rise to conflicting interests, needs and expectations. In addition, they harbour the potential to push environment and ecosystems beyond thresholds and tipping points, and bring new risks at times of unknown scale and potentially over long time-spans. A lack of capacity to address these risks can lead to increasing public concern and eventual hostility towards new technologies.

At present there is no systematic framework in the EU to anticipate, assess, manage and eventually communicate emerging environmental risks. This is hindering public acceptance of new technologies, as well as the EU's capacity to identify and act upon technological developments in a timely manner. The production of energy from unconventional sources from shale gas is a case in point.

Other challenges, like marine litter and soil degradation are not new, but are an increasing cause for concern in the EU as associated trends are worsening. Similarly, it is increasingly apparent that the trends for ‘old’ issues like land filling are worrying, and that a new approach is needed to reverse them.

2.4. How will the problem evolve?

A number of strategic documents which contribute towards delivering the **Europe 2020 Strategy** for smart, inclusive and sustainable growth set out visions and milestones and/or targets for the future (see Annex 3 for a complete overview of existing environment and climate related targets):

- The **Roadmap for a Resource-Efficient Europe**, adopted by the Commission on 20 September 2011, is a cornerstone of efforts to turn the EU into a resource-efficient, low-carbon economy.

- The **EU Biodiversity Strategy to 2020** aims to safeguard Europe's natural capital and enable the EU to achieve its target of halting biodiversity loss in the EU by 2020, restoring ecosystems where possible and stepping up efforts to avert global biodiversity loss, in line with high level commitments made at EU and global level.

- The EU domestic contribution to the global objective of avoiding dangerous climate change and therefore limiting average temperature increase to less than 2°C above pre-industrial levels is laid down in the **EU Climate and Energy package**. It includes the 20-20-20 targets for 2020: 20% GHG emissions reductions, and a more ambitious target of 30% if the conditions are right; 20% renewables in our energy consumption; and a 20% improvement of energy efficiency. For the long-term, the **Roadmap for moving to a competitive low carbon economy in 2050** sets out a plan to ensure the EU meets the objective of reducing domestic emissions by 80 to 95% by mid-century.

- In the coming months, the Commission plans to adopt a **Blueprint to Safeguard Europe's Water Resources**, undertake a comprehensive **review of air quality legislation** and develop an EU **Adaptation strategy** to respond to the increasing impacts of climate change on the environment and on human health.

- The Commission proposal for a **Budget for Europe 2020**[38] has mainstreamed environmental and climate-related objectives in all funding programmes and increased the funds available for environment and climate-related actions. It also sets the objective that 20% of the budget should be related to climate action. The estimated amounts available for the environment represent about 16% of the EU budget (excluding Cohesion Policy).[39] This would imply a very significant increase in environment and climate-related expenditure (understood in broad terms) compared to the amounts available under the current programming period.[40]

However, despite these initiatives, Europe is not on track to reach the strategic objectives set out in section 2.1 above. In understanding why, with current commitments, problems will persist, it is important to understand firstly that the underlying problems and global challenges identified in Section 2.3 will continue and may worsen, and thus they will require additional concerted, joined-up action to neuter them.

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[38] COM(2011) 500 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "A Budget for Europe 2020".

[39] However, a final estimation would only be possible once the MFF and various implementing programmes (e.g., Partnership Contracts, Operational Programmes) adopted.

[40] According to some estimates the increase would be between double and triple the current amount, depending on the uptake of cohesion funds.

This is the basic story told in the strategic modelling of environmental futures discussed in Annex 4, such as the OECD Environmental Outlook to 2050[41]. The OECD concludes that the prospects are more alarming than the situation described in the previous outlooks, and that urgent action is needed now to avoid the significant costs and consequences of inaction. The OECD forecasts that without new green growth policies, continued degradation and erosion of natural capital are expected to 2050, with the risk of irreversible changes that could endanger two centuries of rising living standards. The OECD also highlights the risk of passing irreversible "tipping points" (e.g. species loss, climate change, groundwater depletion, land and soil degradation).

Furthermore, the strategies set out above provide a strong series of frameworks in individual areas, but they are no guarantee of action and follow-up in themselves.

Whilst gap-to-target analysis should be treated with caution (especially where it is applied to wide policy scopes), Annex 3 summarises some of the analysis undertaken by the European Environment Agency (EEA) in this context. The EEA[42] assessed the gaps to targets according to projected trends (which are uncertain, of course) for the most critical targets by 2020 in 4 sectors: energy use, GHG emissions, air pollutants and waste. It shows a lack of structural break, which is needed for this economic transition, in the past and forecast trends, thus allowing to calculate a gap to target. The implication is that the baseline will include a failure to meet environmental objectives at EU and global level.

The overall impression is that - despite the frameworks in place - the current levels of effort and the continuing strength of underlying drivers of the problem mean that the problem will evolve in only a partially satisfactory way. The OECD has shown that progress on an incremental, piecemeal, business-as-usual basis in the coming decades will not be enough. Problems will continue in many specific areas: there is a broad discussion of these specific issues in Section 5.1 and in more detail in Annex 6 which discusses baselines for individual areas.

The United Nations Environment Programme (UNEP) has also confirmed these trends at global level, observing a decline in the economy in parallel with environmental degradation. Through its work on the green economy, UNEP has demonstrated evidence of an underinvestment at a global level in a more resource efficient, low-carbon economy and argues that the greening of economies has the potential to become a new engine of growth, a net generator of decent jobs and a vital strategy to eliminate persistent poverty.[43]

Although the strategic EU initiatives mentioned above go some way towards making the case for better coherence between the objectives sought and those of specific related sectoral policies, by pulling these strategies together as part of a single narrative, a 7th EAP could better demonstrate inter-linkages and the potential for developing more joined-up policy approaches to deliver multiple benefits across the environment policy spectrum, as well as for different policies. Securing the explicit endorsement of stakeholders and of the co-legislators to the overall narrative set out in the 7th EAP will also help to strengthen arguments in favour of smarter implementation of related policy and legislation, and for better coherence between environment and other policies. This is discussed in more detail in section 6.

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41 OECD, (2012) "Environmental Outlook to 2050. The consequences of Inaction".

42 Towards a Green Economy in the EU, Gaps and macroprocesses, EEA, April 2012

43 UNEP (2011) "Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication."

2.5. Who is affected and how?

The health and well-being of EU citizens are affected by the quality of Europe's environment. Pollution can gravely affect health whereas measures taken to enhance ecological resilience and create green spaces can bring health benefits and contribute positively to human well-being. The World Health Organization (WHO) estimates the environmental burden of disease in the pan-European region at between 15 and 20 % of total deaths.[44]

Urban areas are confronted with a common core set of environmental problems such as poor air quality, high levels of noise, GHG emissions and waste. At the same time, cities often pioneer innovative solutions to these challenges, and urban citizens are at the forefront of behavioural changes. Sustainable urban planning, aimed at tackling climate change and resource efficiency could have numerous co-benefits from improved air quality, supporting biodiversity and quality of life.

Business competitiveness is affected by challenges related to unsustainable resource use and resource scarcity (and attendant price rises), given Europe's dependence on imports of many key resources. This is particularly an issue for SMEs, which cannot usually negotiate the price of their inputs in the way that larger companies can, especially for energy and raw materials. Some sectors, such as agriculture and fisheries, which depend heavily on ecosystem services, are negatively impacted by the degradation of natural capital. Environment-related health problems are problematic for businesses due to absenteeism, decreased productivity and associated costs.

Environment policy and legislation has traditionally been one of the most important drivers of eco-innovation and the development of strong European industries in areas such as water, air pollution, waste management, recycling and renewable energy. It has also stimulated research and development, such as in the search for safe alternatives to hazardous substances. The eco-innovation market alone is expected to grow to a trillion Euro after 2015, bringing major opportunities for growth and jobs.[45]

Conversely, resource efficiency gains can support increases in productivity in the many sectors that depend on environmental inputs, and environmental protection supports innovation, growth and jobs (see Annex 5). This is expected to bring about positive effects on EU business competitiveness.[46] Europe could realistically reduce the total material requirements of the EU economy by around a sixth, and in so doing boost GDP by up to 3.3% and create between 1.4 and 2.8 million jobs.[47]

2.6. The EU's right to act and justification

Article 192 (3) TFEU states: "General action programmes setting out priority objectives to be attained shall be adopted by the European Parliament and the Council, acting in accordance with the ordinary legislative procedure and after consulting the Economic and Social Committee and the Committee of the Regions".

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[44] Note though that some issues not related to environmental policy are included in this estimate, such as environmental tobacco smoke so this figure needs to be treated with some caution.

[45] http://ec.europa.eu/research/horizon2020/index_en.cfm .

[46] IEFE – Università Bocconi, Wuppertal Institute,Adelphi Consult, FFU Berlin and IEEP (2009) "The links between the environment and Competitiveness". Available at: http://www.ec.europa.eu/environment/enveco/economics_policy/pdf/exec_summary_comp.pdf

[47] " Macroeconomic modelling of sustainable development and the links between the economy and the environment", GWS, 2011

The TFEU also sets out a number of principles relating to precaution, prevention, rectification of damage at source, and polluter pays, which are essential in EU environment policy-making and need to be more consistently applied.

2.7. EU Value Added: Can objectives be better achieved by Community action?

Providing a strategic framework for environment policy in the EU

A general action programme which sets out the key principles, approaches and objectives to be achieved in a given timeframe would serve as an **overarching, strategic agenda for environmental** policy **making**, helping to maintain focus on agreed priorities and establish a common understanding of the future direction to be taken in EU environmental policy. A majority of stakeholders consulted agreed that this would be a key added value of a 7th EAP. The fact that the Programme requires the approval of Council and the European Parliament confers on it legitimacy and creates a wider sense of ownership for subsequent policy proposals.

Ensuring complementarity and coherence

By providing an overarching framework for recent environment policy developments and demonstrating linkages with other relevant policy areas, a general action programme would help ensure **complementarity and coherence** with the EU 2020 Strategy and other key strategic initiatives, and demonstrate how environment policy as a whole contributes to the achievement of smart, sustainable and inclusive growth agenda.

Ensuring predictability and a level playing field

Given that on average 80% of national environmental legislation in EU Member States originates at the EU level, and EU environmental rules and standards therefore have significant impacts on the competitiveness of businesses operating in the internal market, an EU-wide, coordinated approach would help **ensure a level playing field** and avoid that national rules and standards act as obstacles to the free movement of goods and services in the internal market. Achieving consensus on a long-term vision for the environment in 2050 would also offer a greater degree of predictability for private sector actors.

Coordinating the EU response to global challenges

As the EU is affected by the state of the global environment and that of other countries, especially in its neighbourhood, an EAP could ensure a better coordinated EU approach to **addressing global and regional environmental challenges** by securing agreement on a number of priorities to guide its international efforts.

Stimulating action at all levels of governance

Meeting the thematic policy objectives and addressing the underlying problems set out above requires action at all levels of governance. Some actions require additional policy or legislative measures at EU level, while others are best addressed at national or local level, in line with the principle of subsidiarity. In most cases, however, a coherent EU approach to addressing challenges is desirable, not least due to competitiveness concerns. An EAP could play a role in jointly identifying the key challenges that need to be addressed and thereby stimulate the action needed, regardless of the level at which it needs to be taken.

3. OBJECTIVES

3.1. General objective

The overarching objective of a new EU Environment Action Programme is to provide a strategic framework for environment policy to 2020 which, guided by a 2050 vision, identifies priority objectives to be attained, and secures the commitment of Member States and stakeholders to efforts needed to attain them.

