

Policy Department
Economic and Scientific Policy

Assessment of the achievements of the 6th Environmental Action Programme

This study was requested by the European Parliament's Committee on the Environment, Public Health and Food Safety.

Only published in English.

Authors: Marc Pallemarts, Kristof Geeraerts (IEEP)*
Institute for European Environmental Policy
London, United Kingdom

Administrator: **Gian Paolo MENEGHINI**
Policy Department A: Economic and Scientific Policy
DG Internal Policies
European Parliament
Rue Wiertz 60
B-1047 Brussels
Tel: +32 (0)2 283 22 04
Fax: +32(0)2 284 90 02
E-mail: gianpaolo.meneghini@europarl.europa.eu

Manuscript completed in October 2007.

The opinions expressed in this document do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorised provided the source is acknowledged and the publisher is given prior notice and receives a copy. E-mail: poldep-science@europarl.europa.eu.

* Thanks to: Jason Anderson (IEEP, Brussels), Catherine Bowyer (IEEP, London), Ingo Bräuer (Ecologic, Berlin), Alec Estlander (SYKE, Helsinki), Andrew Farmer (IEEP, London), Mikael Hilden (SYKE, Helsinki), Peter Hjerp (IEEP, London), Marianne Kettunen (IEEP, Brussels), Nils Meyer-Ohlendorf (Ecologic, Berlin), Per Mickwitz (SYKE, Helsinki), Tanja Münchmeyer (BIO IS, Paris), Alexander Neubauer (Ecologic, Berlin) and Frans Oosterhuis (IVM, Amsterdam).

STUDY FOR THE EP COMMITTEE ON ENVIRONMENT, PUBLIC
HEALTH AND FOOD SAFETY

IP/A/ENVI/FWC/2006-172/LOT1/C1/SC8

Assessment of the achievements of the 6th Environmental Action Programme

CONTENTS

EXECUTIVE SUMMARY	iv
1 INTRODUCTION	1
2 SCOPE OF THE STUDY	3
3 IMPLEMENTATION OF THE ACTION PROGRAMME ACROSS ITS FOUR 'KEY ENVIRONMENTAL PRIORITIES'	4
3.1 Climate change	4
3.1.1 Overall aims and international context	4
3.1.2 Demonstrable progress towards meeting the Kyoto commitments	4
3.1.3 Reducing energy sector emissions	6
3.1.4 Reducing transport sector emissions	8
3.1.5 Other sectors and measures	10
3.1.6 Adaptation.....	12
3.1.7 Enlargement/ candidate countries:.....	13
3.1.8 Assessing the outcomes against objectives.....	13
3.2 Nature and biodiversity	14
3.2.1 Biodiversity.....	14
3.2.2 Prevention of accidents and natural disasters	22
3.2.3 Thematic Strategy on Soil Protection	24
3.2.4 Sustainable management of extractive industries.....	25
3.2.5 Integration of landscape values into other policies.....	25
3.2.6 Integration of biodiversity into agricultural polices	26
3.2.7 Marine environment.....	27
3.2.8 Strategies and measures on forests	30
3.2.9 Genetically modified organisms (GMOs)	30
3.2.10 General conclusions.....	32

3.3	Environment and health	32
3.3.1	Research programmes and scientific expertise.....	32
3.3.2	Chemicals	34
3.3.3	Pesticides	38
3.3.4	Water.....	40
3.3.5	Air quality.....	41
3.3.6	Noise	43
3.3.7	Urban environment	44
3.4	Natural resources and wastes	46
3.4.1	Natural resources, waste prevention and waste recycling	46
3.4.2	Developing or revising legislation on waste.....	53
4	ROLE AND CONTRIBUTION OF THEMATIC STRATEGIES	57
4.1	Introduction	57
4.2	Air pollution	58
4.3	Marine environment	60
4.4	Waste recycling and prevention	61
4.5	Urban environment	64
4.6	Sustainable use of natural resources	65
4.7	Sustainable use of pesticides	66
4.8	Soil protection	67
5	IMPLEMENTATION AND ENFORCEMENT OF EXISTING LEGISLATION 69	
5.1	Ensuring better enforcement in the Member States	69
5.2	Commission policy with respect to the handling of infringements	70
6	ECO TAXES AND ENVIRONMENTALLY HARMFUL SUBSIDIES	74
6.1	Environmental taxation	74
6.1.1	Policy initiatives and developments at EU level	74
6.1.2	The use of environmental taxes in Member States	77
6.1.3	Revenues from environmental taxes.....	79
6.2	Environmentally harmful subsidies	80
6.2.1	Policy initiatives	80
6.2.2	Amounts and trends	81
6.3	Conclusions	82

7	ASSESSMENT OF THE NEED TO DEVELOP FURTHER EU LEGISLATION	83
7.1	Introduction	83
7.2	Environmental policy integration	85
7.3	Integration through procedures	87
7.4	Provisions for monitoring and evaluation of the environmental effectiveness of legislation	87
7.5	The need for innovation	89
8	CONCLUSIONS	90
9	REFERENCES	91
	Acronyms	92

EXECUTIVE SUMMARY

In April 2007, the European Commission issued a Communication on the mid-term review of the implementation of the 6th Environmental Action Programme (6EAP) (COM(2007)225). Agreed in 2002, the 6EAP sets out priority objectives to be attained by the EU in the field of environmental policy before 2012. It reflects a joint commitment of the European Parliament, the Council and the Commission and thus provides an important benchmark against which to evaluate the evolution of policy. According to the Commission, 'the EU is generally on-track with adopting the measures outlined in the Action Programme'.

This study, commissioned by the European Parliament, provides an independent assessment of the achievements of the 6EAP across all four of its 'key environmental priorities'. It does not, however, claim to be a comprehensive assessment covering all areas of environmental policy addressed in the Programme and every single objective it contains. At the Parliament's request, the authors have focused on the 'key environmental priorities' in so far as they relate to the EU's internal policies.

In addition, this study also discusses in particular the role of the Thematic Strategies developed pursuant to the 6EAP as well as two of the main strategic approaches to meeting the environmental objectives identified in the Programme: more effective implementation and enforcement of Community legislation and the use of market-based and economic instruments, in particular the use of environmental taxation and the reform of environmentally harmful subsidies. Finally, the authors have assessed the need for further development of EU environmental legislation.

The key findings with respect to the policy areas examined are the following:

Climate change: While the EU has achieved its international political objective of entry into force of the Kyoto Protocol and has made significant progress in the development of policies and measures designed to contribute to meeting its Kyoto commitments for the period 2008-2012, the most recent assessment of emission trends estimates that these commitments can only be met if additional measures are taken, including recourse to Kyoto's flexible mechanisms. Indeed, achievement of internal policy objectives with respect to the main source sectors of greenhouse gas emissions in the EU is uneven, with rising transport emissions and slow progress on energy efficiency clearly standing out as the main areas of concern.

Nature and biodiversity: Progress to date is insufficient to achieve the overall objective of halting biodiversity decline by 2010, but serious efforts are being made to protect habitats and species on the ground through implementation of existing legislation. Some progress has also been made in the integration of environmental concerns in the CAP and CFP, but the operational integration of biodiversity conservation into a wider set of policy areas has lagged. Strategies for the protection of the marine environment and soils have been proposed but are unlikely to produce concrete results in terms of environmental improvement by 2012. Legislative objectives with respect to GMOs have been met, but whether the measures in place are sufficient for the effective monitoring and control of health and environmental effects is debatable.

Environment and health: New chemicals legislation (REACH), though considerably delayed, represents significant progress but falls short of the ambitious objectives laid down in the 6EAP. Separate measures to reduce the impacts of pesticides on health and the environment are also significantly delayed and still subject to final approval by Parliament and Council. The more limited objectives in the area of water quality have generally been met, but a lot still hinges on the full implementation of the Water Framework Directive whose timeframe extends beyond 2012. The measures taken and proposed to improve air quality and urban environmental quality and further reduce noise pollution are far from sufficient to achieve the health and environment protection objectives of the 6EAP.

Natural resources and wastes: The Thematic Strategies in these two areas have watered down the 6EAP objectives. The measures proposed to promote more sustainable use of natural resources are clearly insufficient to achieve the objective of breaking the link between economic growth and resource consumption but merely provide a framework for further long-term policy development. New measures have been proposed, and some already adopted, in the field of waste prevention and management, but priority is given to recycling and recovery rather than reduction of waste production.

Implementation and enforcement of existing legislation. While political discourse on 'better regulation' stresses the need to ensure proper implementation of existing law, the evidence shows that the Commission lacks a coherent strategy and sufficient resources for adequate monitoring and enforcement efforts responding to the needs and concerns of citizens. It has, however, made valuable proposals to strengthen enforcement at the national level through improved access to justice and harmonised use of criminal law, but these have yet to be adopted by Parliament and Council.

Environmental taxation and reform of environmentally harmful subsidies. Since the adoption of the 6EAP, political support for wider use of market based instruments in environmental policy has frequently been reiterated by EU institutions, but concrete measures at EU level have hardly materialised, beyond the introduction of emissions trading in climate policy. The Commission has only very recently published a green paper on the subject of market based instruments and is inviting further debate before envisaging any initiatives. Despite the growth in the number of environmental taxes at Member State level, the share of these taxes in total tax revenues remains relatively small and has even declined in recent years. Despite the commitments made in the 6EAP, no concrete steps towards the reform of environmentally harmful subsidies are expected before 2008.

This review of the implementation of the 6EAP has shown that the efforts of the institutions to attain the 'priority objectives set out' – to quote the terms of Article 175(3) of the Treaty – are quite deficient in many areas of environmental policy and that the state of implementation of the Programme at mid-term does not indicate that most of these objectives are likely to be effectively fulfilled before 2012. Progress towards the 6EAP objectives has been made across all four 'key environmental priorities', but in most cases this progress is not sufficient to put the EU on course to achieve the targets agreed upon in 2002. The Commission's assertion that 'the EU is generally on-track' in implementing the 6EAP is not supported by the evidence presented in this study, unless one chooses to disregard the timeframe of the Programme and is prepared to equate Thematic Strategies with operational policy measures.

The Thematic Strategies, which have become central to the implementation of the 6EAP, were initially envisaged only as an intermediate policy tool for the purpose of identifying further proposals for legislative and other measures designed to achieve the objectives set forth in the Programme. This new procedural tool has increased the importance of the pre-legislative processes and created additional opportunities for stakeholder involvement and a more strategic approach to EU legislative policy. On the other hand, together with impact assessment – one of the cornerstones of the ‘better regulation’ policy introduced at the same time as the adoption of the 6EAP – the development of Thematic Strategies has considerably lengthened the duration of the environmental policy-making process, effectively delaying the formulation of concrete policy proposals and adoption of resulting measures.

1 INTRODUCTION

The 6th Environmental Action Programme (6EAP) was formally adopted on 22 July 2002, by a joint decision of the European Parliament and of the Council (Decision 1600/2002/EC, hereafter also referred to as ‘6EAP Decision’) based on Article 175(3) of the Treaty establishing the European Community (EC Treaty). It was in fact the first such Action Programme to be elaborated through a co-decision procedure in accordance with that Treaty provision, which was inserted into the EC Treaty by the Treaty of Maastricht.

While earlier action programmes were in fact Commission documents, which subsequently received some form of political endorsement from the Council through a qualified declaration or resolution, the fact that the 6EAP is the result of a formal inter-institutional co-decision process provided for in the Treaty (¹), gives it a particular kind of political importance and legitimacy which its predecessors lacked. It is not merely a Commission programme, but a formal act of the European Parliament and Council based on a Commission proposal, embodying a commitment of all three Institutions. It therefore constitutes an important benchmark against which to judge the evolution of EU environmental policy since 2002.