The Programme should be guided by the general objectives of the EU environmental policy as set out in the EU treaty (Article 191):

– preserve, protecting and improving the quality of the environment,

– protect human health,

– promote the prudent and rational utilisation of natural resources,

– promote measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change.

3.2. Specific objectives

Three specific objectives have been developed to address the environmental policy problems identified above in Section 2.2.2 and contribute to the achievement of the EU's overarching objective of smart, sustainable and inclusive growth:

(1) To safeguard and improve the status of natural capital

(2) To create the conditions for sustainable, low-carbon growth in the Single Market

(3) To ensure an environment that is conducive to better human health and well-being.

Clearly, tackling the underlying problems preventing the attainment of environmental objectives identified in section 2.3.2 will contribute significantly to the attainment of specific objectives 1 to 3. This logic is demonstrated in Table 4, which provides an assessment of the link between the underlying problems and the different specific objectives. This intervention logic is then reflected in the options developed and analysed later in this impact assessment. For example, actions to reduce the pressure on ecosystems respond, in particular, to the implementation and coherence issues: the different actions relate to the underlying drivers.

Table 4. Indicative table of strength of the underlying problems for environmental policy areas[48]

		Underlying problems (see Section 2.3.2)			
Environmental Issue (see Section 2.2.2)		***Implem-entation***	***Knowl-edge***	***Invest-ment***	***Coher-ence***
Ecological and climate resilience	*Pressure on ecosystems (from air pollution, eutrophication)*	++	+	+	+++
	Conservation Status (safeguard the EU's most important habitats and species)	++	+	+++	++
	Biodiversity (terrestrial and marine species and habitats)	+++	++	++	+++
	Soil degradation (soil erosion)	+	+++	++	++
	Water quality (ecological and chemical status)	++	+	+	++
	Water pollution (from point sources and bathing water quality)	+++	+	++	+
Sustainable, Low-carbon growth	*Global mean temperature change*	++	++	+++	+++
	GHG emissions	++	+	++	+++
	Energy Efficiency	++	++	+	++
	Renewable Energy Sources	+	++	+++	+
	Decoupling (resource use from economic growth)	+	+++	+	+++
	Waste generation	++	++	+	+++
	Waste management (recycling)	+++	++	+	++
	Water stress (water expolitation)	++	+	+	++
Human health and well being	*Transboundary air pollution (NOx, NMVOC, SO2, NH3, primary particles)*	+	++	+	++
	Air quality in urban areas (particulate matter and ozone)	+++	+	+	++
	Chemicals	++	+++	+	++

[48] 'Implementation' refers to implementation of the existing acquis, 'knowledge' to the availability of knowledge needed to underpin action and to the strength of new and emerging issues, 'investment' to the adequacy of incentives for investment, 'coherency' to the need for action in other policy areas,; +++ is the strongest link, + shows there is still a link but it is relatively weak. Comments elaborating how the different drivers contribute to problems with each environmental issues can be found in Annex 6.

4. OPTIONS ON THE POLICY CONTENT – STEP 1

The policy options are developed in two steps. The first step involves asking what needs to be done in order to meet specific objectives 1, 2 and 3 above. Three options are explored:

– **Option 1** is the **business-as-usual (BAU)** option. This involves continuing with existing legislation as it is currently being implemented, so with the current level of effort even if this would not be sufficient to lead to full implementation.

– **Option 2** is the **smarter implementation** option, which involves additional efforts to tackle three of the underlying problems hindering the chances of reaching the aims and objectives set out in existing policy and legislation. This involves efforts to improve a) implementation but also to make implementation smarter by addressing b) coherence issues and c) investment shortfalls.

– **Option 3** is the **smarter implementation and responding to new knowledge** option, which contains the efforts in option 2, plus additional efforts necessary to tackle the fourth underlying problem of d) new knowledge and emerging risks.

The options are not mutually exclusive but cumulative, as Option 3 includes the efforts set out in Option 2. This is done because it would not make sense, and may not even be possible, to undertake the efforts set out in Option 3 without first addressing the implementation issues targeted by Option 2. Because of this, the options are not real alternatives to meet a specific goal. However, they represent alternatives in the form of different levels or gradations of effort towards reaching the specific objectives. So, first of all we consider smarter implementation and whether that is 'enough' or whether additional efforts beyond that are needed.[49]

A more detailed analysis of alternative options for individual follow-up initiatives will be addressed in corresponding Impact Assessments. Annex 6 sets out more details on each of the efforts to be made under options 2 and 3, elaborating on the text below. It identifies in more detail the alternative options, where relevant, for the identified priority objectives and describes the justification for action, also in relation to problems relating to knowledge, implementation and financing and the links with other existing and planned policy initiatives.

In the second step, policy options for the kind of policy framework that would best serve to deliver on the specific objectives are explored (under section 6 below). The relationship between the options on policy content and those on delivery are independent, in the sense that the choice of Action Programme in the second step does not affect choices on content in the first step.

As a final methodological note, the priority objectives identified and analysed in options 2 and 3 were chosen because of their relationship to the problems set out in Tables 1, 2 and 3. Taken together, they offer the potential to address the full range of environmental issues. In developing their precise wording, consideration was given to the views of stakeholders and experts, and the justification is set out for each in Annex 6, and will be developed as appropriate in subsequent Impact Assessments accompanying any corresponding future policy proposals.

[49] In developing this impact assessment other possibilities were considered, such as setting new targets for 2020 in all policy areas where they do not currently exist, but these were not considered realistic and so were discarded at an early stage. Construction of other alternatives was also hampered by the lack of quantified modelling across the environment policy spectrum.

4.1. Option 1 – Business as usual

Option 1 involves continuing with the existing legislation as it is currently being implemented. This means that existing policy and legislation is maintained and the existing level of effort continues without further significant efforts to improve its effectiveness or efficiency.

In terms of the methodology, smarter implementation and better coherence will of course be achieved to a certain extent as part of the baseline scenario. It is not possible, however, to measure ex-ante exactly how much can be achieved under the business-as-usual scenario for a programme of such a strategic nature. For example, whereas the EU Biodiversity Strategy to 2020 was adopted in 2011, and in that sense qualifies as 'business as usual', most of its actions still need to be developed and implemented. Moreover, success in reaching the 6 targets set out in the Strategy depends partly on what happens in other policy areas (e.g. agriculture and fisheries), and actions need to be supported by adequate investment. This is why option 2 will then go on to set out the additional actions needed in this area.

The story is similar when it comes to the other key environment and climate-related strategies adopted recently. This is why we say that we are not on track, under the baseline scenario, to reach the strategic objectives set out in Section 2.1. Annex 6 includes a discussion of the individual elements of the baseline scenario for the different policy actions.

It includes:

Key policy and legislation aimed at safeguarding or improving the status of natural capital:

- The EU Biodiversity Strategy to 2020, which aims at halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.

- The Habitats and Birds Directives. These Directives aim at providing high levels of protection for species and their habitats including through the establishment of the Natura 2000 network of protected areas.

- The Water Framework Directive (WFD) aims at meeting 'good status' for surface waters (ecological and chemical) and for groundwater (quantitative and chemical).

- The Marine Strategy Framework Directive (MSFD) aims at achieving 'good status' for EU waters and seas.

Key policy and legislation aimed at creating the conditions for sustainable, low-carbon growth in the Single Market:

- The Climate and Energy Package includes the '20-20-20' targets for 2020: a reduction of EU GHG emissions of at least 20% by 2020 (conditional target to move to 30% reduction), 20% of energy consumption to come from renewable energy by 2020 and 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

- The Roadmap to a Resource Efficient Europe has the overall objective to decouple environmental impacts from economic growth. More specifically:

- A wide range of policies exist to promote sustainable consumption and production. On the demand side, these include the Ecolabel[50] and Energy Labelling[51] schemes; the EU Energy Star programme, and guidance on Green Public Procurement. On the products side, they include the Ecodesign[52] and Internal Market directives and the Clean Vehicles Directive.[53] On the producers' side, it includes the EU Eco-Management and Audit Scheme (EMAS) Regulation[54] and EU policy to promote Corporate Social Responsibility[55].

- EU waste legislation aims at the systematic application of the waste management hierarchy: 1) prevention, 2) re-use, 3) recycling (including composting), 4) recovery (including energy recovery), and 5) disposal (landfilling or incineration without energy recovery).

Key policy and legislation aimed at safeguarding EU citizens from environment-related pressure and risks to health and wellbeing:

- The EU has the long-term objective to achieve levels of air quality that pose no significant risk for human health and the environment. [56]

- Horizontal chemicals legislation (REACH and the Classification, Labelling and Packaging Regulations) provide a baseline protection for human health and the environment, and promoting the uptake of evolving non-animal testing methods. Other pieces of legislation aiming to protect human health and the environment include: biocides, cosmetics, pharmaceuticals, pesticides, toys, occupational health and safety, and waste (e.g. WEEE).

- The Drinking Water Directive and the Bathing Water Directive aim at protecting human health from water-related sources of disease.

- The White Paper "Adapting to climate change: Towards a European framework for action" aims at developing a framework to ensure adaptation.[57]

4.2. Option 2 – smarter implementation

Under this option, additional efforts are made to tackle the first three underlying problems set out in 2.3.2, which are currently hindering the chances of reaching the aims and objectives set out in existing policy and legislation by focusing efforts on:

(1) improving the implementation of the *acquis*.

(2) ensuring adequate incentives for investment.

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50 Regulation (EC) No 66/2010.
51 EU Directive 92/75/EC.
52 Directive 2009/125/EC.
53 Directive 2009/33/EC.
54 Regulation (EC) No 1221/2009.
55 COM(2011) 681 final.
56 As an example of policy coherence, air quality is also crucial for safeguarding natural capital given the impacts on the environment itself.
57 (COM(2009) 147

(3) improving policy coherence and integration.

Of these additional efforts, many have already been discussed or are even to some extent planned. However, they are included in this option and not under option 1 (the Business as Usual) because whilst they may have been envisaged, there is not necessarily clarity as to their content or yet a full commitment to their delivery. For example, the Water Blueprint is planned for adoption at around the same time as the new EAP proposal, but it will still be new and will need to be implemented. More specifically, this option is undertaken through the efforts set out below.

To safeguard or improve the status of natural capital:

- In order to fully implement the Biodiversity Strategy:
  - take further steps to ensure that the necessary investments are made, biodiversity issues are further mainstreamed in other policy areas and existing commitments are implemented.
- In order to fully implement the WFD:
  - take further steps to reduce impacts on freshwater, including nitrogen and phosphorus.
- In order to fully implement the MSFD and WFD:
  - take further steps to eliminate emissions from urban and industrial wastewater, fertilizer use and air emissions responsible for eutrophication.

To create the conditions for sustainable, low-carbon growth in the Single Market:

- In order to fully implement the EU Climate and Energy Package by 2020:
  - ensure that Member States use at least 50% of auctioning revenues (100% for the redistributed amount and aviation) for climate and energy related purposes.
  - increase the share of EU spending for climate related purposes to at least 20% of the whole budget under the 2014-2020 Multiannual Financial Framework.
- In order to fully implement EU waste legislation and use waste as a resource, in particular by ensuring application of the waste hierarchy and the effective use of economic instruments with the aim to:
  - increase recycling, including of materials having significant environmental impacts over their life cycle and of critical raw materials
  - step up action to eradicate illegal shipments of waste
- Take further action to address water stress

To safeguard EU citizens from environment-related pressure and risks to health and wellbeing:

- Step up implementation efforts for the Drinking Water Directive (in particular for small drinking water suppliers) and the Bathing Water Directive with the aim to achieve compliance levels above 95% by 2020.