Article 175(3) EC established a legal framework for the institutional practice, which had developed informally since the start of the Community’s environmental policy, of periodically elaborating action programmes. It provides that ‘*general action programmes setting out priority objectives to be attained*’ are to be adopted by way of the co-decision procedure. It then goes on to state that the ‘*measures necessary for the implementation of these programmes*’ shall themselves be adopted in accordance with the legislative procedure laid down in either Article 175(1) or (2). The institutional and legal context in which the 6EAP has been formulated and the way in which it has been formalized create legitimate expectations on the part of EU citizens that the institutions will make genuine efforts to achieve the agreed objectives. Their failure to do so would be a serious political issue, which would need to be addressed through political means. It is from this perspective that we have undertaken an assessment of the implementation of the 6EAP in the present study.

The procedure leading to the adoption of the 6EAP Decision in 2002 was initiated by the submission of the Commission’s proposal to the European Parliament and Council in January 2001 (COM(2001) 31) and lasted a year and a half, during which intensive political negotiations were held within both institutions as well as between them in the Conciliation Committee.

¹ This also implies that when we refer to the 6EAP, we mean the Programme in its final form as formally adopted by the European Parliament and the Council in Decision 1600/2002/EC, and not the Commission’s version as laid down in Commission document COM(2001) 31. With respect to earlier EAPs, up to and including the 5EAP, the usual practice was to refer to the Commission document as the Programme, and not to the much shorter Council declaration or resolution endorsing it. But since the 6EAP as adopted is the result of a formal co-decision procedure involving all three institutions, the original Commission document only constitutes the initial step in this procedure of which Decision 1600/2002/EC is the final and authoritative outcome. The only remaining relevance of the Commission’s proposal is that its explanatory memorandum may shed some light on that institution’s intentions and may still be useful for interpretation purposes, to the extent that it does not appear from the European Parliament and Council Decision that the co-legislators actually had a different intention.

The Commission's proposal for the 6EAP followed on from a 'global assessment' of the implementation of the 5EAP (COM(1999) 543), which had been requested by Parliament and Council in their 1998 decision on the review of the 5EAP. This assessment, conducted by the Commission services on the basis of extensive consultations, concluded that, during the period of the 5EAP, despite improvements in some areas of environmental policy, 'practical progress towards sustainable development has been rather limited'.

It is too early for a 'global assessment' of the 6EAP, since the Programme covers a period of ten years starting from July 2002. The 6EAP Decision states that the objectives and targets established by the Programme should be fulfilled before its expiry in 2012, 'unless otherwise specified'. (Art. 1(2)) Article 11 of the Decision specifically provides for a mid-term review to be carried out by the Commission 'in the fourth year of operation of the Programme', i.e. 2006. This review report is to 'evaluate the progress made in its implementation together with associated environmental trends and prospects (...) on the basis of a comprehensive set of indicators'. (Art. 11(1)) The Commission submitted its Communication on the mid-term review of the 6EAP to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions almost one year behind schedule, on 30 April 2007. (COM(2007) 225) The actual Communication is accompanied by an impact assessment providing additional background information, including an overview of environmental trends and perspectives in four priority areas. (SEC(2007) 546/2)

The Commission's report addresses the extent to which the commitments made in the 6EAP are being met, discusses the adequacy of the strategic approach set out in the Programme in light of the most recent scientific evidence, and considers if this approach should be 'reassessed in light of the changed political context since 2002'. According to the Commission, 'the EU is generally on-track with adopting the measures outlined in the Action Programme'. However, despite the progress that has been made 'the EU's level of ambition needs to be increased', since 'the EU is not yet on the path of sustainable development'. The Commission argues that 'five years into a ten-year programme is too early' to assess the results of the measures proposed under the 6EAP, most of which still need to be fully implemented. Its review of the most recent scientific evidence has identified some gaps between 6EAP objectives and measures planned. In the relevant areas 'existing measures will have to be strengthened or new measures adopted'. Overall, however, no major overhaul of the Programme is proposed.

2 SCOPE OF THE STUDY

From the outset, the 6EAP identifies four ‘key environmental priorities’ to be addressed by the Community: *climate change, nature and biodiversity, environment and health* and *natural resources and wastes* (Art. 1(1)). It then enunciates a number of general principles and overall aims for each of these priority areas as well as for the implementation of the programme as a whole (Art. 2) and outlines ‘strategic approaches to meeting environmental objectives’ which are to be applied across the board (Art. 3). The most operational objectives are to be found in provisions specifying objectives and ‘priority areas for action’ for each of the four ‘key environmental priorities’ mentioned above (Art. 5-8), and in a further provision addressing the external dimension of EU environmental policy (Art. 9). Finally, the programme provides for a number of cross-cutting actions to improve the process of environmental policy-making itself (Art. 10).

As mentioned above, Thematic Strategies were introduced as one of the main tools for implementing the 6EAP. (Art. 4) Overall, the 6EAP provides for Thematic Strategies to be drawn up for seven themes: air pollution, waste recycling and prevention, marine environment, soil protection, sustainable use of pesticides, sustainable use of resources and urban environment. However, not all ‘key environmental priorities’ need to be addressed by Thematic Strategies. The 6EAP includes many objectives and actions that fall outside the scope of these strategies and for which the programme itself is considered to provide sufficient guidance.

In determining the scope of this study in consultation with the European Parliament, we have chosen to focus on the objectives and priorities for action listed under the four ‘key environmental priorities’ (covering all sub-themes), on the seven Thematic Strategies called for in the 6EAP, and on some of the strategic approaches to meeting environmental objectives: the implementation and enforcement of EU legislation and the use of economic instruments, in particular through reforms of environmentally harmful subsidies and environmental taxation.

Finally, we also decided to concentrate on the implementation of the provisions of the 6EAP relating to the *internal* environmental policy of the EU, without addressing the Union’s external action, which could quite legitimately be the subject of a separate study in its own right. Similarly, we confine ourselves to assessing implementation of the 6EAP at EU level. While we recognize that the 6EAP also calls for action at the level of the Member States, evaluating national implementation in the Member States was impossible within the scope of this study.

The assessment of implementation across the four ‘environmental key priorities’ in chapter 3 of this study will be followed by an assessment of the role and contribution of the Thematic Strategies in chapter 4. Chapter 5 and chapter 6 will address, respectively, implementation and enforcement issues and the use of economic instruments (subsidy reforms and fiscal measures). The need to develop further EU legislation will be assessed in chapter 7. Chapter 8, finally, will end up with conclusions and suggestions.

3 IMPLEMENTATION OF THE ACTION PROGRAMME ACROSS ITS FOUR 'KEY ENVIRONMENTAL PRIORITIES'

3.1 Climate change

3.1.1 Overall aims and international context

The 6EAP emphasises climate change as 'an outstanding challenge of the next 10 years and beyond' and aims to contribute to the long term objective of stabilising greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system, as laid down in the UN Framework Convention on Climate Change (UNFCCC). As a first step, the EU is committed to the full implementation of the Kyoto Protocol, which implies fulfilment of the - 8 % emission reduction target for the EU as a whole for the first commitment period (2008-2012). 'Demonstrable progress' towards this end was to be achieved by 2005. At the same time, the measures planned under the 6EAP are aimed at 'placing the Community in a credible position to advocate an international agreement on more stringent reduction targets' beyond 2012.

The 6EAP does not provide for the adoption of a Thematic Strategy on climate change. The priority actions in this area are largely based on the European Climate Change Programme (ECCP), which was launched by the Commission in 2000 (COM(2000) 88), independently of the 6EAP.

3.1.2 Demonstrable progress towards meeting the Kyoto commitments

'Demonstrable progress' is a term used under the Kyoto Protocol referring to a report on progress towards targets that Parties were required to submit to the first COP/MOP in 2005. The EU was able to refer to its policy commitments under the ECCP (see below) and to its emissions trajectory – in that sense it fulfilled its reporting duty under the Protocol. In terms of the numerical progress made to date in meeting targets, the June 2007 report of the European Environment Agency showed that EU-27 emissions (without land use, land use change and forestry) decreased by 7.9 % between 1990 and 2005. In the EU-15, the reduction was only 1.5 % between 1990 and 2005. When compared to a trend line drawn from 1990 emissions to the target level in 2010, EU-15 emissions were 4.1 index points above this line in 2005.

The February 2007 EEA assessment of emissions trends towards 2010 estimates that for the EU-15, the Kyoto commitment of a reduction of 8 % can only be achieved by using the combined effect of existing and additional domestic policies and measures, Kyoto flexible mechanisms and carbon sinks.

Improved monitoring of greenhouse gas emissions

The EU's GHG monitoring rules were originally laid down in a 1993 Decision (Decision 93/389/EEC). As announced in the 6EAP, a new Monitoring Decision was adopted in 2004 (Decision 280/2004/EC), which updated the methodology to reflect the requirements of the Kyoto Protocol. Decision 2005/166/EC provides more detailed rules for various articles of the Monitoring Decision that require additional explanation. Currently DG Environment is sponsoring research to examine the way Member States do their monitoring and projections of future emissions, with a view to improving the methodologies.

EU policies and measures resulting from the European Climate Change Programme

The first European Climate Change Programme (ECCP I) was launched in March 2000 through a multi-stakeholder consultative process ⁽²⁾, with stakeholders from industry, national officials, NGO and independent experts, working together in a number of working groups to develop proposals on policies and measures to address climate change. The work of the ECCP culminated in a report in June 2001, which identified the most environmentally and cost effective EU-level measures enabling the Union to meet its target under the Kyoto Protocol, complementing Member State efforts.

The report identified 42 possible measures, which could lead to some 664-765 Mt CO₂eq emissions reductions that could be achieved at a cost lower than 20€/tonne CO₂eq. This is about double the emissions reduction required for the EU in the first commitment period of the Kyoto Protocol from 1990 levels. Real gains, however, depend on actual implementation and the interplay of the various measures.

A Commission Communication on the implementation of the first phase of the ECCP I (COM(2001)580) was published in 2001, converting the ECCP recommendations into a clear political commitment from the Commission. This Communication contained a number of proposals for legislation, some of which have been tabled and adopted.

The second phase of the ECCP I (2002-2003) was concluded with the publication, in April 2003 ⁽³⁾, of an ECCP progress report. This report concluded that progress had generally been good, as many proposals that had been outlined in the first ECCP report had been implemented, or were under development. The one notable exception was the transport sector, for which the implementation of measures was 'difficult and show[ed] slow progress'. The report also highlighted 'new challenges', including taking forward the so-called 'coalition of the willing' on renewable energy (Johannesburg Renewable Energy Coalition), which resulted from the Johannesburg World Summit on Sustainable Development (WSSD); the possible integration of climate change considerations into the Structural and Cohesion Funds post 2006, and the continuing challenge of reducing emissions from transport. It underlined the fact that the ex ante assessment of potential emission reductions from any measure will not necessarily 'coincide' with the actual reductions, as the impact of some of the measures will depend on the way in which they are implemented by Member States.

In February 2005, the Commission announced in its Communication 'Winning the battle against climate change' (COM(2005)35) that the Commission 'will review progress and explore new actions to systematically exploit cost effective emission reduction options in synergy with the Lisbon strategy', indicating the creation of the second European Climate Change Programme (ECCP II), which was launched in October 2005 at a major stakeholder conference in Brussels.

Under the ECCP II new working groups were established, covering carbon capture and geological storage, CO₂ emissions from light-duty vehicles, emissions from aviation, and adaptation to the effects of climate change. In addition, one working group started to assess the implementation of the ECCP I policies and measures in the Member States and their effects in terms of emission reductions.

² Communication on policies and measures to reduce GHG emissions (COM(2000)88).