4.3. Option 3 – smarter implementation and responding to new knowledge

As well as the efforts set out in option 2 on smarter implementation, this option includes efforts to tackle the fourth underlying problem:

(4) improving the scientific and knowledge base for environment policy and responding to emerging issues.

This option corresponds to a higher level of commitment and implies the search for new instruments and/or approaches to tackle the identified challenges.

More specifically, these efforts are:

To safeguard or improve the status of natural capital:

- To extend existing strategic air quality targets and actions beyond 2020 and strengthen efforts to reach full compliance with EU air quality legislation.

- To establish a quantitative reduction target for marine litter by 2020.

- To strengthen the integration of land use aspects into decision making at all relevant levels and set targets on soil and land as a resource.

- To develop a more strategic approach to protecting and enhancing forests and the services they provide, including through improving resilience to climate change and the threat of fires; this may include the setting of targets or political objectives in the upcoming Forest Strategy.

To create the conditions for sustainable, low-carbon growth in the Single Market:

- To reduce the overall environmental impact of production and consumption across the life cycle of specific products or product categories, focusing in particular on food, housing and mobility sectors, by:

  – setting targets for sustainable production and consumption.

  – creating a comprehensive legal framework for sustainable consumption and production.

- To virtually eliminate land filling and limiting energy recovery to non-recyclable materials.

- To address internal market barriers facing environmentally sound recycling activities in the EU.

To safeguard EU citizens from environment-related pressure and risks to health and wellbeing:

- To update existing EU policy on air quality and align it with the latest scientific knowledge, and identify cost-effective measures to combat air pollution at source.
- To update EU noise policy and align it with the latest scientific knowledge, and identify cost-effective measures to reduce noise at source.
- To develop a strategy for a non-toxic environment which:
  - addresses combination effects of chemicals and safety concerns related to endocrine disruptors;
  - develops a comprehensive approach for minimizing exposure to hazardous substances, including chemicals in products.
  - Addresses transparency and safety concerns related to nanomaterials, as part of a coherent approach across different legislation.
- To agree and implement an EU climate adaptation strategy, including integrating climate change adaptation considerations into key EU policy initiatives and sectors.

5. ANALYSIS OF IMPACTS OF POLICY OPTIONS FOR THE EFFORTS NEEDED TO ACHIEVE THE SPECIFIC OBJECTIVES

5.1. Analysis of Option 1 – Business as Usual

To safeguard or improve the status of natural capital

The EU Biodiversity Strategy responds to the ongoing decline in Europe's biodiversity and the degradation of ecosytsem services, and the growing recognition that this has important economic and social costs.[58] The Strategy contains ambitious targets and actions that tackle the key pressures on biodiversity and drivers of loss and aim to ensure that the value of natural capital is reflected in decision-making. This includes a specific target and corresponding measures to ensure the full implementation of the Birds and Habitats Directives. The Strategy provides a framework and a pathway to meet the political commitment made in 2011 to halt the loss of biodiversity and the further degradation of ecosystem services, and restore them in so far as possible. These commitments need to be followed up on for the objectives of the Strategy to be fully met. In the EU, about 25% of animal species are at risk of extinction and 88% of fish stocks are over-exploited or significantly depleted. Some targets and measures depend on developments beyond environment policy, such as the reform of the EU's Common Agricultural Policy (CAP) and Common Fisheries Policy (CFP). The pathway to the attainment of the Strategy's objectives is therefore by no means assured, and depends on adequate integration of natural capital-related objectives and targets into relevant sectoral policies, and further efforts by Member States and stakeholders.

The WFD has already been relatively successful in reducing the discharge of pollutants into Europe's waters, leading to water quality improvements. However, the first WFD River Basin

[58] Study on The Economics of Ecosystems and Biodiversity (TEEB), http://www.teebweb.org.

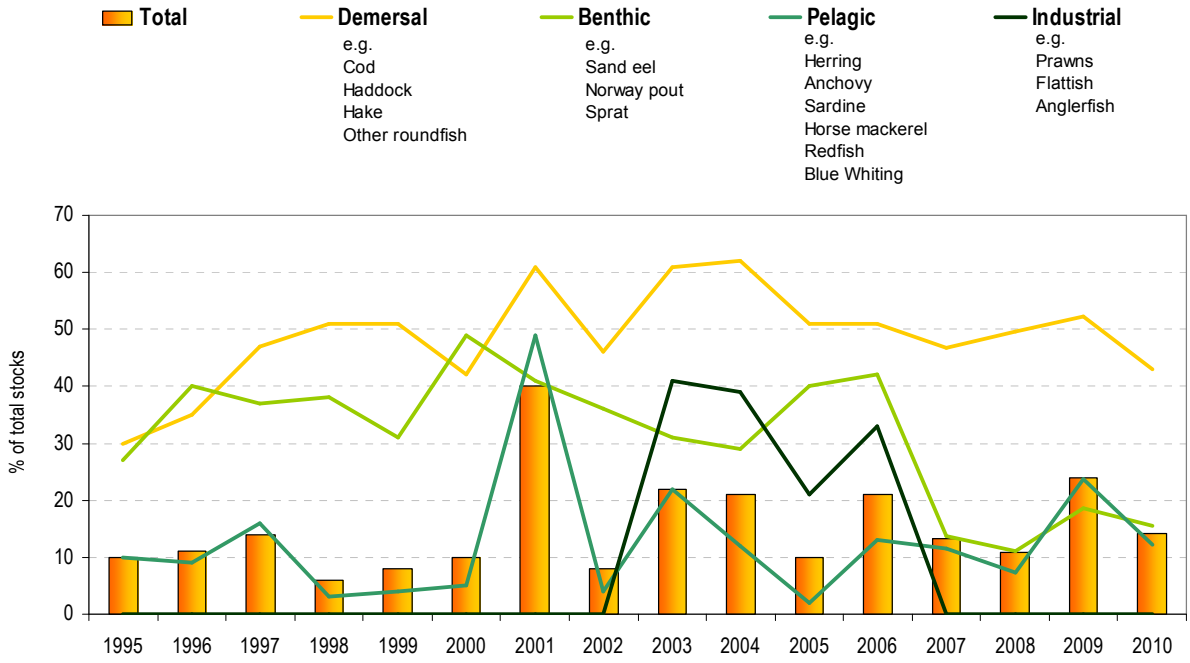
Management Plans indicate that more than half of the surface water bodies in Europe are in less than good ecological status. The EU is not on track to meet the WFD objective.

Europe's marine waters are subject to mutliple pressures from various different sources. While the EU is on track under the MSFD to address many of these, three are of particular cause for concern and on current trands are likely to prevent the achievement of Good Environmental Status: marine litter, the status of fish stocks, and eutrophication.

Ten million tons of litter a year, mostly plastic, end up in the oceans and seas worldwide, turning them into the world's biggest plastic dump. The quantity of litter, especially plastic, is increasing in all EU marine waters leading to significant economic costs e.g. loss of income in tourism, cost for regular cleaning of beaches for the purposes of tourism, the cost of damage to ships and installations, the cost for the fishing industry due to "ghost fishing" (entrapment of marine life in discharged gear) and the cost of coastal clean-ups.[59]

In 2010, 14% of total fish catches were outside safe biological limits, broadly indicating no improvement since 1995 (see Figure 1 below). Many European fish stocks are delivering much less than they could if they were managed at sustainable levels. The worst affected fish are cod, haddock, hake and other roundfish. Overfishing leads in turn to uncertain catches which itself leads to more fishing, creating a harmful cycle of depletion which affects both the viability and the sustainability of fishing in the EU.

Figure 1: Fish catches from stock outside the safe biological limits[60]



To create the conditions for sustainable, low-carbon growth in the Single Market

Europe has in place a number of policies to encourage the transition to a low-carbon and resource efficient economy that promotes sustainable growth and job creation. However, modelling suggests that with existing efforts Member States will not meet the targets in the

[59] JRC, Marine Litter Technical Recommendations for the Implementation of the MSFD Requirements, 2011.

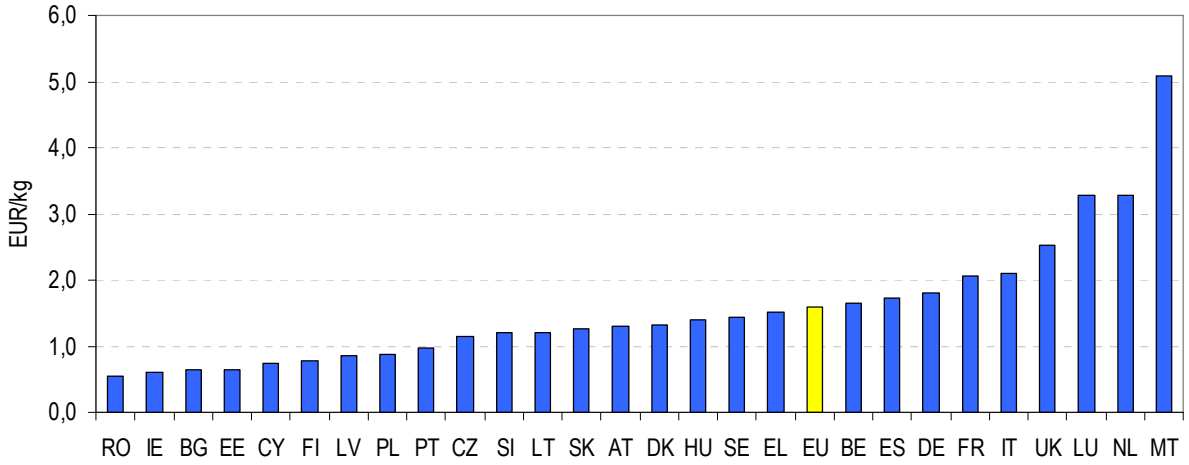
[60] Source: ICES, 2012. The data covers the North East Atlantic (North Sea and Baltic Sea, Bay of Biscay and the Iberian Peninsula), and excludes the Mediterranean Sea.

Climate and Energy Package. For example, in the sectors not covered by the EU Emissions Trading Scheme (ETS), GHG emissions are likely to increase once the economy picks up, and it is possible that only 11 Member States will reach their 2020 targets with existing measures.[61]

Enabling greener products within the Single Market and promoting innovation and investments in resource efficient and low-carbon technologies can make an important contribution to the EU's recovery from the financial and economic crisis. Currently, however, these objectives are not embedded firmly enough in economic and fiscal policy at Member State and EU level. Despite current eco-innovation support and the stimulus from rising resource prices, a combination of economic risk, information asymmetries and unaccounted environmental costs are preventing more progress from being made.[62]

In terms of resource efficiency, overall, consumption is increasing over time and generally faster than improvements in resource efficiency. There are also significant differences between Member States (see Figure 2), and the EU as a whole is roughly half as productive in its use of resources as Japan.

Figure 2: Resource productivity (GDP/DMC), 2009, Source: Eurostat, 2012



Firms are taking action to improve their resource efficiency, encouraged by markets and the policy framework. However, opportunities are still systematically being missed, especially in non-core business areas, for example where energy or material efficiency is not central to a firm's activity. As an indication of how much more could be done to realise the potential for resource efficiency, in the UK alone business could save around £23bn per year from resource efficiency measures that are either no or low cost.[63] The sectors with the greatest potential identified were chemicals / minerals (c. £4 billion), metal manufacturing (c. £4 billion), power and utilities (c. £3 billion), construction (c. £3 billion) and road freight (c. £2 billion).