³ 'Second ECCP Progress Report: Can We Meet Our Kyoto Targets?' online at <http://www.europa.eu.int/comm/environment/climat/eccp.htm>

Reports produced under the ECCP review indicate significant differences in climate policy implementation between Member States, and stress the weakness of the reported data, which does not provide the detailed information required for a complete assessment. In order to improve this situation, the Commission is planning some additional methodological work to start in 2007. The ongoing review of the ECCP is expected to lead to improvements of the climate change policy framework in the EU.

Establishing an EU emissions trading scheme

Directive 2003/87/EC established the EU Emissions Trading Scheme (ETS), and its operation began on 1 January 2005. It is to be noted that, though included as part of the goals of the 6EAP, the ETS results from a legislative initiative taken prior to the 6EAP. The first trading period runs from 2005 to 2007, and the second from 2008 to 2012. The ETS is clearly the primary achievement of EU climate policy to date, being unique in the world and a model for other nascent systems. At the same time it is a lightning rod for criticism, particularly with respect to the leniency of first period allocations and the resultant low carbon price (\$0.05/ tonne in September 2007). However, second period National Allocation Plans (NAPs) show more promise, and the Commission has endeavoured to take a harder line on allocation decisions. Already there are estimates of second period credit prices that are much higher than current levels (currently forward-trading at a price of around €18/tonne⁽⁴⁾). An assessment undertaken by Schleich, J. et al. (2007) suggests that the emission budget reductions required by the Commission for the first 14 NAPs submitted represent a significant and important step towards a more effective and efficient EU ETS. However, domestic reductions may be limited, considering the heavy use of project-based credits from the Kyoto flexible mechanisms by several Member States.

In November 2006, the Commission presented a report outlining its first evaluation of the ETS and setting an agenda for a future revision of the scheme. In this Communication (COM(2006)676), the Commission admits that simplification and more predictability will be needed in order to improve the market liquidity of the system. In addition, the report emphasizes that there is growing consensus on the key strategic issues for review, but that more experience and evaluation are needed to address these issues. Changes will thus not be implemented before the third trading period (2013 onwards) and legislative proposals will likely be presented at a later stage. In the meanwhile, the Commission intends to strengthen the consultation process. A special working group under the ECCP II has prepared recommendations for a revision of the EU ETS in close cooperation with all stakeholders, and the Commission will present new legislation based on the recommendations reported, probably in December 2007.

3.1.3 Reducing energy sector emissions

Inventory and review of inefficient and unsustainable subsidies

In 2002 the Directorate General for Transport and Energy (DG TREN) published a Commission staff working paper entitled 'Inventory of public aid granted to different energy sources' (SEC(2002)1275). While the 6EAP is not referenced as a motivation for the report, it would seem to fulfil the commitment made in the Programme to produce an inventory. The Commission has not so far proposed any further action 'with a view to gradually phasing out' subsidies 'that counteract an efficient and sustainable use of energy', as called for in the 6EAP.

⁴ www.pointcarbon.com for this and the aforementioned first period price.

However, in spring 2007 the Commission launched a consultation process which should bring new ideas to the use of market based instruments (MBIs) in EU environmental policies, after publishing the long awaited green paper on MBIs (COM(2007)140). One of the issues raised by the paper is how to best reform environmentally harmful subsidies.

Encouraging renewables, cogeneration and low carbon fossil fuels for power

The 6EAP provides for action to encourage the use of renewable energy sources, ‘including use of incentives [...] with a view to meeting the indicative target of 12 % of total energy use by 2010’, as well as for the introduction of incentives to increase the use of combined heat and power (cogeneration) and measures to double its share to 18 % of electricity generation in the EU as a whole.

Renewables and low carbon fossil fuel (natural gas primarily) are encouraged in various ways: through the Directive on renewable energy sources for electricity production (2001/77/EC), the cogeneration Directive (2004/8/EC), the EU ETS, the Biomass Action Plan, and through direct research, development and demonstration (RD&D) support in the 6th and 7th Research Framework Programme (6FP and 7FP).

The recent ‘Energy Policy for Europe’ as proposed by the Commission in January 2007 (COM(2007)1) and supported in almost all aspects by the European Council in March envisions a radical review of clean energy targets. The Commission finds that the 12 % renewables target is being missed – 10 % by 2010 is more likely, but its reaction is to propose a tougher target – 20 % by 2020, but mandatory. This target includes renewables from heating and cooling, which had previously not been the subject of specific legislation.

Low carbon ‘sustainable’ fossil fuels also received attention in the climate and energy package. Among other measures the Commission floated the idea of a requirement for new fossil fuel plants to have carbon dioxide capture installed by 2020, which is an aggressive policy plan, particularly given the early state of deployment of the relevant technologies.

Measures from other sectors are complementary to energy-specific measures. Regulation (EC) No 795/2004 on the implementation of direct support schemes under the Common Agricultural Policy sets a support scheme for energy crops and provides for €45 per hectare in aid to producers of energy crops. In September 2006 the Commission proposed to widen the scope of this scheme to allow Member States to subsidise energy crops. In response to this proposal, EU agriculture ministers decided in December 2006 to extend the energy crops premium to the new Member States. Furthermore, the area covered by the aid was increased (from 1.5 million to 2 million hectares). The decision also allows Member States to grant national aid of up to 50 % of the costs of establishing permanent crops on areas for which an application for the aid has been made (5).

5

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1844&format=HTML&aged=0&language=EN&guiLanguage=en>

Energy efficiency and methane emissions from energy

Several efficiency-related pieces of legislation have been put in place in the past few years, though they were in general somewhat slow to get off the mark and the state of implementation is rather delayed.

The energy performance in buildings Directive (2002/91/EC) does not set out standards, but requires Member States to apply common methodologies and promulgate legislation that will yield more efficient buildings.

While for several years there have already been EU standards for performance of some energy using products (EuPs), a new framework 'ecodesign' Directive (2005/32/EC) pulls them together and extends them. It is meant to harmonize environmental requirements for EuPs, while ensuring their free circulation, but its impact will depend on the future adoption of implementing measures for specific product groups.

In March 2006 a Directive on energy efficiency and services was finally passed after languishing for almost three years since the Commission's initial proposal (COM(2003)739). It requires national energy efficiency action plans, with an indicative target of 9 % energy saved below the expected demand in the period 2008-2017.

The headline action on efficiency from the recent 'climate and energy package' is the proposal that Europe save 20 % of the energy below baseline projections in 2020. The details would still need to be worked out, including, importantly, the methodology for determining the baseline, which would significantly determine how much effort is really required.

The main EU level efficiency-related funding programme is Intelligent Energy Europe (IEE). The first IEE programme entered into force in July 2002, succeeding an earlier Energy Framework Programme. The second IEE programme started in early 2007 as part of a new, broader funding instrument called Competitiveness and Innovation Programme (CIP). Its objectives are threefold: fostering energy efficiency and the rational use of energy sources; promoting new and renewable energy sources and energy diversification; and promoting energy efficiency and new energy sources in transport.

No specific action was taken at EU level to 'prevent and reduce methane emissions from energy production and distribution', despite a mandate for such action in the 6EAP. Measures for the promotion of energy efficiency covering different sectors are addressed below in separate sections.

3.1.4 Reducing transport sector emissions

The 6EAP calls for action in a range of areas to address rising emissions from various modes of transport. Perhaps most salient to note here is that despite any actions taken, road transport emissions rose from 1990 to 2004 by 21 %, while almost all other sectors reduced their emissions. However, from 2004 to 2005, road transport emissions fell 0.8 %, mostly in Germany and in some measure due to the eco-tax intended to do just that, giving some measure of optimism. On the other hand, civil aviation continued its upward march, rising 7.2 % just from 2004 to 2005.

Emissions from international aviation and shipping

Aviation emissions continue to be a real cause of concern given their sharp rise and exclusion from any control schemes to date. A long-awaited proposal by the Commission to include aviation in the EU ETS was released on 20 December 2006. Intra-EU flights are to be included from 2011, with international flights added a year thereafter. Objections to the inclusion of international flights, rules on auctioning and accounting for non-CO₂ impacts were raised by the United States and aviation industry interests, leading to last minute changes in the proposal.

With respect to maritime emissions, various options for EU measures related to nitrogen oxides (NO_x) and sulphur oxides (SO_x) (e.g. the marine sulphur Directive 2005/33/EC) have been explored by the Commission, but nothing specific on GHG emissions has yet been undertaken apart from a technical report on a way to work with the IMO on a CO₂ index for shipping, released in January 2007. This is despite a specific commitment in the 6EAP to undertake 'specific actions' to curb GHG emissions from shipping 'if no such action is agreed within the International Maritime Organisation by 2003'. The IMO did not take action by 2003, or indeed not even through 2007. However, European patience with the IMO has finally worn thin and the Commission has signalled its intent to include shipping in the EU ETS, an idea supported by the European Parliament. However, no formal proposal to this end has yet been formulated.

Encouraging more efficient and cleaner transport

The 1995 Passenger Car CO₂ Strategy (COM(95)689) included three strands: the voluntary agreement with the car industry, labelling, and market-based instruments. The first two were already in place before the adoption of the 6EAP; their effectiveness compared to potentials is under question, as is the methodology for further reductions in future.

Voluntary agreements with car manufacturers were signed with European, Japanese and Korean manufacturers' associations in 1998-99, which have committed the members of the associations to reduce CO₂ emissions from new passenger cars to 140g/km by 2008-09. There are concerns regarding the progress made by industry under this voluntary approach. The Commission has repeatedly underlined its readiness to consider the introduction of legislation if it appears that the manufacturers are not on course to meet their targets, and proposals for such legislation may emerge by the end of 2007.

The fuel economy labelling scheme set up by Directive 1999/94/EC requires the display of a label on fuel consumption and CO₂ emissions on all new passenger cars, in a booklet and on posters in the showroom. The impact of these measures has not been visible, with labels of varying quality in different Member States.

A CO₂ monitoring mechanism for new cars was set up by Decision 1753/2000/EC and effectively requires Member States to obtain data on the CO₂ emissions of all new cars sold in their territories and report these to the Commission so that the car manufacturers' progress in reducing these emissions can be independently verified.

The incorporation of CO₂ emissions as an objective of transport tax reforms has seen little progress. A proposal from the Commission for a Directive on fiscal measures relating CO₂ emissions to purchase and circulation taxes (COM(2005)261) will not likely be approved by the Council. Fiscal measures adopted by several Member States have not had a significant impact on the EU average CO₂ emissions of new cars.

However, a proposed Directive on public procurement (COM(2005)634) may affect public sector demand for cleaner transport.

Despite a specific invitation to the Commission, in the 6EAP, to publish a 'Communication on quantified environmental objectives for a sustainable transport system', no Communication of this kind has been produced.

Reducing motor vehicle emissions, promoting alternative fuels and efficient vehicles

The Euro 5 proposal for new vehicle emission standards (COM(2005) 683) aims to reduce a range of emissions, but nitrous oxide (N₂O) is not affected, despite a specific call for action on this pollutant in the 6EAP. N₂O is a minor vehicle emission, and is not considered in the above-mentioned voluntary agreement with the car industry. The 6EAP further urges promotion of the development and use of alternative fuels and low-consumption vehicles. The voluntary agreement does this indirectly to some degree.

In addition there is Directive 2003/30/EC on the use of biofuels or other renewable fuels for transport, and research on hydrogen and fuel cells under the 6FP and 7FP. Biofuels are the subject of a specific target in the new 'climate and energy package' – 10 % of transport fuel by 2020. This target has come under criticism as being potentially damaging to the environment if adequate safeguards on the origin of fuels are not put in place; it may also put pressure on food production by competing for land, and in promoting liquid biofuels it may further a more inefficient use of biomass compared to heat and power production – all issues under heavy discussion in 2007.

Promoting full environmental cost pricing in transport

The 'Eurovignette' Directive (1999/62/EC) sets out the framework for Member States in terms of road tolls and charges. Some Member States had wanted this amended to allow them to take external environmental costs in account. The Commission's proposal for amendments tabled in 2003 (COM(2003) 448) did not include such provisions, but as a result of negotiations with Council and Parliament agreement was reached on a compromise package in March 2006 (Directive 2006/38/EC), which requires the Commission to undertake a modelling exercise and impact assessment of the internalisation of external costs within two years of the entry into force of the amending Directive.

Decoupling economic growth and demand for transport

The pre-6EAP Transport White Paper of 2001 (COM(2001) 370) claimed that the policies in it would achieve decoupling. However, transport emissions are up over 20 % across Europe since 1990 even as other sectors are seeing major declines. Policies such as the further development of Trans-European Networks of transport infrastructure would tend to see continuation of the worsening trend towards more vehicle kilometres driven.

3.1.5 Other sectors and measures

Reducing use of fluorinated greenhouse gases

Legislation on fluorinated gases (F-gases) was finally agreed in 2006 after a long and contentious process, thus fulfilling the mandate contained in the 6EAP. Regulation (EC) No 842/2006 will primarily address practices to improve containment of refrigerants in stationary cooling equipment and other users for fluorocarbons; Directive 2006/40/EC will effectively ban the main hydrofluorocarbon (HFC-134a) in car air conditioning.

The Regulation is much weaker than it could have been (amendments by the EP Environment Committee to reinforce it at the second reading were rejected in Plenary) and the benefits may be small. The Directive represents an important and globally influential shift, but the time scale for its implementation – until 2017 – is very long and extends way beyond the timeframe of the 6EAP.

Promoting eco-efficiency in industry

While the EU ETS is the primary means of affecting industrial GHG emissions, there are other relevant initiatives such as those under the IEE and CIP Programmes. In addition, the Commission agreed the Environmental Technologies Action Plan (ETAP) in January 2004 (COM(2004)38). ETAP is a non-binding framework for various initiatives in research, stakeholder consultation, and other policy actions all designed to boost innovation in environmental technologies.

The 6EAP further calls for specific action to encourage environmental agreements with industry on GHG emission reductions and to assist small and medium-size enterprises (SMEs) to innovate and improve their performance in this area. Since the agreement with the car manufacturers, which predates the 6EAP, no comparable EU-level environmental agreements on GHG mitigation were concluded with industry. A number of projects to promote energy efficiency in SMEs are being funded under IEE Programme and are also eligible for future funding under the CIP.

Agriculture

In the 6EAP, the institutions pledged to ‘take into account the need to reduce greenhouse gas emissions, alongside with other environmental considerations, in the common agricultural policy’ (CAP). During the second stage of ECCP I (2002-2003), a working group examined the potential contribution of the agricultural sector to GHG mitigation policies, including through improved use and management of agricultural soils as sinks. This group noted that a number of the CAP reforms resulting from Agenda 2000 were expected to lead to reduced GHG emissions and recommended a number of additional measures.

Waste management

Directive 1999/31/EC on the landfill of waste provides for a number of measures which, if fully implemented by the Member States, can contribute to a reduction of GHG emissions from landfills. Thus, for instance, Member States are required to draw up national strategies to reduce the amounts of biodegradable wastes going to landfills. A first review of these strategies, published by the Commission in 2005, concluded: ‘It looks like additional efforts will be necessary to achieve the targets.’ (COM(2005) 105) The Thematic Strategy on waste prevention and recycling, launched in December 2005, highlights that the Commission intends to focus on improving the implementation of existing waste legislation, including that of the Landfill Directive. It also outlines the need for further action on biowaste to encourage further diversion from landfill and ensure that the best treatment options are undertaken. One consideration in identifying options will be mitigating climate impacts. The Strategy claims that the ‘further diversion of municipal waste from landfill to composting, recycling and energy recovery could produce additional reductions in greenhouse gas emissions ranging from 40 to over 100 Mt CO₂ equivalent per year’.

Fiscal measures, including energy taxation

Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity sets out a framework of rules that Member States must adhere to in relation to setting duties for minimum rates for the various energy products covered. Member States must report to the Commission the levels of duties they have set.

Efforts to impose any specific carbon- or energy consumption-based taxation scheme to reduce GHG emissions failed to gain any ground for many years and foundered completely with passage of the EU ETS.

Research and development

FP6 ran from 2002 to 2006, with a budget of €17.5 billion, including €2.33 billion for sustainable development, global change and ecosystems. Its successor FP7 was adopted in 2006 and runs from 2007 to 2013. Initially designed to expend €73 billion over 7 years, corresponding with the length of the Financial Perspective, its budget was been chopped to €54 billion. Approximately 4 % of the budget is intended for research on non-nuclear energy, and another 4 % for environmental research. The energy priorities are hydrogen and fuel cells, renewable electricity generation, renewable fuel production, renewables for heating and cooling, CO₂ capture and storage technologies for zero emission power generation, clean coal technologies, smart energy networks, energy efficiency and savings and knowledge for energy policy making.

The climate and energy package published in January 2007 by the Commission also focuses on research. In its Communication 'An Energy Policy for Europe' (COM(2007)1) the Commission states research is crucial to lower the cost of clean energy and to put EU industry at the forefront of the rapidly growing low carbon technology sector. To meet these objectives, the Commission announced its intention to propose a strategic European Energy Technology Plan and to increase by at least 50 % its annual spending on energy research for the next seven years. The EU leaders welcomed the Commission's intention to table this plan at their Brussels summit in March 2007.

3.1.6 Adaptation

Until recently, adaptation has been relatively low profile in climate policy. Although there have been several relevant research projects with European funding, policy initiatives have been limited to minor references in other legislation. This changed on 29 June 2007 when the Commission released its Green Paper on 'Adapting to Climate Change in Europe – options for EU action' (COM(2007)354), followed by a conference in July 2007.

The Green Paper proposes action in four areas:

- Early coordinated adaptation action through EU sectoral and other policies and the available Community funds. Also, soft and low-cost adaptation strategies to improve resilience of ecosystems.
- Recognition of the external dimension, including coordinating with immediate neighbours.
- Research to fill knowledge gaps, and integrating results into policy and practice.
- Coordinated strategies, actions through ECCP – a European Steering Group on Adaptation to Climate Change.

3.1.7 Enlargement/ candidate countries:

Twelve Member States have acceded to the EU since the publication of the 6EAP. While they are all now subject to the *acquis*, there are still disparities in, among other things, capacity for engagement in climate policy. To that end, the Commission is supporting a project to increase capacity in post-2012 negotiations, with a series of meetings in new Member States in 2006 and 2007 (6).

Recent studies and emissions inventories show that there is a gap between the EU-15 and new Member States in the degree to which the latter are exploiting clean energy potential (at lower rates) (7), and the rate at which transport emissions are growing (much faster than in the EU-15). Both are causes for concern and demonstrate that renewed focused attention might be brought to the differences across old-new Member State divide.

3.1.8 Assessing the outcomes against objectives

Climate change is one of the areas of the 6EAP where the most progress has been made, at least in terms of policy development. The EU was instrumental in seeing the Kyoto Protocol enter into force, it is an important player in discussions on post-2012 systems, and it has put through the world's first obligatory emissions trading system for greenhouse gases alongside a host of other policies.

There has been less success in dealing with automobile transport emissions – not only are they rising, standing out from the falls seen in other sectors, but the policy approach to address them, the voluntary agreement with the car industry, has been called into question by the failure to reach its targets. An attempt to shift some of the effort to reducing emissions through use of biofuels, and setting a 10 % target by 2020, raises sustainability issues of its own.

Several gaps are addressed by proposals for additions to the EU ETS – aviation, maritime emissions – while the slow progress on energy efficiency may begin to be addressed by implementation of the suite of policies now in place, and from the announced initiative in the climate and energy package to reduce energy demand by 20 % by 2020.

Certain gaps in meeting the aims of the 6EAP look set to continue unaddressed, for various reasons – fiscal approaches to climate change at EU level have long been blocked by the limited appetite for EU-level taxation, and the increasing role of other market based instruments has been intended in part to fill the gap. Subsidies to polluting energy, meanwhile, while the subject of limited study, are not effectively the target of a campaign for elimination, notwithstanding repeated policy commitments. Such a campaign remains unlikely given the variety of non-climate considerations (worthwhile or not) which generally go into justifying them.

The main question now is whether the efforts made will translate to sufficient reductions in emissions to call the EU's climate policy a success – to meet 2008-2012 targets, inventories of annual emissions will need to show marked improvement from the trend of recent years.

⁶ See www.ecologic-events.de/climate2012

⁷ See http://ec.europa.eu/environment/enveco/others/pdf/res2020_executive_summary.pdf

At the moment however, the focus is already shifting to post-2012 policy, in the form of the climate and energy package, and its rather aggressive set of proposals. While there are some gaps in the implementation of the climate aspects of the 6EAP, that there has been enough confidence to propose a more aggressive follow-on to the current policy objectives can in some measure be taken as a sign of success of the efforts to date.

3.2 Nature and biodiversity

The following main objectives have been identified in the 6EAP:

- halting biodiversity decline with the aim to reach this objective by 2010, including prevention and mitigation of impacts of invasive alien species and genotypes;
- protection and appropriate restoration of nature and biodiversity from damaging pollution;
- conservation, appropriate restoration and sustainable use of marine environment, coasts and wetlands;
- conservation and appropriate restoration of areas of significant landscape values including cultivated as well as sensitive areas;
- conservation of species and habitats, with special concern to preventing habitat fragmentation;
- promotion of a sustainable use of the soil, with particular attention to preventing erosion, deterioration, contamination and desertification.

3.2.1 Biodiversity

Biodiversity strategy

On biodiversity the 6EAP calls in the first place for ensuring the implementation and promoting the monitoring and assessment of the EU's biodiversity strategy and the relevant action plans, including through a programme for gathering data and information, developing the appropriate indicators, and promoting the use of best available techniques and best environmental practices.

The Biodiversity Communication (COM(2006)216) and its impact assessment (SEC(2006)621) provide an overview of the actions taken. Efforts to implement the strategy and relevant action plans have been made with a somewhat varying degree of success (individual action plans will be addressed in the relevant sections below). Apart from the reporting according to the Bird and Habitats Directives' requirements, the development of indicators for biodiversity at the European level has been particularly addressed by the EEA ⁽⁸⁾. A proposal for 26 indicators has been published ⁽⁹⁾. The study will provide a basis for further development and may assist in identifying best environmental practices.

⁸ <http://biodiversity-chm.eea.europa.eu/information/indicator/>

⁹ Halting the loss of biodiversity by 2010: proposal for a first set of indicators to monitor progress in Europe, EEA Technical report No 11/2007

The development of best environmental practices and best available techniques for biodiversity protection will require systematic integration of biodiversity concerns in other policy areas. At a high policy level integration has succeeded in so far as biodiversity or related concepts are mentioned. At a more operational level the success rate is more uneven. For an overview of the situation in the different environmental policy areas, see Table 1. Thus it appears that a major future challenge lies in providing incentives and support for developing best environmental practices supporting the biodiversity objectives.

Research, sustainable use, production and investments in relation to biodiversity

The 6EAP further calls for the promotion of research on biodiversity, genetic resources, ecosystems and interactions with human activities and the development of measures to enhance sustainable use, sustainable production and sustainable investments in relation to biodiversity.