Municipal waste is the only waste related indicator for which a long time series exists for the EU. In 2010 the EU generated 252 million tons of municipal waste, which represents an increase of 11% compared to 1995 (see Figure 3). The EU is however moving gradually

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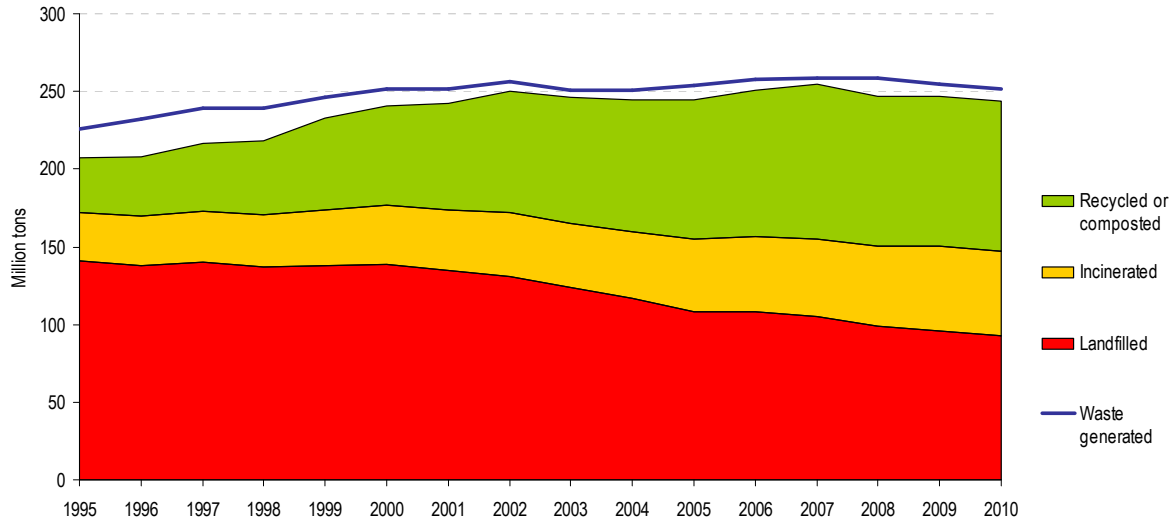
61 "Greenhouse gas emission trends and projections in Europe 2011", European Environment Agency

62 Eco-innovation Observatory, "Closing the innovation gap – An economic opportunity for business", 2012; Flash Eurobarometer 315, March 2011.

63 Oakdene Hollins "*Further Benefits of Business Resource Efficiency", 2011*

towards a more sustainable waste management, as recycling (including composting) increased from 17% in 1995 to 40% in 2010 while landfilling decreased from 68% to 38%. There are still significant challenges, however: each year in the EU we throw away 2.7 billion tonnes of waste, 98 million tonnes of which is hazardous. On average only 40% of our solid waste is re-used or recycled, the rest going to landfill or incineration. There is significant variance across the EU. In some Member States more than 80% of waste is recycled, indicating the possibilities of using waste as one of the EU's key resources. At the same time, current municipal waste practices lead to significant GHG emissions and could be reduced considerably by a shift to recycling and incineration with energy recovery.[64]

Figure 3: Municipal waste generation and treatment in EU Source: Eurostat, 2012



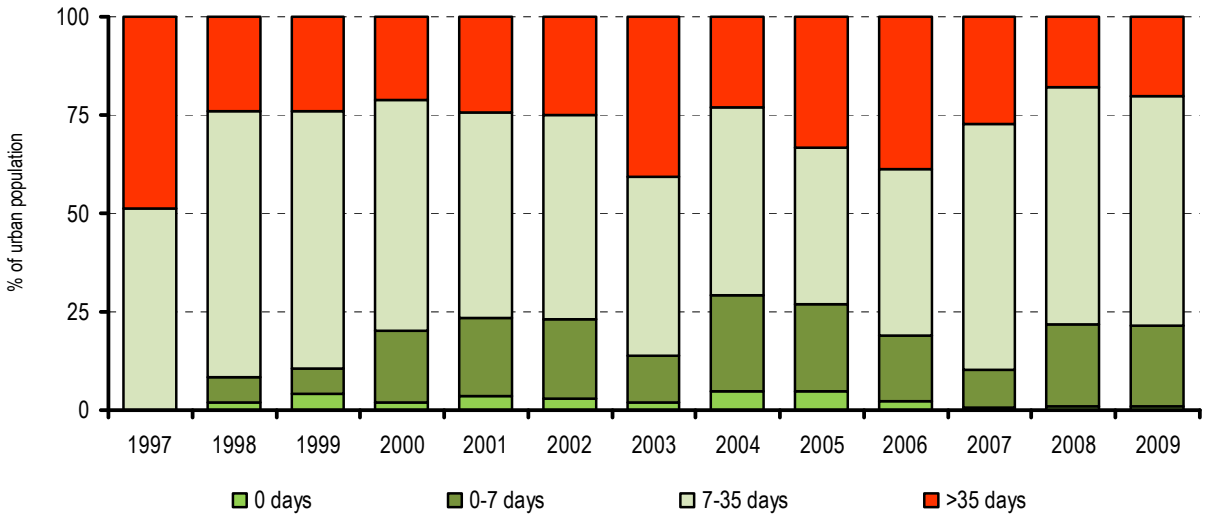
In terms of water stress, by 2007 at least 11% of Europe's population and 17% of its territory had been affected by water scarcity and the cost associated with droughts in Europe over the past thirty years amounts to some €100 billion. The Commission expects further deterioration of the water situation in Europe if temperatures keep rising as a result of climate change.

To safeguard EU citizens from environment-related pressure and risks to health and wellbeing

Overall, there has been a substantial reduction in emissions of the key pollutants over the last couple of decades. However, about 80-90% of the urban population in the EU is still exposed to concentrations of particulate matter and ozone in excess of the WHO guidelines, and trends are not improving (see Figure 4). These exposures translate into health impacts of around 500,000 premature deaths a year in Europe. In terms of ecosystems, there has been a reduction of 80% in the ecosystem area where critical loads for acidification are exceeded, although large parts of northern Europe are still affected. For eutrophication, most of continental Europe still exceeds critical loads and impacts have reduced only slightly over the last decade.

[64] EEA, "Better management of municipal waste will reduce greenhouse gas emissions", Briefing 2008/01.

Figure 4: EU population with PM concentrations exceeding daily limit values, EEA, 2011



Modelling indicates that targets for emission reductions may be met, with the exception of the ammonia target. However, this is based on optimistic assumptions. The real (rather than expected) emission reductions achieved in the transport sector are a particular issue of concern.

There are indications that the reform of the EU's chemicals policy framework has led to initial reductions in the impacts of chemicals on the environment and human health. However, implementing the current chemicals legislation would not be enough for the EU to attain the goal agreed at the World Summit on Sustainable Development in 2002 to have ensured "the minimisation of significant adverse effects" of chemicals on human health and the environment by 2020, as challenges such as combination effects of chemicals or potential risks from nanomaterials are only partially addressed.

Overall, compliance rates for drinking water and bathing water are good. However, some areas of implementation have not yet received sufficient attention. 68,000 small water supplies provide water to more than 48 million people, but with a level of non-compliance estimated at 36%, affecting 17.5 million consumers in the EU.[65] There is anecdotal but consistent evidence that this results in a comparatively higher disease burden associated with small scale systems. Similarly, almost 8% of bathing waters do not meet minimum water quality standards.

5.2. Analysis of Option 2 – smarter implementation option

To safeguard or improve the status of natural capital

Further efforts will need to be made through the Common Implementation Framework established under the Strategy, involving the Commission, Member States and stakeholders, to ensure that the Biodiversity Strategy is efficiently implemented through a co-ordinated and streamlined approach. The smart implementation of the strategy will involve following up on commitments to progress on green infrastructure, combat Invasive Alien Species and ensure

[65] COWI, ECORYS and Cambridge Econometrics (September 2011) "The costs of not implementing the environmental acquis". Available at: http://www.ec.europa.eu/environment/enveco/economics_policy/pdf/report_sept2011.pdf

there is no net loss of ecosystems and their services. This offers opportunities to ensure biodiversity's contribution to the economy is strengthened, whilst at the same time finding the most efficient ways to halt biodiversity loss. Subsequent actions and measures developed under the Strategy will be designed in the most cost-effective way, including on the basis of Impact Assessments where appropriate.

In terms of the WFD, the Water Blueprint (whose actions and measures will be developed on the basis of an Impact Assessment) will aim at fostering integration of water into sectoral policies by ensuring that impacts of socio-economic activities and regulations on the state of water resources are fully taken into account. By increasing the use of economic instruments for a better allocation of resources and internalisation of external costs, the Blueprint will improve the efficiency of water policy in the EU. Similarly, the effectiveness and efficiency of policy should be boosted by achieving a more efficient water governance and effective working relationships between institutions; by fully integrating water quality, quantity and hydromorphology aspects in management actions; and also by improving knowledge and tools available to water managers, enabling effective decision making and reducing administrative burden. However, scenario analyses show that even with strong improvements in water efficiency in all sectors, water stress is expected to remain a problem in numerous EU catchments due to climate change impacts and rising demand.[66]

Ensuring the implementation of legislation affecting water bodies, such as the Urban Waste Water Treatment Directive and the Nitrates Directive, will bring benefits in terms of tackling emissions at source or where it is most efficient to do so, as will better management of air emissions responsible for eutrophication.

Implementing the commitment to ensure sustainable management of fish stocks (some of which, in the absence of further action, are at risk of collapse) will allow the development of larger fish stocks, leading to more fishing possibilities at lower cost and with a higher unit value. There would however be negative economic impacts in the short run, linked to lower initial catches, and reduction of the size of the fleet. In the long run, however, the implementation of Maximum Sustainable Yield (MSY)-based management practices would improve revenues for fishermen and reduce the need for government subsidies.

To create the conditions for sustainable, low-carbon growth in the Single Market

The full implementation of the Climate and Energy Package does not imply setting new targets and actions, but rather strengthening the Member States' efforts to deliver on the 20-20-20 targets by 2020 and to implement the Emissions Trading Directive[67] and the Effort Sharing Decision (ESD).[68] Current investment levels are not sufficient to ensure a smooth transition to a low carbon economy or that the most cost-efficient measures are taken. Increased investments both from the private and public sectors, and from the national and European levels, will play an important role in delivering both.

Additional efforts to integrate climate objectives into other EU policies will bring about further reductions in GHG emissions, thereby contributing towards achieving the EU's climate change objectives. Where relevant, actions and measures will be designed on the basis of Impact Assessments.