The EU framework programmes for research (FP6 and FP7) have directed substantial funds to biodiversity research. The clearing house mechanism maintained by EEA ⁽¹⁰⁾ provides reasonably easy access to research results. As noted above a main challenge remains in finding ways to make biodiversity conservation, including research findings, operational within many different human activities, i.e. policy areas. Some processes exist for developing new directions for biodiversity research, in particular the European Platform for Biodiversity Research (EPBR) ⁽¹¹⁾. The focus of the platform is, however, on biodiversity experts, not on the dialogue between biodiversity experts and experts from other policy areas. A broadening of the dialogue to include other areas of expertise could provide ideas for new research areas that would support the inclusion of biodiversity issues and research results in policies and activities more broadly. Such a broadening would be in line with the opinion of the European Economic and Social Committee (EESC) ⁽¹²⁾ which has stressed the need to involve civil society in monitoring the implementation of the biodiversity action plan.

The Lisbon Strategy calls for a development of the sustainable use of natural resources, and attempts to develop specific measures that enhance sustainable use of biodiversity have been made within the Life programme and in regional development activities. The efforts to specifically develop innovations for production that is based on the conservation of biodiversity are not yet prominent. However, business and biodiversity is one of Portugal's main priorities during its EU Presidency culminating in a High Level Conference on the European Initiative on Business & Biodiversity in November 2007. The outcomes of the conference are to provide guidance to a new longer-term, strategic EU initiative on the matter.

There is thus extensive research on the impacts on biodiversity, but much less on solutions that would support the conservation of biodiversity while simultaneously improving economic activities. This is likely to be one of the obstacles to more effective policy integration.

¹⁰ <http://biodiversity-chm.eea.europa.eu/>

¹¹ <http://www.epbrs.org/>

¹² Opinion of the European Economic and Social Committee on the Communication from the Commission on Halting the loss of biodiversity by 2010 - and beyond - Sustaining ecosystem services for human well-being COM(2006) 216 final. NAT/334 Halting the loss of biodiversity Brussels, 15 February 2007.

Threatened species

Another aim of the 6EAP in relation to biodiversity is to encourage coherent assessment, further research and cooperation on threatened species.

The reporting according to the Birds and Habitats Directives provides a basis for future work (e.g. upcoming national reports on the conservation status of habitats and species for the period of 2000-2006, according to Article 17 of the Habitats Directive). At the moment, however, the most interesting results on assessing the effectiveness of the nature Directives seem to arise from mainly independent research initiatives. An example of the work that coherent assessment and monitoring can support is the analysis of benefits of the EU wide conservation instruments (13). Such studies can also provide material for identifying ways to increase the effectiveness of policy measures and motivate EU wide data collection with open access to data on biodiversity.

Prevention and control of invasive alien species

The 6EAP aims to develop measures to prevent and control invasive alien species including alien genotypes. The 2002 revision of Directive 2000/29/EC on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community provided a legal basis to regulate at the EU level the intentional introduction of such invasive alien species (IAS) as weeds and invasive alien plants. The same is true for animal diseases, pests of plants, and GMOs. For organisms outside these categories, there are no Community-backed controls on import and export (14). Currently, the Commission is developing an EU strategy on IAS and examining the possible policy and legislative measures to be taken in the future.

Natura 2000 network and protection of species outside the network

The 6EAP calls for establishing the Natura 2000 network and implementing the necessary technical and financial instruments and measures required for its full implementation and for the protection, outside the Natura 2000 areas, of species protected under the Habitats and Birds Directives.

The Biodiversity Communication recognises the absence of the Natura 2000 network within the marine environment, the damaging impacts of developmental activities on Natura 2000 sites, and the limited funds available for effective site management and supporting actions as key remaining problems. Limited co-financing of Natura 2000 has been provided through the LIFE Nature fund.

Between 1992 and 2007 altogether 389 LIFE projects that make reference to the habitats Directive (92/43/EEC) and which include the key word 'Natura' have been financed in the EU. As the total number of LIFE Nature projects is 970 this shows that the Natura 2000 network has clearly been one of the key areas for the programme. The LIFE+ programme continues this by identifying the birds and habitats directives as one of the priority areas for the instrument. The other is the implementation of the Biodiversity Communication (15).

¹³ Donald, PF, Sanderson, FJ, Burfield, IJ, Bierman, SM, Gregory, RD & Waliczky, Z (2007) International conservation policy delivers benefits for birds in Europe. *Science*, 317, 810-813)

¹⁴ Secretariat of the International Plant Protection Convention <http://www.fao.org/docrep/008/y5968e/y5968e08.htm>; Miller, C., Kettunen, M. & Shine, C. 2006. Scope options for EU action on invasive alien species (IAS) Final report for the Commission. Institute for European Environmental Policy (IEEP), Brussels, Belgium. 109 pp + Annexes.)

¹⁵ http://ec.europa.eu/environment/life/funding/lifeplus/components/component_nat.htm

One can conclude that efforts have been made to implement the Natura 2000 network and that challenges have been identified. New solutions for co-financing through rural development and the Structural and Cohesion funds were proposed by the Commission in 2004 (COM(2004)431) and consequently funding possibilities for Natura 2000 have now been integrated into the Regulations for relevant EU funding instruments for the period of 2007-2013 (¹⁶). However, a number of stakeholders, including European Economic and Social Committee (EESC) (¹⁷), have also suggested possibilities to more clearly earmark funding for the Natura Network should be explored. Appropriate funding of the management of established areas is clearly of major importance for achieving societal legitimacy of one important part of the biodiversity policy. Monitoring of progress, but also analyses of practices and difficulties, are clearly warranted.

Extension of Natura 2000 network to Candidate Countries

The 6EAP aims to promote the extension of the Natura 2000 network to the Candidate Countries. At a general level the policy concerning current Candidate Countries is clearly expressed (¹⁸). The Council of Europe's Emerald Network (¹⁹) can also contribute to this objective. However, not a single one of the Multi-annual Indicative Planning Documents for 2007-2009 contains any references to the Natura 2000 network and there are few explicit references to the conservation of biodiversity. This shows clearly that one of the main challenges lies on the operational level, not the general policy level.

Assessing the outcomes against objectives - overall conclusion

Overall one can conclude that the Commission has taken several initiatives in the area of biodiversity policy since the adoption of the 6EAP. While progress has been made in many areas the operational integration into a wider set of policy areas has lagged. There is a relative lack of R&D activities that would support integration at an operational level.

¹⁶ Regulations on European Agricultural Fund for Rural Development (EAFRD), European Fisheries Fund (EFF), Structural and Cohesion Funds and the 7th Framework Programme for Research and Development (FP7).

¹⁷ Opinion of the European Economic and Social Committee on the Communication from the Commission to the Council and the European Parliament: Financing Natura 2000 (COM(2004) 431 final) (2005/C 221/19).

¹⁸ Commission Decision C(2007/2205 of 29/05/2007 establishing a Multi-Beneficiary Multi-annual Indicative Planning Document (MIPD) 2007-2009.

¹⁹http://www.coe.int/t/e/cultural_co-operation/environment/nature_and_biological_diversity/ecological_networks/The_Emerald_Network/

Table 1 : Overview of integration of biodiversity conservation into other policy areas

Policy area (as listed under EC Environment)	Examples of references to biodiversity conservation.
Air	General reference in the thematic strategy (COM(2005)446), indirect reference to ‘Vegetation protection’ Directive 2001/81/EC on national emission ceilings for certain atmospheric pollutants, otherwise little attention to biodiversity. For example no explicit reference to biodiversity in the proposal for a Directive on ambient air quality and cleaner air for Europe (COM(2005)447), nor in the Commission Decision of 29 April 2004 laying down a questionnaire to be used for annual reporting on ambient air quality assessment under Council Directives 96/62/EC and 1999/30/EC and under Directives 2000/69/EC and 2002/3/EC of the European Parliament and of the Council
Biotechnology	Reference to biodiversity is made in the biotechnology policy document: ‘The EU is party to the Cartagena Protocol on Biosafety, which entered into force on 11 September 2003. This Protocol to UNEP’s Convention on Biological Diversity aims at establishing common rules for the transboundary movement of GMOs in order to ensure, on a global scale, the protection of biodiversity and of human health’ (20) but there is, for example no explicit reference to biodiversity in the Second Report on the experience of Member States with GMOs placed on the market under Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms. (COM(2007)81)
Chemicals	The Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC or the available guidance from the European Chemicals agency (ECHA), for example Guidance on Dossier and Substance Evaluation (21) do not make any explicit references to safeguarding biodiversity. The concerns are restricted to toxicity effects on organisms and do not raise issues related to a broader biodiversity level.

²⁰ http://ec.europa.eu/environment/biotechnology/pdf/eu_policy_biotechnology.pdf

²¹ http://reach.jrc.it/docs/guidance_document/evaluation_en.pdf

Policy area (as listed under EC Environment)	Examples of references to biodiversity conservation.
Civil Protection and Environmental Accidents	The Seveso II Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances (Consolidated version of the Seveso II Directive including the amendment 2003/105/EC) makes indirect reference to biodiversity with the notion of ‘areas of particular natural interest or sensitivity’, but otherwise civil protection contains little explicit references to biodiversity.
Climate Change	References to biodiversity are made in, for example, the GREEN PAPER Adapting to climate change in Europe – options for EU action (COM(2007)354) of 29 June 2007. However, for example the Communication on the share of renewable energy in the EU (COM(2004)366) makes no reference at all on potential impacts on biodiversity.
Environmental Economics	‘The OECD and the EEA have, in co-operation with the Commission, developed a database on the use of market-based instruments for environmental policy and natural resource management’ It includes indirect references to biodiversity through resource use. Database on economic instruments in environmental policy (22).
Enlargement and Neighbouring Countries	At a general level the policy is clearly expressed: ‘Environmental considerations will be duly reflected in all IPA financed activities in addition to specific actions in particular as concerns Environmental Impact Assessments.’ (COM(2007)2205, establishing a Multi-Beneficiary Multi-annual Indicative Planning Document (MIPD) 2007-2009). The EU is also committed to the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) of 2003. However, the implementation of these commitments vary significantly. There is an explicit reference to biodiversity only in the MIPD 2007-2009 for the former Yugoslav Republic of Macedonia (COM(2007)1853). In the MIPDs for Albania, Croatia, Kosovo, Montenegro, Serbia and Turkey there are various references to issues that are related to biodiversity, although the concept is not used explicitly. The MIPD for Bosnia and Herzegovina contains references to developing the agricultural sector on a competitiveness agenda, without any reference to biodiversity concerns. These implementation problems are also reflected in a recent assessment of the PEBLDS: ‘the support for the action plans and for PEBLDS and its work in general has been insufficient and showing downward trends, especially in recent years’ 23

22 <http://www2.oecd.org/ecoinst/queries/index.htm>

23 Future of the PEBLDS, 11th Meeting 2007, STRACO (2007) 4), 1.10.2007

Policy area (as listed under EC Environment)	Examples of references to biodiversity conservation.
Health	The Communication on A European Environment and Health Strategy. Brussels (COM(2003)338) refers to the broad definition of health by WHO: ‘effects (often indirect) on health and well-being of the broad physical, psychological, social and aesthetic environment, which includes housing, urban development, land use and transport.’ However, in practice almost no practical implications of this are noted and the European Environment & Health Action Plan 2004-2010 (COM(2004) 416) Volume I & II generally adopts a narrow health orientation.
Industry and Technology	Biodiversity is referred to in several of the environmentally oriented legal documents, for example Regulation (EC) No 1980/2000 on a revised Community eco-label award scheme refers to biodiversity as one element in a product LCA and the Thematic Strategy on the sustainable use of natural resources (COM(2005)670) stresses also links to biodiversity. Indirect references to biodiversity are also found in the Report of the Environmental Technologies Action Plan (2005-2006) (COM(2007)162) the Evaluation of Environmental Product Declaration Schemes ⁽²⁴⁾ and guidance for the implementation of Regulation (EC) No 761/2001 of the European Parliament and of the Council allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) concerning the selection and use of environmental performance indicators. The IPPC Directive 96/61/EC provides a general integrated frame that can include biodiversity. In the handbook on environmental public procurement ⁽²⁵⁾ biodiversity is referred to in the case of forestry products.
International Issues	The Biodiversity Action plan for Economic and Development co-operation (COM(2001) 162) aims specifically at supporting biodiversity in third countries, with an emphasis on the developing countries. The Green Diplomacy Network has paid attention also to Biodiversity through an awareness raising brochure ⁽²⁶⁾ .
Land Use	Frequent references to biodiversity, for example in the Thematic Strategy on the Urban Environment (COM(2005) 718).