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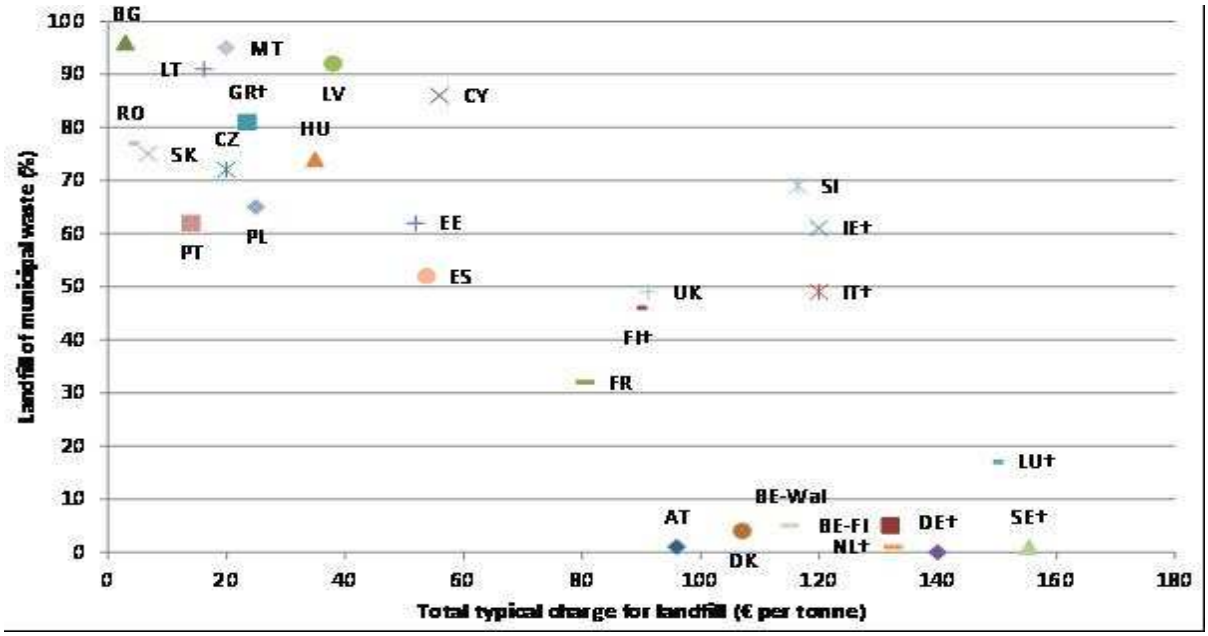
66 ClimWatAdapt study "Climate Adaptation – modelling water scenarios and sectoral impacts", see http://www.climwatadapt.eu/

67 Directive 2009/29/EC.

68 Decision 406/2009/EC.

In terms of waste, it is estimated[69] that full implementation of EU waste legislation would save €72 billion a year, increase the annual turnover of the EU waste management and recycling sector by €42 billion and create over 400,000 jobs by 2020. This can be done efficiently and to the benefit of the economy through the further use of economic instruments. For instance, putting in place proper charges leads to lower rates of landfilling and higher rates of recycling both overall and within individual EU Member States (see Figure 5). The planned review of EU waste legislation may lead to new actions and measures being proposed, which are likely to require an Impact Assessment.

Figure 5: Relationship between landfill charges and landfill rates



Furthermore, among the barriers to an efficient waste policy are the barriers and distortions to the movement of recyclable materials in the internal market which inter alia prevent economies of scale and lead to inefficient decisions. For instance, the Services Directive performance check noted problems with a lack of mutual recognition of registered waste transporters and of accreditation of energy experts certifying the energy efficiency of buildings. Enhancing the functioning of the internal market in waste recycling and recovery is not a problem of existing EU legislation which already guarantees an internal market of waste for recovery, but of national obstacles and poor implementation in certain Member States. Further enabling eco-innovation and investments in resource efficiency will provide new solutions. This will be beneficial for businesses, and in particular SMEs, which currently face barriers that prevent them from developing and adopting potentially efficient technologies.

93% of EU SMEs are taking action to be more resource efficient and 26% of them are already offering green products and services to prevent or limit environmental degradation as well as products and services with environmental features.[70] Nonetheless, there is untapped potential in terms of boosting productivity through resource efficiency as well as making full use of business opportunities in emerging markets with environmental problems (see Figure 6).

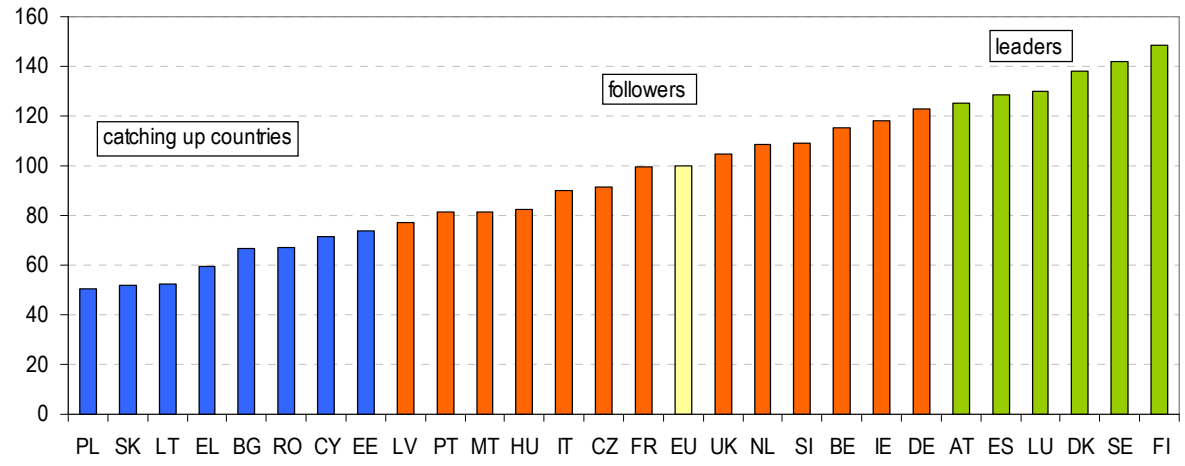
69 "Implementing EU legislation for Green Growth", Final Report, 29 November 2011..

70 Flash Eurobarometer 342, March 2012.

Implementation of the Environmental Technology Verification (ETV) programme can bring further benefits in terms of bringing new products to market.

The EU Waste Shipment Regulation (WSR) and the Basel Convention provide the overall basis for action to combat illegal shipments of waste. However, current efforts have proven insufficient to tackle this problem. In 2009 alone, Member States reported around 400 cases of illegal shipments, but the total number is thought to be considerably higher than those officially reported. Actions and measures in this area will probably be designed on the basis of an Impact Assessment.

Figure 6: Eco-innovation index (EU=100), Eco-Innovation Observatory, 2011[71]



To safeguard EU citizens from environment-related pressure and risks to health and wellbeing

Improving the implementation of and compliance with the Drinking Water Directive will reduce the risks linked to small water supplies.[72] This can be supported through means of guidance and increased coherence with related policies (e.g. WFD, REACH).

With regard to the Bathing Water Directive, the overall trend is positive as a result of further reduction of the sources of pollution mainly from urban wastewater and agriculture. However, investment is needed to improve environmental performance and better deliver the objectives of the Directive.

[71] The Eco-Innovation Scoreboard compares eco-innovation performance across the EU-27 Member States. It is an index based on indicators in five areas: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, environmental outcomes and socio-economic outcomes.

[72] Small water supplies: < 1000 m³ or serving < 5000 people.

EXAMPLE OVERVIEW OF ANALYSIS UNDERPINNING THE DIFFERENT PRIORITIES

Annex 6 sets out a discussion for each of the policy actions*, elaborating on the text in the main report. For example, for air quality, it sets out (in more detail than in this box):

The current situation - about 80-90% of the urban population in the EU is exposed to concentrations of particulate matter in excess of the WHO guidelines, and similarly for ozone. These exposures translate into health impacts of around 500 000 premature deaths in Europe mainly due to high PM concentrations etc.

Future outlook - there exists a well-developed integrated modelling suite centered around IIASA's 'GAINS' model. This provides forecasts of how air quality will change under certain assumptions and can be linked to forecasts of changes in health and ecosystem and biodiversity impacts.

Key challenges – what are the main challenges related to the issues of: the knowledge base (eg what is the reduction potential from various sources and associated costs?); implementation (eg slow implementation on the part of Member States and how it is being addressed); financing (the substantial challenges on the monitoring and assessment side).

Justification for the action (including new policy initiatives and interlinkages) – related to the challenge of the implementation of the existing legal framework and the fact that even full implementation of the existing framework would result in large health and environmental problems driven by air pollution.

There are substantial interlinkages with policies in other non-environmental areas such as transport, small-scale combustion and agriculture. To be credible, tightening of ambient air quality objectives or emission ceilings will in most cases need to be accompanied by appropriate source controls at EU level to give MSs confidence that their own efforts to achieve targets at national level will not be countered by the lack of appropriate EU action. The possible synergies are discussed.

Policy proposals are expected in this context during the remainder of this Commission and some possible accompanying non-legislative initiatives.

** All relevant options for improving air quality and its management in the EU will be considered in the **Impact Assessment** accompanying the review. As such, the analysis in this Impact Assessment accompanying the 7th EAP is an initial assessment to facilitate the definition of priorities and will be deepened considerably.*

5.3. Analysis of Option 3 - smarter implementation and responding to new knowledge

To safeguard or improve the status of natural capital

Through a comprehensive review of EU air legislation, it will be possible to identify the optimal combination of measures needed to address problems that currently hinder progress towards reaching air quality goals and targets and those related to implementation of legislation in this field. In particular, it can help as part of the Impact Assessment process to identify cost-effective efforts to reduce emissions from specific sources regulated at EU level.

There are serious economic impacts of marine litter, and these costs are increasing in line with the problem: Around 80% of marine litter comes from land based activities, and is often the result of shortcomings in the implementation of waste legislation. Member States do take measures, especially targeting plastic bags. However, they cannot prohibit the use of a packaging product or material if it is in line with the essential requirements of the Waste Directive and therefore, cannot ban the use of plastic bags that comply with the provisions of the Directive. European legislation needs to enable Member States to take the most effective and efficient action possible, and it may be that action is best steered through agreed targets that provide clarity on what needs to be achieved (any targets will be set on the basis of an Impact Assessment).

The EU is one of the most fragmented regions in the world, with 30% of the EU's territory considered to be 'moderately high' to 'very highly' fragmented, mainly as a result of urban sprawl and infrastructure development related to transport and energy. Land use change affects the connectivity and health of ecosystems and their ability to provide services and is one of the main drivers of biodiversity loss in Europe and, indeed, worldwide. Although the EU's Territorial Agenda 2020 recognises that developments affecting land use can cause severe environmental problems and should ideally take place in a territorially coordinated manner, there is still no agreement on how this should be done.

With specific regard to soil, the Soil Thematic Strategy set the overall objective of protecting and using soils sustainably by preventing further soil degradation and preserving soil functions, and by restoring degraded soils. However, action to date has not enabled this objective to be met. Long-term targets may help to provide the impetus needed to ensure soil is used sustainably, and could be considered on the basis of an Impact Assessment.

Forest fires continue to alter significantly forest ecosystems in many parts of Europe. Fires not only damage ecosystems and the services they provide -- sometimes irreversibly – but also cause human casualties and destruction of property. At present, there is no strategic approach in the EU to protecting and enhancing forests and the services they provide, which would allow fires to be tackled more efficiently and effectively. Depending on their nature, actions and measures may need to be designed on the basis of an Impact Assessment.

To create the conditions for sustainable, low-carbon growth in the Single Market

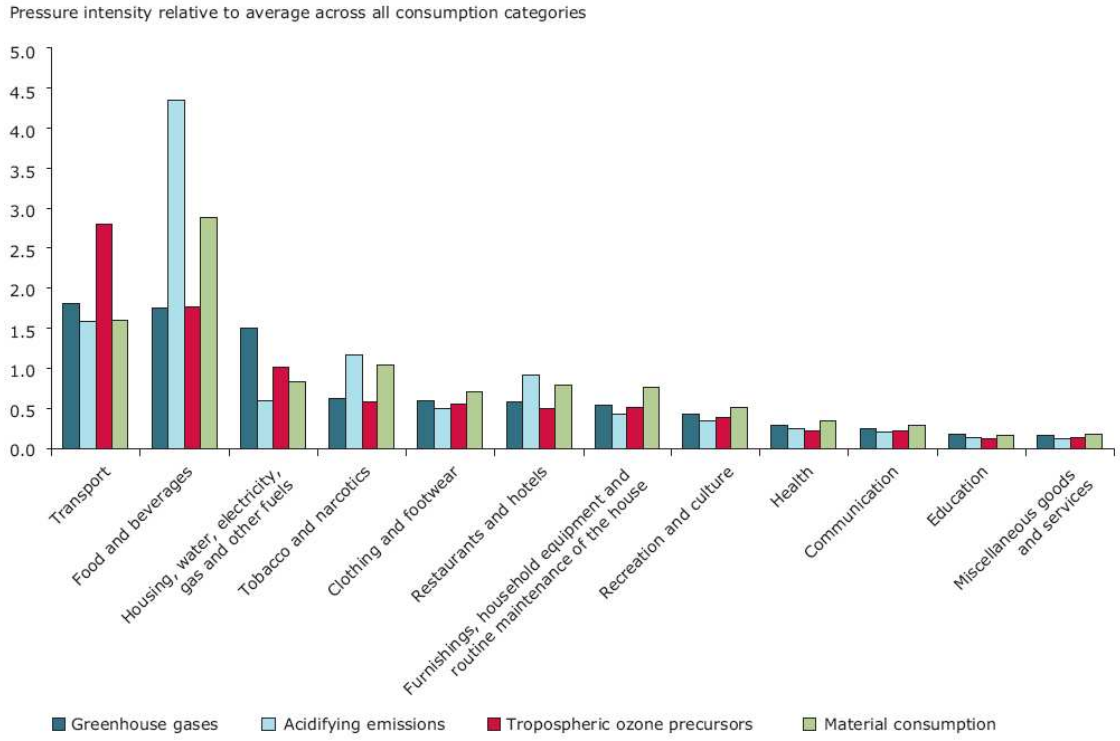
In terms of ensuring the sustainability of production and consumption, policy has focused on improving the environmental performance of products (more than 80% of all product-related environmental impacts are determined by product design), promoting cleaner production and enabling consumers to make better choices in consuming, owning, and using products and services. Action has involved a mix of policies, from standardisation to market based instruments.

Whilst this policy has had some successes, there needs to be a step change if markets are truly to deliver sustainable production and consumption. This will need to include a wide range of actions at both European and national levels that stimulates and encourages behaviour by businesses and consumers. In part, these actions will be about enablement: the market failures are significant because for example information is lacking on the environmental performance of products.

In terms of the delivery of the improvements, the most efficient way forward will be the application of new methods, consolidation of the legislative instruments and effective alignment and coordination of market based instruments and incentives at EU and MS level. This could be achieved in particular through a process of setting targets that provide clarity over the direction of action needed, and this will be subject to further consideration including through an Impact Assessment.

In addition, sector specific measures will be taken forward targeting the sectors of Food and Buildings. An effective and efficient policy will need to target these sectors not least because they are responsible for such a significant percentage of European emissions (see Figure 7). Again, such actions would need to be subject to further consideration including possibly through an Impact Assessment.

Figure 7. Relative environmental pressures intensities of consumption categories, 2005



Note: * Austria, Czech Republic, Denmark, Germany, France, Italy, the Netherlands, Portugal and Sweden.

Source: EEA and ETC/SCP, 2010.

In terms of water stress, this is an issue that will become increasingly severe as climate change impacts combine with rising demand, especially in Mediterranean countries. Additional action will be needed to ensure that this resource is allocated and used efficiently, without cross-subsidisation and with users facing the true resource costs.[73]

[73] See the Impact Assessment supporting the Water Blueprint.

To safeguard EU citizens from environment-related pressure and risks to health and wellbeing

There is a consensus among stakeholders that one of the added values of a new EAP would be to address emerging threats to human health and the environment, which is an issue that has not been covered by the recently adopted environment-related strategies or roadmaps. Responses to the online questionnaire reveal that many stakeholders attribute high priority to filling policy gaps related to pollutants through new legislation. The Council and the European Parliament also consider that the new EAP should set specific goals to ensure that by 2020 the health of European citizens is no longer undermined by pollution and hazardous substances.

A revision of the National Emission Ceilings Directive, based in part on an Impact Assessment, will be required to reflect the recently agreed revision of the Gothenburg Protocol, including ceilings for 2020 and possibly beyond. This will also provide certainty to those involved in implementation.

According to the World Health Organisation, large-scale epidemiological studies provide sufficient evidence of links between exposure to environmental noise and adverse effects on human health. Aligning EU noise policy to latest scientific knowledge would help to address and attenuate these effects, and may require an Impact Assessment.

Continuing to ensure that REACH is working effectively, a number of other areas need to be considered for there to be a strategy that considers toxicity from all sources and promotes cost-efficient measures to minimise impacts on human health. In particular, such a strategy needs to take into account the combination effects of chemicals and address risks related to nanomaterials and endocrine disruptors, and depending on its structure may require an Impact Assessment. The new knowledge base on the toxicity of chemicals would facilitate the development of non-animal test methods, better target areas of concern and stimulate the development of less hazardous chemicals. In terms of the stakeholder consultation, this action aroused considerable interest, and diverging views.

Emerging technologies such as shale gas offer opportunities, but these opportunities also bring risks. Better understanding and managing these risks is a sensible way forward, that will allow the economic benefits to be enjoyed, but not at the expense of unnecessary environmental impacts. This will be subject to further consideration including possibly on the basis of an Impact Assessment.

The main physical and climatologic conditions associated with climate change are temperature rise, precipitation changes, extreme weather events, sea level rise and temperature variability. Such drivers will result in climate change related hazards such as flooding, droughts, heat waves or glacial retreat. Most recent estimates suggest that the yearly mean damage costs of climate change in the EU would be around €20bn in the 2020s, between €90bn and €150bn in the 2050s, and between €600bn and €2500bn in the 2080s, depending on the climate scenario. All models show that adaptation action can significantly reduce the damage costs.

An EU Adaptation Strategy will provide a more comprehensive approach and a more resilient Europe at national, regional and local level, in particular by facilitating the exchange of good practices and co-ordination. It will respond to the issues that a number of EU policies still need to take into consideration the adverse effects of climate change. In addition, Member States, regions, cities are at different stages in responding. Finally, the private sector,

including insurance and finance markets, is not yet fully delivering the right products and services to help private agents.

6. OPTIONS FOR THE DELIVERY MECHANISM - STEP 2:

Whatever the chosen option is in terms of policy content, the question arises how this can best be delivered. This section considers the kind of policy framework, if any, that would be most effective in enabling the specific objectives to be met.

6.1. Options for an environment policy framework

6.1.1. Option A) Discontinuation of the EAP policy approach

Under this option, no new EAP would be proposed. It would consider that the recently adopted strategies and roadmaps provide a sufficient policy framework for the medium-term and that objectives and priority actions have already been identified for most areas of environment policy up to 2020.

6.1.2. Option B) Business as usual

Under this option, the new EAP would be structured in the same way as the 6th EAP. It would identify thematic priorities and include a detailed list of actions to be carried out in the period up to 2020. As with the 6th EAP, it would be proposed in the form of a Decision to be adopted through the ordinary legislative procedure.

6.1.3. Option C) An EAP limited to a set of priority objectives

Under this option, the Commission would propose a 7th EAP in the form of a Decision to be adopted through the ordinary legislative procedure, which would set out a common narrative for future EU environment policy and a limited number of priority objectives to be attained by the EU and identify key actions needed to attain those objectives.

6.2. Analysis of options for an environment policy framework

6.2.1. Option A) Discontinuation of the EAP policy approach

This is the approach the Commission followed for the mid-term review of the 6th EAP in 2007, when a Communication[74] was adopted without a proposal for a revision of the 6th EAP in co-decision. The mid-term review concluded indeed that climate change, biodiversity, health and resource use remained the most pressing environmental challenges and the 6th EAP was still the correct framework for future action at Community level. It pointed to the need to strengthen efforts in implementing its measures, with a particular attention to: enhanced international co-operation, better regulation in environmental policy-making, promotion of policy integration, and improved implementation and enforcement.

However, a majority of Member States and the European Parliament have since highlighted the important political dimension of EAPs – notably the fact that they are now adopted under the ordinary legislative procedure. These Member States (and various other stakeholders, notably NGOs) consider that abandoning the EAP approach would send a misleading signal

[74] COM(2007) 225 final.

to the public that environmental policy is no longer at the heart of the EU project and no longer contributes to innovation, resource efficiency, sustainability and a better quality of life.

In particular, the final evaluation of the 6th EAP showed that it was perceived by stakeholders as a useful document in the broader European policy dialogue, helping to underpin and legitimise the environmental agenda at a time when concerns about the economic costs and benefits of new EU environmental policy proposals were raised. More specifically, the failure to put in place a well-designed Programme means that a number of opportunities would be missed:

– By not securing the common agreement of the co-legislators on the key challenges facing environment policy there may be a low level of commitment to existing objectives. This may be especially the case for recently adopted EU strategies (e.g. Biodiversity, Resource Efficiency, Low-carbon Economy). By pulling them together under the 7th EAP, which is subject to the ordinary legislative procedure, it would confer added legitimacy on these strategies and secure political commitment to their implementation.

– Given that EU environment policy encompasses a large amount of legislation, Environment Action Programmes serve as important reference documents for other institutions and actors, thus supporting environment integration and policy coherence. For instance, the EIB still uses the 6th EAP priorities as criteria to finance initiatives in the environment field. The same priorities have also guided research funding for environment under FP7. Clear goals will provide policy makers and other stakeholders, including business, with a clear sense of direction and a predictable and coherent framework for future action.

Given the "megatrends" set out in Section 2, this option would also not adequately address the systemic nature of the major environmental problems or allow for a coherent and holistic approach to the underlying problems. This aspect has been highlighted by the Council conclusions in 2011 and 2012 and by the European Parliament's resolution of April 2012, which highlighted the need for a strategic framework for EU environment policy encompassing the recently adopted roadmaps and strategies, identifying synergies and potential trade-offs and providing direction and guidance for their coherent implementation. It would have also left unaddressed health and environment issues, which are considered by many stakeholders, including the Council and Parliament, to be an important policy area for future environment policy development. This was confirmed by the results of the public consultation.

6.2.2. Option B) Business as usual

This option would respond to the request by the vast majority of stakeholders and other EU institutions for EU environment policy to continue to be framed by EAPs. Indeed, the Final Assessment of the 6th EAP confirmed that providing a framework was one of the main added values of the programme. Its adoption by co-decision was also seen by stakeholders as giving it more legitimacy and helping to create a wider sense of ownership for subsequent policy proposals – something that would be retained under this option.

Whilst this option would build on the positive lessons learned from the evaluation of the 6th EAP, it would not enable the shortcomings of the 6th EAP to be fully addressed. For instance, while this option would allow the thematic challenges highlighted in the SOER 2010 to be addressed, the thematic approach would not be effective in responding to the systemic risks,

or the increasing complexity and inter-linkages between environmental challenges and between environment policy objectives and those of other policies, as described in the SOER.

Another shortcoming identified in the evaluation of the 6th EAP relates to its structure, which lent itself to a large number of actions which varied both in scope and effect – many of which were added during the co-decision process. While the list of actions and priorities could help provide predictability with regard to forthcoming initiatives, thereby enabling Member States and other affected stakeholders to be better prepared, the 6th EAP evaluation noted that inclusion in the EAP was in practice no guarantee of better or smooth implementation of detailed policies and legislation.

The 6th EAP assessment also concluded that the ten-year timeframe was not always appropriate. In some cases it proved too long for certain policy areas in which scientific evidence was developing quickly (e.g. climate change or biodiversity), but in others (e.g. waste or resources) it proved to be too short to be able to assess improvements on the ground as a result of measures included in the Programme, due the long timeframe for their adoption and implementation..

Finally, the absence of a longer-term vision was highlighted in the final assessment as having compromised the 6th EAP's ability to deliver a clear message, which would have helped to ensure it maintained a high profile for the duration of its lifespan. As it happened, the 6th EAP gradually fell out of the limelight as priority shifted towards policy developments not foreseen by the programme.