²⁴ <http://ec.europa.eu/environment/ipp/epds.htm>

²⁵ http://ec.europa.eu/environment/gpp/pdf/buying_green_handbook_en.pdf

²⁶ http://ec.europa.eu/external_relations/env/docs/gdn_brochure_biodiversity.pdf

Policy area (as listed under EC Environment)	Examples of references to biodiversity conservation.
Nature and Biodiversity	Treated specifically in the section on Biodiversity policy above.
Noise	Directive 2002/49/EC relating to the assessment and management of environmental noise does not recognise noise as an ecological problem, but focuses exclusively on health aspects. The Study on transport-related impacts and instruments for sensitive areas ⁽²⁷⁾ and the report on Defining an Environmentally Sustainable Transport System ⁽²⁸⁾ do, however, also recognise biodiversity links.
Soil	The soil strategy (Communication (COM(2006) 231) makes explicit references to biodiversity, and also the proposed Framework Directive (COM(2006) 232) makes frequent references to soil biodiversity and its conservation.
Sustainable Development	The Renewed EU Sustainable Development Strategy adopted in June 2006 (10117/06) makes adequate references to the biodiversity objectives.
Waste	Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste (COM(2005) 666) makes only indirect references to biodiversity, with a single mentioning of natural resources. This is also the case with the proposal for a new Directive on waste (COM(2005) 667)
Water	Aquatic biodiversity is referred to in the Water Framework Directive 2000/60/EC, and a recognition of biodiversity is also reflected in the Communication Towards sustainable water management in the European Union - First stage in the implementation of the Water Framework Directive 2000/60/EC (COM(2007) 128)

²⁷ <http://ec.europa.eu/environment/air/sat.htm>

²⁸ <http://ec.europa.eu/environment/trans/index.htm>

3.2.2 Prevention of accidents and natural disasters

The 6EAP aims to enhance Community coordination of actions by Member States in relation to accidents and natural disasters. The specific actions mentioned in this context include, for example, setting up a network for exchange of prevention practices and tools, and developing further measures to help prevent major accident hazards (in particular those arising from pipelines, mining, marine transport of hazardous substances as well as measures on mining waste).

Forest fire prevention

In 2003 a Community scheme for a harmonised and long-term monitoring of European forest ecosystems for the period of 2002-2006 was adopted (²⁹). Since the expiry of the Forest Focus Regulation in 2006, the monitoring needs are to be carried out and financed in the context of LIFE+ funding for 2007-2013 (Regulation (EC) No 614/2007). Forest fire prevention formed one of the main focal points of the earlier system and in the context of the Forest Focus Regulation a European Forest Fire Information System (EFFIS) was established to provide information for the protection of forests against fire in Europe. In addition, the 2006 Forest Action Plan (COM(2006)302) provides further policy support for EU level actions on preventing forest fires.

Flood management

As regards flood management, in 2006 the Commission put forward a proposal for a Directive on the assessment and management of floods (COM(2006)15). Its aim is to reduce and manage the risks that floods pose to human health, the environment (including biodiversity), infrastructure and property. The proposed Directive has already been agreed upon by Council and Parliament and its formal adoption and publication are expected later in 2007.

Water scarcity and droughts

In recognition of the acuteness of the water scarcity and drought challenges in Europe, the Commission in 2006 and early 2007 undertook an in-depth assessment of the situation at EU level. As a result, a Communication on addressing the challenge of water scarcity and droughts in the EU was published in 2007 (COM(2007)414). The Communication presents an initial set of policy options at European, national and regional levels to address and mitigate the challenge posed by water scarcity and drought within the EU. Issues related to water scarcity and drought also formed the main topic of discussion at the informal Council of Environment Ministers in Portugal in September 2007. Ministers agreed that the development of a concerted follow-up programme to implement the measures identified in the Communication was now of crucial importance (³⁰).

²⁹ Regulation (EC) No 2152/2003 on monitoring of forests and environmental interactions, also called the Forest Focus Regulation.

³⁰ Presidency conclusions: <http://www.eu2007.pt/NR/rdonlyres/077EFFA6-280E-44FF-9DB4-E64727C07333/0/20070901AmbienteConclusões.pdf>

Hazardous substances

Concerning hazardous substances, a number of Community initiatives, including the Water Framework Directive (Directive 2000/60/EC) and the Decision setting up a Community framework for cooperation in the field of accidental or deliberate marine pollution (Decision 2850/2000/EC) (both adopted prior to 6EAP), aim to prevent the occurrence of harmful matter in water bodies. In the context of the Water Framework Directive, the proposal for a 'daughter' Directive on environmental quality standards in the field of water policy (COM(2006)397) also takes into consideration the negative effects of chemical pollution to aquatic ecosystems, e.g. disturbance to and loss of habitats and biodiversity.

In 2002 the European Maritime Safety Agency (EMSA) was established with a view to providing technical and scientific assistance to the Commission and Member States in the development and implementation of EU legislation, e.g. legislation on maritime safety and pollution by ships. In addition, a partial harmonisation of penal sanctions for marine pollution in EU was achieved in 2005 with the adoption of Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements. In a broader context, the 2005 Marine Strategy Directive proposal (COM(2005)505) is intended to establish a policy framework for maintaining the quality of marine ecosystems, including preventing and controlling the occurrence of hazardous substances in marine areas.

Mining waste

On the issue of mining waste, the 'Seveso II' Directive on the major-accident hazards of certain industrial activities (Directive 96/82/EC) was amended in 2003 to cover risks arising from storage and processing activities in mining (Directive 2003/105/EC). Furthermore, a Directive on the management of waste from extractive industries was adopted in 2006 (Directive 2006/21/EC). The aim of this Directive is to provide for measures, procedures and guidance to prevent or reduce the adverse effects of the management of waste from the extractive industries on the environment (e.g. biodiversity) and human health.

Funding

As regards financial support, Community co-funding instruments for the period 2007-2013 provide several opportunities for preventing and mitigating environmental risks in the Member States. For example, a number of the EU funding instruments, e.g. the Structural and Cohesion Funds, the European Agricultural Fund for Rural Development (EAFRD) and LIFE+, explicitly address issues related to the protection against natural and technological risks (e.g. forest fire, floods, drought and maritime security).

Assessing the outcomes against objectives - overall conclusion

It can be concluded that Commission has been relatively active in carrying out the 6EAP objectives on the prevention of accidents and natural disasters, including by undertaking a number of legislative actions. In addition, the initiatives carried out in 2002-2007 also include a number of focal areas that are not mentioned in the programme. This reflects the recent changes in policy priorities due to increased risks related to flooding, water scarcity and forest fires. Given the current trends, the importance of Community level legislation and initiatives in preventing and mitigating natural disasters will only increase in the future.

For a majority of the instruments, it is still too early to estimate their effectiveness, e.g. their contribution to the conservation of biodiversity and ecosystems. In addition, the concrete actions on protection against natural risks will to a large extent depend on how Member States will address these issues in their national funding priorities, when establishing national programmes for the use of Community funds.

In this context, it is also important to note that the adopted Community instruments mainly deal with threats to the environment in general and rarely specifically address biodiversity related concerns. Taking biodiversity aspects into consideration would, however, be important as the mitigation of natural hazards may also have negative effects on biodiversity. For example, moderate natural disturbances (e.g. flooding and fire) form an integral part of the functioning of several ecosystems (e.g. the existence of several species). In addition, appropriately planned natural disaster recovery measures may also provide several opportunities for biodiversity restoration.

3.2.3 *Thematic Strategy on Soil Protection*

Soil issues are highlighted three times within the 6EAP. Firstly, a recital states that ‘soil is a finite resource that is under environmental pressure’. Actions in relation to soil protection and its sustainable use are set out under Article 6 of the 6EAP Decision, devoted to ‘objectives and priority areas for action on nature and biodiversity’. Article 6 provides that an objective of the 6EAP is the ‘promotion of a sustainable use of the soil, with particular attention to preventing erosion, deterioration, contamination and desertification’. It specifically calls for the development of ‘a thematic strategy on soil protection, addressing the prevention of, *inter alia*, pollution, erosion, desertification, land degradation, land-take and hydrogeological risks taking into account regional diversity, including specificities of mountain and arid areas.’

The Thematic Strategy on soil protection (COM(2006)231), along with the proposal for a framework Directive on soil protection (COM(2006)232) that will implement many of the actions set out in the Strategy, were proposed by the Commission in September 2006. Soil is included within the biodiversity objectives of the 6EAP, in light of the potential benefits to soil biodiversity, and biota more broadly, of its protection and conservation. Ironically, however, one of the areas in which the resulting Thematic Strategy has been criticised is its lack of coverage of biodiversity issues. Rather than focusing on biodiversity the soil Thematic Strategy actually more directly addresses concerns regarding environment and health and sustainable use of natural resources. The Strategy’s aims largely relate to mitigating soil degradation, i.e. erosion, salinisation, soil sealing, soil contamination etc. Biodiversity is primarily mentioned in the Strategy in terms of the negative impacts of soil degradation, and resultant impacts on the wider environment. Neither the Strategy nor the supporting framework Directive directly addresses the issue of soil biodiversity. In the Strategy it is stated that ‘the Directive does not cover soil biodiversity directly. Biodiversity will generally benefit from the action proposed on other threats’.

The Thematic Strategy on Soil, like others before it, contains only 12 pages of text primarily dedicated to explaining the content of the proposed soil framework Directive but it contains limited details in terms of defining the problem, the existing policy framework and future action. In terms of action under the Strategy, the proposal for a framework Directive is by far the most concrete. It should be noted that the European Parliament and Council look set to substantially amend the proposed Directive during their first readings scheduled for later this year.

There are, however, other actions listed under the next steps section of the Strategy that have the potential to significantly impact on practice, if appropriately implemented. Actions that build on existing systems are *inter alia*: reviewing the Sewage Sludge Directive (86/278/EC); reviewing the IPPC Directive; monitoring whether the need to protect soil is adequately taken into account in developing the Rural Development Plans for 2007-2013; checking whether the minimum requirements for good agricultural and environmental conditions under the CAP contribute to soil protection; and, assessing possible synergies between measures aiming to protect soil and actions being taken under river basin management plans.

In addition, the Commission also intends to take forward five new initiatives, among others developing calls for research projects and developing best practices to mitigate the negative effects of soil sealing.

3.2.4 Sustainable management of extractive industries

The 6EAP strives to promote sustainable management of extractive industries with a view to reducing their environmental impact. Since 2002, there has been an improvement in addressing environmental threats related to the management of mining waste (see ‘prevention of accidents and natural disasters’ above). Also, the 2004 Environmental Liability Directive (Directive 2004/35/EC) creates a general disincentive to the destruction of key nature sites and provides for compensatory measures in the case of damage. In addition, both the 2006 Sustainable Development Strategy (Council document 10117/06) and the Thematic Strategy on the sustainable use of natural resources (COM(2005)670) constitute a general framework also for the sustainable extraction of minerals. They do not, however, provide for any specific measures to this end.