6.2.3. Option C) An EAP focused on a set of priority objectives

As with Option B, this option would respond to the demand from stakeholders that environment policy continue to be framed by EAPs, while also ensuring the involvement of the co-legislators in defining priority objectives to be attained by the EU up to 2020, leading to stronger policy consensus and ownership of agreed actions and measures than Option A.

This option would build on lessons learned from the final assessment of the 6th EAP, for instance by focusing on securing commitment to a limited number of priority objectives and means to achieve them, supported by a robust justification for those selected. This in turn would increase the likelihood of their implementation at EU and national levels.

Also like in the case of Option B, it would provide a framework for a given period of time. However, under this option the timeframe would be aligned to the multi-annual financial framework 2014-2020 and other key policy documents such as the Europe 2020 Strategy, and have a shorter timeframe than the 6th EAP, resulting in actions being carried out more quickly. At the same time, the 2050 vision would serve as a reference point for longer-term action, beyond 2020.

By bringing together recent EU developments in environment policy and other related policy fields, and demonstrating how they contribute to reaching the broader strategic objectives of the Europe 2020 Strategy, the EAP could respond to the call from stakeholders, in particular the private sector, for a predictable future policy framework.

This option is also well suited to addressing other major cross-cutting priorities that are currently undermining the full delivery of the benefits of environmental policy and legislation. The analysis of stakeholder input suggests that a number of horizontal gaps existed within the 6th EAP related to the underlying drivers described earlier: integration, implementation,

knowledge base and adequate funding. One of the gaps filled by this option concerns the link between human health and the environment. Indeed, whereas 2011 saw the adoption by the Commission of strategies to address key challenges related to biodiversity and natural capital, resource efficiency and the low-carbon economy, with long-term visions, targets and/or milestones for 2020, there was no corresponding strategy addressing remaining challenges related to health and environment – an objective for environment policy set out in the Treaty. The new EAP will help address this gap and show how the elements of a sustainable and competitive economy, resilient ecosystems and a healthy environment for EU citizens are closely interrelated and mutually supportive.

However, this Option would still not provide any guarantee that commitments will necessarily lead to action on the ground. Achieving the priority objectives set out in such an EAP would still depend on the willingness of all actors -- EU institutions, national, regional and local administrations, as well in the business sector and civil society – to play their part. For this reason it may be important to agree targets in some policy areas where a clear policy orientation is needed. Targets could also help businesses by providing a clearer policy direction, which is important in terms of guiding investment decisions.[75]

7. OVERALL ANALYSIS OF THE PROPOSED 7TH EAP

This section analyses the overall impact of the chosen options for the policy content and the delivery mechanism.

7.1. Chosen option for the policy content

In terms of meeting the first three specific objectives, the BAU would not be sufficient. It would involve continued environmental impacts, as set out in the 2010 State of the Environment Report and discussed in Section 2.2 to 2.4.

For all three specific objectives, major efforts are needed to have smarter implementation in terms of either effectiveness or efficiency or coherency. Policy option 2 set out some commitments aimed at improving implementation, ensuring the right incentives for investment and improving the integration of environmental into other policy areas.

In some cases, policy option 2 would largely deal with the problem, because there is already a broadly adequate acquis in place, and the challenge is one of smarter implementation. In other cases, even with smarter implementation of the existing policies, there would still be gaps that have become more apparent with new knowledge or are simply emerging issues. In these cases, additional action is needed and policy option 3 would more fully deal with the identified environmental problems.

[75] Changing Pace, WBCSD, May 2012.

Table 5: Contribution of options 2 and 3 to addressing underlying problems

	Implementation	***Coherence***	***Investment***	***Knowledge***
Policy option 2 – smarter implementation	√	√	√	
Policy option 3 – smarter implementation and responding to new knowledge	√	√	√	√

7.2. Chosen option for the delivery mechanism

Option C provides the most suitable framework to support the delivery of the priority objectives and actions needed to achieve them, while responding most adequately to preferences expressed by the majority of stakeholders – including the other EU institutions. Table 6 lists the different actions, relating them to the different specific objectives. In addition, there are a number of compelementary measures focusing on a specific underlying driver. There are not options in relation to these complementary measures, but their impacts are discussed in Annex 6.

Table 6: Actions under the 7th EAP and relationship to specific objectives

Specific Objectives	Actions related primarily to a single Specific Objective	Complementary measures addressing all three Specific Objectives (the enabling framework)
	A fiche exists for each of these actions and measures	
Ensuring that Europe's natural capital is sufficiently resilient to pressure and change	To fully implement the EU Biodiversity Strategy to 2020	**Improving implementation** - Enabling more effective environmental inspections and surveillance - Ensuring Access to Justice - Supporting enhanced Complaint-handling and mediation mechanisms at national level - To establish information systems at national level that actively disseminate information sufficient to show that EU environment law is effectively implemented - To explore the practical role that partnership agreements might play in improving the implementation of specific environmental legislation **Improving the scientific and knowledge base for environment policy** - To improve the scientific evidence base for environment policy, including its accessibility, by simplifying, streamlining and modernising the collection, management and sharing of environmental data and information - To develop a systematic approach to anticipate, evaluate and manage emerging environmental risk - To fill existing knowledge gaps **Ensuring the right incentives exist for investment** - To ensure that environment and climate objectives are supported by adequate finance by: adequately reflecting environmental and climate priorities in the Partnership contracts; ensuring that at least 20% of the EU budget 2014-2020 is climate related and increasing the uptake of available EU funding for environmental action by at least 25% over current levels/2010 levels; and developing and applying a system for reporting and tracking environment-related expenditure - To progressively phase out environmentally-harmful subsidies, increasingly use market-based instruments, including taxation - To promote and increase private sector funding for environment and climate-related expenditure, in particular by facilitating access to innovative financial instruments - To step up efforts to establish comprehensive measurements of how sustainable our progress is (Beyond GDP), including natural capital accounting - Integration of environmental and resource-efficiency considerations into the European Semester **Improving integration and coherency** - To integrate environmental and climate-related conditionalities and incentives in policy initiatives, at EU and Member State level and to carry out systematic ex-ante assessments of the environmental (social and economic) impacts of policy initiatives at EU and Member State level. **Improving the sustainability of urban areas** - To support the achievement of minimum sustainability criteria by a majority of cities in the EU. **Ensuring effective international action** - To focus cooperation with the EU's Strategic Partners on the promotion of best practice in domestic environment policy and legislation, as well as convergence in multilateral environmental negotiations - To ratify key remaining or new MEAs well before 2020 and ensuring effective EU participation in other international processes - To initiate and implement actions to protect global forests - To focus cooperation with the countries covered by the European
	To develop a more strategic approach to protecting and enhancing forests and the services they provide	
	To strengthen the integration of land use aspects into decision making potentially including the setting of targets on soil and land	
	Taking further steps and measures to eliminate emissions from urban and industrial wastewater, fertilizer use and air emissions responsible for eutrophication	
	To fully implement the Water Framework Directive including taking further steps to reduce impacts on freshwater	
	To fully implement the Marine Strategy Framework Directive including reducing marine litter, potentially including the setting of targets	
Ensuring that its economy is highly resource efficient and low-carbon emitting	To fully implement the EU Climate and Energy Package by 2020	
	To fully implement EU waste legislation and use waste as a resource in particular by ensuring application of the waste hierarchy and the effective use of economic instruments including virtually eliminating landfilling	
	To address internal market barriers facing environmentally sound recycling activities in the EU	
	To reduce the overall environmental impact of production and consumption focusing in particular on food, housing and mobility sectors, potentially including the setting of targets	
Ensuring that the health and wellbeing of EU citizens continue to benefit from high degrees of environmental protection	To update EU policy on air quality and align it with latest scientific knowledge, identifying cost-effective measures to combat air pollution at source and strengthening efforts to reach full compliance with EU air quality legislation	
	To update EU noise policy and align it with latest scientific knowledge, identifying cost-effective measures to reduce noise at source	
	To step up implementation efforts for the Drinking Water Directive, in particular for small suppliers, and the new bathing water directive	
	To develop a strategy for a non-toxic environment addressing the combination effects of chemicals and safety concerns related to endocrine disruptors and developing a comprehensive approach for minimising exposure to hazardous	

Specific Objectives	Actions related primarily to a single Specific Objective	Complementary measures addressing all three Specific Objectives (the enabling framework)
	A fiche exists for each of these actions and measures	
	substances. To address effectively transparency and safety concerns related to nanomaterials in a coherent approach across different legislation	Neighbourhood Policy on gradual approximation with key EU environment policies - To engage proactively in an international work plan on enhancing climate change mitigation ambition identifying and supporting the concrete implementation of cost effective options for a range of mitigation actions that can close the ambition gap by 2020 - To fully integrate the substantive outcome of UNCSD 2012 into our action at European, regional, international and global level
	To agree and implement a EU climate adaptation strategy, including integrating climate change adaptation considerations into key EU policy initiatives and sectors	
	To further reduce water stress in the EU	

7.3. Efficiency

Clearly, environmental objectives can be met in different ways. Reflecting the principle of subsidiarity, environmental policy leaves many choices to the national or local level. However, the 7th EAP should improve the overall efficiency of policy (in terms of reducing the costs of achieving environmental objectives) in several ways:

– Firstly, by securing agreement on the strategic priorities that should guide environment policy and action up to 2020, and broadly on what needs to be done to attain them, the 7th EAP is more likely to result in action being taken on the ground, regardless of the level at which such action is needed (EU, national, regional, local).

– Secondly, having agreed on strategic priorities, it will be possible to identify the most cost-efficient actions for attaining them, in line with the principles of smarter regulation at the European and national level through evaluation of existing policies and impact assessment of new policy proposals.

In addition, a number of cross-cutting complementary measures will improve the cost-efficiency of action (see Annex 6 for additional details) by further addressing the underlying problems hindering the chances of reaching the aims and objectives set out in existing policy and legislation. These measures will contribute to all 3 of the specific objectives' attainment, and are set out in Table 6 and discussed briefly below as well as in section 7.4.

a) Better implementation

The high number of infringements, complaints and petitions attests to the need for a workable system to identify and resolve implementation problems, along with measures to prevent them from arising in the first place. Improvements in this respect will come from measures in the following areas:

– the effectiveness of environmental inspections and surveillance.

– access to justice in environmental matters

– complaint-handling and mediation mechanisms at national level

– the dissemination of information on how EU environment law is being implemented.

– the implementation of specific environmental legislation.

b) Better knowledge base

The quality of environmental policy will be improved by developing a more coherent system of environmental information management in Europe, more systematic approaches to assessing environmental risk, and filling research and information gaps. In the period up to 2020, improvements in the knowledge base will come from:

– simplifying, streamlining and modernising the collection, management and sharing of environmental data and information.

– improving approaches to anticipate, evaluate and manage emerging environmental risks in the EU.

– filling key knowledge gaps.

c) Providing the right incentives for investment

The mobilisation and uptake of adequate resources from a range of public and private sources will support the achievement of the set objectives. Securing investment depends on proper valuation on environmental goods, so the new EAP will include initiatives to measure the value of our ecosystems and the cost of their depletion, together with corresponding incentives. In particular improvements in this respect will come from ensuring that:

Improvements in this respect will come from ensuring that:

– environment and climate policy objectives are supported by increased finance from public and private sources, including EU funding; the uptake of this funding improves significantly and can be tracked

– the right market signals are sent to stimulate investment in environment and climate protection, encourage sustainable use and disincentivise practices that are harmful to the environment (e.g. phase-out of environmentally harmful subsidies, taxation of pollution, establishment of markets for environmental goods and services, natural capital accounting, etc.)

– environmental considerations are integrated into the European Semester process

– comprehensive measurements are established to measure how sustainable our progress is ('Beyond GDP')

7.4. Coherency

The actions taken in the context of policy options 1 to 3 will need to be mutually reinforcing. In many cases this will naturally be the case, for example actions to reduce the overall environmental impact of production and consumption will have across the board co-benefits. In other areas, there are synergies that need to be sought, but where found will ensure that the lowest-cost means of achieving objectives are utilised: this will often be the case where integration between policy areas is part of the solution; it can also be the case within environmental policy areas (such as water and climate change adaptation etc.).

The more troubling cases, which are not so frequent, involve possible conflict between attaining different environmental objectives. In these cases (such as the energy needed to clean water), special care will be needed to find innovative solutions and minimize any negative side-impacts. Some trade-offs between environmental, social and economic impacts have also been identified already in the report and some more specific ones are set out in Annex 6 for the various policy areas. Where significant trade-offs are present, those will be clearly identified and addressed during the Impact Assessment of any individual follow-up proposals.

One important area for ensuring coherency is for cities, which are where issues and solutions often come together in a concentrated manner. Urban policy is primarily an integration issue, where there is potential to focus efforts, share successes and develop new ways to tackle problems: for example, through ensuring cities meet minimum sustainability criteria.

At the general strategic level the EAP is in line with the growth and jobs objectives set out in the Europe 2020 Strategy. The alignment of the duration of the 7th EAP to the MFF and Europe 2020, will ensure that this programme is fully enshrined and supportive of the broad EU sustainable development objectives. A long-term vision that builds on those already established for the Resource Efficiency and Low-Carbon Roadmaps, as well as the 2020 Biodiversity Strategy, would help provide a focus for policies and actions within and beyond the environment domain, even beyond the duration of a new EAP. This would help economic actors to plan investments accordingly. Almost all stakeholders consulted (including the Council and the European Parliament) saw this as an added value of a new EAP.

Furthermore, it should be recognised that considerable efforts at mainstreaming are already taking place across fields such as transport, industrial policy etc. This is though not always happening at all level of governance. Where this is the case, the 7th EAP will ensure that efforts to improve coherence and integration are systematic and effective and that policy actions deliver, as far as possible, multiple benefits for the environment and for other policies.

Finally, whilst existing environment and climate related strategies go some way towards making the case for better coherence between the objectives sought and those of specific related policy areas, the 7th EAP will pull these strategies together as part of a single narrative. This can better demonstrate the inter-linkages between them and underscore the potential for developing more joined-up policy approaches to deliver multiple benefits across the environment policy spectrum, as well as for different policies. Securing the explicit endorsement of stakeholders and of the co-legislators to the overall narrative set out in the 7th EAP will also help to strengthen arguments in favour of better coherence between environment and other policies.

7.4.1. International coherency

Many environmental challenges, like climate change, ozone layer depletion and natural resource degradation, have a truly planetary dimension and can only be fully solved through a global approach. Others, such as air quality, water resources and nature conservation have a strong international or regional dimension. Therefore, strong, focused, united and coherent actions by the EU Institutions and the Member States internationally are an element of many of the actions set out in policy options 1 to 3.

In order to achieve positive impacts, these actions need to be underpinned by a strong rule-based framework for global environment policy and fostering financial resource mobilisation including foreign direct investment and Official Development Assistance (ODA) as an

important financial catalyst for development, leveraging finance from other sources including the private sector and international financial institutions.

Strengthening the EU's bilateral cooperation with neighbourhood countries and major economies (Strategic Partners) also has the potential to bring about improvements, both within and beyond the borders of the EU.

Trade and sustainable development can be mutually supportive. This requires, among other things, upholding an open and non-discriminatory multilateral trading system while ensuring no country is prevented from taking measures to promote sustainable development, provided that such measures are not discriminatory or constitute a disguised restriction on international trade. Mutual supportiveness between trade and sustainable development can also be promoted by reducing trade barriers for environmentally-friendly goods, technologies and services – thus creating new export markets, including for developing countries. A good example of cooperation between the EU and developing countries are the so-called FLEGT Voluntary Partnership Agreements that help improve forest law enforcement and combat illegal timber trade.

7.5. Overall impacts

The overall assessment of the different options against the criteria of effectiveness, efficiency and coherency is set out in Table 7. It reflects the preferred option of a combination of option 3 delivered through option C, as the option that best delivers in terms of the three criteria.

Table 7: Overall assessment of options

	Effectiveness	Efficiency	Coherency
Step 1: choice of actions			
Option 1	0	0	0
Option 2	+	++	+
Option 3 (preferred option)	++	++	++
Step 2: choice of actions (how best to deliver Option 3)			
Option A	-	-	-
Option B	0	0	0
Option C (preferred option)	+	+	++

The strategic nature of the programme means that the scores will partially depend on the specific policy tools that will eventually be chosen to deliver the identified priority objectives (e.g. market-based instruments, new legislation, more stringent legislation, etc.), and this will only be determined following specific Impact Assessment exercises. This will affect the cost-effectiveness and the specific social and economic impacts, but also the role of national, regional and local authorities in implementing policies and legislation agreed at EU level (e.g. the introduction of additional reporting/permitting requirements, more stringent standards or complex governance modalities).

As well as delivering environmental improvements, a strategic 7th EAP that applies the principles of smarter regulation will boost competitiveness by improving resource efficiency. This is because resource efficiency involves promoting greener, more efficient technologies, and related employment opportunities and thus by improving productivity supports growth

and jobs. (See Annex 5 for details) Meanwhile, ensuring the resilience of our ecosystems that support growth and protecting the health of our citizens is essential to ensure the sustainability of economic advancement.

Macroeconomic modelling of the economic underpinning for resource policy suggests that that there is significant scope to improve resource efficiency in the EU. Every percentage point reduction in resource use is worth around 23 billion Euros to business and could lead to up to 100,000 to 200,000 new jobs. The average annual growth (2000 - 2008) in eco-industry jobs is approximately 2.7 %. Overall, the general trend is of a growing number of 'green jobs', with many more in jobs outside the eco-industry but dependent on the environment as an input.

The results of the modelling work developed by UNEP suggest that over time investing in a green economy enhances long-term economic performance, by enhancing stocks of renewable resources, reducing environmental risks, and rebuilding capacity to generate future prosperity.[76]

At the same time, governments are facing severe pressures to reduce budget deficits, and there are opportunities for environment related policies to contribute to fiscal consolidation (by removing environmentally harmful subsidies and shifting the tax burden from capital and labour to environment).

There are many estimates of the costs and gains of policy actions in environment and health. For instance, the ban of leaded gasoline provided immediate and significant human health benefits. Considering the environment and health costs caused by air pollutants alone, €20 to 45 billion will be saved each year once the future targets of EU legislation are met[77]. WHO estimated in 2011 that at least one million healthy life years are lost every year from traffic-related noise in the western part of Europe.[78] Any improvement of the health-related environmental problems would impact not only the quality of life of individuals and communities, but also reduce the costs on the public health budgets of national, regional and local authorities.

Efforts to motivate more private investment into environmental and climate change action will strengthen the effectiveness of the EU's budget by creating a significant leverage effect. Data suggest that investing in resource efficiency (saving water or energy, recycling materials) makes a lot of economic sense. Investing also into actions to enhance the resilience of ecosystems, in particular when these provide a whole array of food, raw materials and services is paramount for the health of our economy and for addressing risks associated with business continuity.

Improving the implementation of the environmental *acquis* can bring new benefits for the environment but also for the economy that otherwise remain non-realised. Insufficient and uneven implementation of the *acquis* brings additional uncertainties and risks for business, which, while difficult to quantify, can be significant. One effect is on the eco-industries. Studies suggest that uncertainty about environmental policy affects innovation in environmental technologies. Such innovations are very important as they can reduce the costs of compliance and they can create new markets and job opportunities. The global market for

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[76] Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication (UNEP, 2011)

[77] COWI-Report 2011 http://ec.europa.eu/environment/enveco/economics_policy/pdf/report_sept2011.pdf

[78] http://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf

eco-industries is estimated at roughly €1.15 trillion in 2010. There is broad consensus that the global market could almost double, to around €2 trillion in 2020. The EU-27 has a strong export position vis-à-vis nearly all of the world's largest economies, and around a third of the current market. In this way, the 7th EAP will support efforts to deliver a green economy.

8. MONITORING AND EVALUATION

The 6th EAP promoted the use of indicators for the monitoring of the state of environment and progress in reaching the targets set out in the EAP. The decision establishing the programme stipulated that one of its objectives was to stimulate regular monitoring, via relevant indicators, elaborated where possible on the basis of a common methodology for each sector, and reporting on the process of sectoral integration.

In response to the 6th EAP and policies under its scope, monitoring procedures were put in place that still today often represent state of the art, such as the monitoring of the GHG emissions which forms the basis of the EU Emissions Trading System. This monitoring has proven to be relatively low-cost: the administrative burden of EU environmental regulation is only 1% of the administrative burden of all EU regulation.

The Commission will monitor the implementation of the new EAP in the context of the regular monitoring process of the Europe 2020 Strategy. A full evaluation of the Programme will be performed before 2020.

The indicators for progress towards meeting the specific objectives set for the new EAP will necessarily be a set of indicators measuring the progress for the different priority objectives of the new EAP. As most of the priority objectives identified in this Impact Assessment concern existing policy areas, the existing indicators developed by the EEA, the JRC or ESTAT are suitable for ensuring adequate monitoring of progress towards achieving the priority objectives. For the few new or emerging issues (e.g. the emerging threats to human health and the environment), indicators will be identified, as appropriate, through the specific Impact Assessments conducted as part of the process of determining the best policy response to address them.

The overall assessment of progress towards the general objective will rely on these more detailed indicators but also on the monitoring of the implementation of the Roadmap to a Resource Efficiency Europe. These indicators address the environment, but also its links with the economy and the society. Within this context there is a commitment to progress with robust and easily understandable indicators to measure progress in improving resource efficiency, including indicators on natural capital and environmental impacts of resource use. These indicators will be developed together with stakeholders by the end of 2013 and will be used for measuring overall progress towards a resource efficient European economy and society. Further improvements in monitoring may come, for example, also through common reporting systems for all environmental policies and the Shared Environmental Information System (SEIS).

The quality of the statistical and other monitoring data will be improved, drawing on existing assessment frameworks such as iGrowGreen, with a view to their inclusion in the mid-term review of the Europe 2020 strategy. In this context, work is under way also as part of the "GDP and beyond" process, in order to develop a more comprehensive composite index reflecting sustainability aspects.

The monitoring of improvements in the state of the environment will be performed through regular EEA reports and based on the EEA's Core Set of Indicators. We are currently in discussion with the European Environment Agency (EEA) on how to align the preparation and publication of the State and Outlook of the European Environment Report (SOER) with the review of the new EAP. The reports on progress with the implementation of the programme and with the state of the environment will benefit from input also from other key institutional actors, like the Environmental Outlook reports of the OECD, reports on Climate Change by the IPCC, and reports from UNEP on the global environment.

ANNEXES

Annex 1: Details of the responses to the public consultation

Annex 2: Linkages of environment policy issues

Annex 3: Targets set by EU environment policy

Annex 4: The outlook to 2020 and beyond to 2050

Annex 5: The link between the environment and competitiveness

Annex 6: The underlying analysis of priority objectives

Annex 7: Overview of the evaluation of the 6th EAP

Annex 8: Overview of the main studies used for the IA

Annex 9: Glossary