It can be concluded that EU efforts to promote the sustainable management of extractive industries in 2002-2007 have been somewhat limited, with the main achievement being the improved management of mining waste. The implementation of the Directives on the assessment of the effects of certain public and private projects (Directive 97/11/EC, the EIA Directive) and certain plans and programmes (Directive 2001/42/EC, the SEA Directive) provides a legal basis for decision-makers and other stakeholders to assess the possible negative effects of extractive industries on the environment. However, the implementation of these Directives has left a lot to hope for. According to the impact assessment of the 2006 Commission Communication on Biodiversity (SEC(2006) 621) the number of complaints on the infringement of the EIA Directive indicate inadequacies in its implementation. It has turned out to be difficult to ensure that biodiversity related aspects such as ecosystem services receive sufficient attention in developing extractive industries. There is thus a clear need to develop mechanisms that improve the environmental management of extractive industries.

3.2.5 Integration of landscape values into other policies

Promoting the integration of conservation and restoration of landscape values into other policies (e.g. tourism) is one of the 6EAP goals. In practice, this goal can also be seen as support to sustainable land-use planning within the EU.

Regional and Rural Development policies

Some progress has been made during 2002-2007 in integrating biodiversity aspects into the EU Regional and Rural Development policies (see also section on agricultural policy below). In particular, the current Community instruments providing financial support to these policies, i.e. the Structural and Cohesion Funds, EAFRD and also EFF, now offer possibilities for supporting the conservation and maintenance of landscape values (e.g. natural and cultural heritage values) in the context of regional and rural development. In addition, the Thematic Strategy on the Urban Environment (COM(2005)718), launched in 2006, also aims to promote sustainable land-use planning with a view to reducing the loss of natural habitats and biodiversity due to urban development.

Tourism policy

As regards tourism, a renewed EU tourism policy was published in 2006 (COM(2006)134) and recognises the potential benefits biodiversity and natural ecosystems can offer to the tourism sector. The possible threats of tourism to biodiversity are also acknowledged. To address these issues and to promote tourism sustainability in the EU the Commission and the tourism stakeholders are actively working on the elaboration of a European Agenda 21 for Tourism. The Commission aims to present a proposal for such an Agenda 21 by 2007. In addition, support to sustainable tourism also forms one of the key areas supported by a number of EU funds for 2007-2013, e.g. the Structural and Cohesion Funds, EAFRD and EFF.

European Landscape Convention

At the wider European level, the European Landscape Convention that was adopted in 2000 came into force in 2004. The Convention, initiated by the Council of Europe, aims to improve the protection, management and planning of European landscapes, including raising the awareness of their value. The EU is not a signatory of the Convention. However, the majority of its Member States are. Consequently, the Convention also has relevance in the context of the EU. However, as the Council of Europe has no enforcement procedures comparable to those of the EU the implementation of the Landscape Convention strongly depends on the goodwill of individual signatories.

Assessing outcomes against objectives

In general, it can be concluded that EU level achievements in promoting the integration of landscape values to other policy sectors have been relatively meagre. A number of new policy instruments have been adopted, however as they do not have any legal weight their concrete effects are likely to be limited. In addition, there have been no particular efforts in improving the integration of landscape values into a number of sectors with high impacts on landscapes, such as transport. For example, a Commission study on transport through sensitive mountain areas was carried out in 2004, however this study did not pay any particular attention to areas with high and/or sensitive biodiversity (31).

Increasing the integration of landscape values into Community funding schemes for regional and rural development can be considered as the most significant accomplishment during 2002-2007. However, any concrete actions will to a large extent depend on how the Member States will address these issues in their national funding priorities.

3.2.6 Integration of biodiversity into agricultural policies

The current implementation of the CAP includes overall objectives that are consistent with the conservation of biodiversity. Thus Regulation (EC) No 1782/2003 establishes certain general conditions related to biodiversity, without explicitly referring to the concept. According to Article 5, 'Member States shall define, at national or regional level, minimum requirements for good agricultural and environmental condition'. The scheme, according to which this should be carried out, is rather limited in scope with respect to biodiversity. A number of necessary conditions are listed such as the protection of soil cover, but the listing does not ensure biodiversity protection although the reference to 'retention of landscape features' has some biodiversity connotations.

³¹ Transport-related impacts and instruments for sensitive areas - study on behalf of the Commission <http://ec.europa.eu/environment/air/sat.htm>.

In addition the Regulation allows additional payments to be ‘granted for specific types of farming which are important for the protection or enhancement of the environment or for improving the quality and marketing of agricultural products under conditions to be defined by the Commission. Commission Regulation (EC) No 796/2004 refers further to ‘cross-compliance’⁽³²⁾ and in particular to the maintenance of pastures.

In Article 22 of Regulation (EC) No 1783/2003 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) the conservation of high nature-value farmed environments which are under threat and the upkeep of the landscape and historical features on agricultural land are specifically mentioned.

There are also a number of specific legal instruments that refer to the conservation of biodiversity in agriculture, for example Regulation (EC) No 834/2007 on organic production and labelling of organic products.

The conclusion on CAP is that the basic legal texts that would support biodiversity protection in agricultural policies do exist, although they are relatively weakly expressed. In practice the decline of biodiversity in agricultural landscapes has continued, suggesting that the measures in the Member States have been insufficient and that the other objectives than biodiversity conservation have been stronger in the implementation of the CAP. This concern has been raised in the impact assessment of the Biodiversity Communication (SEC(2006)621). However, the focus is on cross-compliance and not, for example, on an in depth analysis of how one could create better incentives for biodiversity conservation with the CAP framework. There is adequate data and research to document the problems and to monitor change, but relatively little knowledge of different options for solving the problems.

3.2.7 Marine environment

The 6EAP aims to promote sustainable use of the seas and conservation of marine ecosystems through a range of measures, including actions currently within the scope of the Common Fisheries Policy (CFP), the promotion of integrated management of coastal zones, the protection of marine areas and a Thematic Strategy for the protection and conservation of the marine environment.

Environmental integration into the CFP

In May 2002, as part of the CFP reform process, the Commission adopted a Community Action Plan to integrate environmental protection requirements into the CFP (COM(2002)186), setting out 20 targets with timetables. The new ‘basic’ Regulation of the CFP which was adopted in December 2002 (Regulation (EC) No 2371/2002) includes a number of important environmental provisions, i.e. to minimise the impact of fishing on marine ecosystems, the progressive implementation of the ecosystem based approach, implementation of the precautionary approach and the taking of measures to protect non-target species. In addition, it was also agreed to phase out the use of subsidies for vessel construction and modernisation, previously available under the CFP. Provisions for long term stock recovery and management plans were put in place, and powers granted to the Commission and Member States to take short-term emergency measures.

³² “Cross-compliance” is specified as the principle that farmers should observe a minimum level of environmental standards as a condition for the full granting of the direct payments. Another basic principle embodied in the Community strategy for the integration of environmental considerations into the CAP is that, wherever the society desires that farmers deliver an environmental service beyond that baseline level, this service should be purchased through agri-environmental measures. http://ec.europa.eu/agriculture/envir/index_en.htm#crosscom [10.10.2007]

To date only three recovery plans have been formulated although emergency measures have been adopted for species such as anchovy and further closed areas for rebuilding sand eel stocks have been adopted.

The new CFP represents a marked improvement in the policy framework for fisheries management. Management actions can be taken more quickly and more specifically for environmental purposes. The phasing out of subsidies is also a significant improvement. There are some examples of the new provisions being implemented since 2002, including the closing of areas to bottom trawling and the adoption of recovery plans. However, the fleet reduction elements of the reform package are weak, not requiring Member States to reduce fleet capacity over time.

The 6EAP objective of ‘promoting greater integration of environmental considerations in the CFP’ could in the broad sense be considered to have been met. However, if one is to consider the purpose of this commitment a number of shortcomings in reaching the 6EAP objectives become apparent. As the impact assessment of the 2006 Commission Communication on Biodiversity (SEC(2006) 621) indicates, there are serious shortfalls in implementing the CFP provisions at national level. The problems include, for example, poor reporting of catch quantities and fishing effort and increasing serious infringements related to unauthorised fishing.

In practice there has not been the significant shift in the approach to managing European fisheries that is required to meet the 6EAP target of halting the loss of biodiversity by 2010. In this context, the Commission’s approach seems also to have softened with a move towards managing fishing capacity and away from fishing effort, a key driver of over-fishing. Furthermore, there is no sense of a change in the culture within the Council, with the annual setting of total allowable catch (TAC) levels still being the subject of intense political horse trading, with the result that catch levels for key stocks continue to be set much higher than scientists advise. The recent Commission actions, including the decision to close the fishery for bluefin tuna in the Eastern Atlantic and the Mediterranean for 2007 and several infringement procedures against the Member States engaged in tuna fishing in EU waters, however give an indication of a tightening implementation of Community controls ⁽³³⁾.

Marine Thematic Strategy and Marine Strategy Directive

The Commission proposed a Marine Strategy Directive (MSD) (COM(2005)505) in 2005, requiring Member States to develop marine strategies aimed at securing ‘good environmental status’ for their marine waters by 2021. The proposed MSD is the main outcome of the 6EAP’s Thematic Strategy on the marine environment, and is regarded by the Commission as the environmental component of the EU’s developing maritime policy.

The aim of the MSD is to achieve ‘good environmental status’ in the marine environment by 2021 at the latest. This is to be achieved through the development and implementation, by each of the relevant Member States, of one or more marine strategies for their territorial waters.

Member States’ marine strategies are to include a programme of measures to achieve good environmental status. Programmes of measures should be based on an eco-system approach, and may include any of a number of approaches set out in an annex. These include ‘spatial and temporal distribution controls, i.e. management measures that influence where and when an activity is to occur; and management co-ordination measures to ensure that different sectoral measures at different institutional levels are co-ordinated.

³³ Commission press releases on 19 and 26 September 2007 (IP/07/1355 and IP/07/1399)

Parliament gave the draft Directive a first reading on 14 November 2006. Its resolution proposed that a single marine strategy should be produced jointly by all relevant Member States for each marine region, instead of individual national strategies. It also proposed an earlier deadline for meeting 'good environmental status'. The Council adopted its common position on the draft MSD on 12 July 2007. This rejected Parliament's attempts to make the draft Directive more stringent, but clarified a number of key terms, in particular the definition of 'good environmental status'. There is still considerable debate between the institutions on key measures within the proposal. Thus the extent to which the MSD will deliver biodiversity benefits remains uncertain.

Integrated coastal zone management

In May 2002 a Recommendation on the implementation of integrated coastal zone management (ICZM) in Europe was adopted by the Council and the Parliament (Recommendation 2002/413/EC). This recommends a strategic approach and principles that Member States should follow in undertaking national ICZM stocktaking and national ICZM strategies.

In a Communication of 7 June 2007 (COM(2007)308) the Commission presents the conclusions of its review of the implementation of ICZM Recommendation and sets out the main policy directions for further promotion of ICZM in Europe. According to the review, implementation of ICZM has been slow. Most national strategies have been adopted in 2006 and consequently their implementation is only starting. However, it already seems apparent that there is a lack of effective mechanisms to secure the implementation of the strategies.

The 2007 review provides for a number of actions aiming to enhance the implementation of ICZM in the future. The 2005 Marine Thematic Strategy (including the proposed MSD) and the proposed EU Maritime Policy⁽³⁴⁾ are foreseen to provide impetus to the ICZM and its further implementation. In addition, to support the implementation of ICZM in 2007-2013 opportunities are offered through the Structural and Cohesion Funds, the EFF and as part of FP7. The uptake of many of the opportunities will depend on the Member States' interest in promoting ICZM in their national funding priorities. As coastal zone management is highly place and context specific, there is a need to further explore what the adequate instruments can be for implementing ICZM at different levels in the EU.

Marine protected areas

Subsequent to the 6EAP, the Community Action Plan to integrate environmental protection requirements into the CFP (COM(2002)186) set a specific target for 'Natura 2000 sites at sea and associated management measures to be completed before end of 2004.' It is difficult to monitor progress in implementing the Natura 2000 network in the marine environment because the lack of implementation only becomes evident at an advanced legal stage, e.g. through infringement proceedings. Data on site designation is limited and consequently drawing meaningful conclusions on the extent of area designation becomes impossible. Nonetheless, designation of marine sites is progressing very slowly. This is reflected in the postponement of the initial 2004 deadline for designation of marine sites to 2012 in the 2006 Biodiversity Action Plan.

³⁴ Commission's Green Paper 'Towards a future Maritime Policy for the Union: A European vision for the oceans and seas' adopted in 2006

Nevertheless, there is an increasing trend of using area closures under the CFP. These are often used as part of stock recovery measures and to restrict certain gear types, sometimes for certain periods (e.g. the Southern hake and Norway lobster stocks recovery plan, Regulation (EC) No 2166/2005). Such area closures are typically used as a tool to restrict fishing effort for stock recovery purposes, rather than broader environment and biodiversity objectives. However, these measures are also criticised as an ineffective tool for fishing capacity reduction. Their increasing use is therefore not necessarily an indicator of greater protection of the environment as they do not typically represent complete and permanent area protection and they arguably detract from the overall management requirements. In the limited cases where areas have been closed to fishing, the closures are rarely complete and only apply to certain gears and/or seasons.

One clear case of CFP protection measures for a Habitats Directive designated habitat is the adoption of a bottom-trawling ban in the 'Darwin Mounds' area (Regulation (EC) No 1475/2003) to protect deepwater coral reefs.

3.2.8 Strategies and measures on forests

The Communication on an EU Forest Action Plan (COM(2006)302) refers extensively to biodiversity. One of the objectives of the plan is to improve and protect the environment, with conservation of biodiversity as a specific objective. One of the key actions is to contribute towards achieving the revised EU biodiversity objectives for 2010 and beyond. In addition biodiversity conservation is also mentioned under key action 5, supporting the objective of improving the long-term competitiveness of the forest sector and enhancing the sustainable use of forest products and services. Furthermore the Rural Development Regulation provides for a set of measures in support of sustainable forest management.

One can conclude that biodiversity policy has been, at the level of documents and strategies, been fully integrated into EU forestry policy. However, the fact that forestry as such remains largely outside the competence of the EU means that the concrete actions are relatively limited. In addition the EU's objectives in the area of energy policy call for the doubling of the renewable primary energy production and the Commission has adopted a Biomass Action Plan (COM(2005)628). The need to increase the use of biomass in energy production, which is addressed also in the Forest Action Plan, may contribute to intensification of forestry and timber extraction practices, and may therefore create conflict with biodiversity protection. The Forest Action Plan and its technical annex do not adequately evaluate this conflict in objectives. This, alongside with other challenges of multifunctional forest use should receive further attention in any serious effort to outline the directions of the future for European forests.

3.2.9 Genetically modified organisms (GMOs)

In relation to genetically modified organisms (GMOs), the 6EAP states that the Community should develop 'the provisions and methods for risk assessment, identification, labelling and traceability of GMOs in order to enable effective monitoring and controls of health and environmental effects'. Directive 2001/18/EC, which concerns the placing of the market and the experimental release of GMOs, was in place at the time of the release of the 6EAP and is still one of the cornerstones of EU GMO legislation. During the course of the 6EAP it has been complemented and amended by a number of additional provisions, which altogether form a substantially renewed legislative framework for GMOs.

The European Food Safety Authority (EFSA) was set up in 2002, in accordance with Regulation (EC) No 178/2002, to provide independent scientific advice on all matters linked to food and feed safety, including carrying out risk assessments of GMOs that have been notified for authorisation.

The rules on traceability and labelling of GMOs have been developed through Regulation (EC) No 1830/2003, which puts in place measures foreseen under Directive 2001/18/EC and introduces a much debated threshold of 0.9 % GMO content for labelling. Regulation (EC) No 1829/2003, which entered into force in November 2003, lays down Community rules for the authorization, supervision and labelling of genetically modified food and feed. The Commission has also put in place a public register of authorised genetically modified (GM) food and feed. More recently, a related Regulation on organic farming was adopted (Regulation (EC) No 834/2007), under which products can be labelled organic if they contain no more than 0.9 % GMO material.

Detailed legislation related to all the aspects of monitoring and control mentioned in the 6EAP has been put in place. However, whether these actually constitute appropriate measures for enabling the 'effective monitoring and controls of health and environmental effects' is still subject to debate. The procedures for authorization of GMOs under Directive 2001/18/EC and Regulation (EC) No 1829/2003 have drawn considerable criticism from different Member States, environmental groups and other stakeholders. The Council is also deeply divided on the issue of GMOs and time after another fails to reach a qualified majority in GMO authorization votes. In addition, the reliability and transparency of the safety assessments carried out by the EFSA, on which the Commission has generally based its decisions, have been questioned. Moreover, the fact that several Member States have introduced national safeguard clauses (i.e. bans on certain GMOs) and provisions on coexistence of GM crops with non-GM crops also signals a lack of confidence in the established regulatory system. However, the recent Court of Justice decision of 13 September 2007 ruling against Austria on a ban on the use of biotech crops in the region of Upper Austria provides more clarity on the limited possibilities for Member States to adopt national safeguard clauses. (Joined Cases C-439/05 P and C-454/05 P)

The 2006 report on the implementation and effectiveness of Regulation (EC) No 1829/2003 (COM(2006)197) concluded that based on a number of existing experiences the possibility of unauthorised GM products reaching the EU internal market can not be excluded. Based on the lessons learned, the Commission is now to consider whether specific further actions are needed to prevent the unauthorised entry of GMO to the EU. As regards Regulation (EC) No 1830/2003, the 2006 evaluation (COM(2006)626) concluded that as the legislation has only been operational for a limited period of time the experience of its implementation is still limited. Therefore, the Commission is to draw up a second evaluation report by 2008 when a more complete picture of its implementation can be obtained.

The second paragraph on GMOs of the 6EAP states that the EC should aim for 'swift ratification and implementation of the Cartagena Protocol on Biosafety'. The Protocol was concluded by the EC through Council Decision 2002/628/EC and entered into force in 2003. In 2003, the EC adopted Regulation (EC) No 1946/2003 as the EU's main implementation tool for the Protocol.

3.2.10 General conclusions

The overview of the achievement of the objectives related to nature and biodiversity in the 6EAP show that progress has been made at the general policy level with references to biodiversity in many key policy documents. Concrete progress has also been made in some specific areas. In other areas the actions taken to safeguard biodiversity are of more varying quality (see Table 1). There are, however, several areas where one could expect concerns and actions from a biodiversity point of view, but such operational integration is still to a large extent lacking. These areas include, for example, policies on air, chemicals, noise, GMOs, flood protection, extractive industries and transport. The enlargement policy includes rather vague approaches to biodiversity conservation at the level of the specific Multi-annual Indicative Planning Documents. These findings suggest that there is a need to develop further the operational interpretation of what safeguarding biological diversity means in specific policy settings.

In practice this will require a greater effort on R&D aiming at supporting innovative solutions for sustainable production and sustainable investments in relation to biodiversity. Such a focus on ecosystem services is likely to also assist the integration of biodiversity policy into other policy areas, including the CAP, CFP, climate and transport policies, all of which have major impact on the future of biodiversity in Europe.

Finally, it is to be noted that since the adoption of the 6EAP a number of other biodiversity related concerns and priorities, such as adaptation of biodiversity to climate change, have arisen. Consequently, any assessments of the EU's biodiversity policy should not be solely based on the evaluation of the progress in implementing the 6EAP goals but there is a need for a broader review, including reflecting on the 6EAP priorities and their implementation in the light of current biodiversity concerns.

3.3 Environment and health

3.3.1 Research programmes and scientific expertise

The overall aim of the 6EAP with respect to environment and health research is to achieve better understanding of the threats to environment and health and to take action to prevent and reduce these threats. Therefore the 6EAP aims to reinforce the EU research programmes and scientific expertise and to encourage the international coordination of national research programmes. The 6EAP in particular aims to identify the priority areas for research and action, to develop **indicators**, to re-examine, develop and update current **health standards and limit values** and to **review trends** and establish an **early warning system** for new problems. The 6EAP demands special attention for health impacts of **electromagnetic pollution**, for the development of **alternative methods to animal testing** and for effects on vulnerable groups like **children** and **elderly**.

European Environment and Health Strategy

Several policy outputs have been produced since 2002. On 11 June 2003 the Commission published its 'European Environment and Health Strategy' (COM(2003)338). The strategy aims to reduce the disease burden caused by environmental factors in Europe, to identify and prevent new health threats caused by environmental factors and to strengthen EU capacity for policy making in this area. The focus of the strategy is on children's health, having identified this group as being amongst the most vulnerable. Although it is not a Thematic Strategy, the origin of the strategy is the 6EAP. As the strategy is to be implemented in cycles, the first cycle (2004-2010) is focusing on improving understanding of the link between environmental factors and four priority areas: childhood respiratory diseases, asthma, allergies; neurodevelopment disorders; childhood cancer; and endocrine disrupting effects.

The strategy in particular aims to establish a European Integrated Environment and Health Monitoring and Response System, which will facilitate information exchange.

In October 2003 the Environment Council adopted conclusions on the environment and health strategy. It welcomed the Commission's Communication and its decision to focus on these four key problems, but also called on the Commission to consider including research on five other issues in the first cycle: indoor environmental factors including tobacco smoke; the socio-economic determinants of environmental health; impacts of climate change; contaminated water; and noise. It also called for attention to be given to developing broader health impact assessment methodologies, information surveillance systems, an early warning system and indicators on environment and health.

Environment and Health Action Plan (2004-2010)

In accordance with the strategy's aim to be implemented in cycles, the Commission launched in June 2004 its Environment and Health Action Plan (EHAP) for the first cycle, i.e. 2004-2010 (COM(2004)416). The Action Plan does not contain any proposals for legislative measures, but lists 13 action points focused around information, its collection, understanding and dissemination. These action points are split between three themes. The first theme is on improving the information chain and includes amongst others actions on environmental indicators, on integrated monitoring, and on biomonitoring. The second theme is on filling the knowledge gap and covers actions on strengthening research, on targeting research on diseases, disorders and exposures, on developing methodologies to analyse environment-health interactions and on identifying and addressing emerging hazards on environment and health. The third theme is reviewing policies and improving communication. It covers actions on awareness raising, risk communication, training and education and on reviewing and adjusting risk reduction policies (with respect to indoor air quality and electromagnetic fields). In general the action plan will particularly focus on the links between environmental factors and respiratory and neuro-developmental diseases, cancer and endocrine disruption, in accordance with the earlier adopted strategy. An important element throughout the EU's environment and health work and hence the Action Plan is an emphasis on child health.

Mid term review of the European Environment and Health Action Plan

The Commission published its mid term review of the Action Plan in June 2007 and concluded that major steps have been taken, but that nevertheless many steps still need to be taken in the implementation of the plan. With respect to information and research, the Commission comes amongst others to the following conclusions:

- a number of EU-wide environment and health monitoring and information systems have been put in place;
- assessment strategies have been put in place to cover the range of environmental impacts expected to affect human health;
- the Commission has been preparing an EU pilot project on human biomonitoring in close cooperation with Member States and experts;
- the Commission has launched targeted research projects on asthma and allergy, on neuro-immune disorders, on exposure to metals, on uncommon cancers and on gene-environment interactions regarding cancer in high-risk populations;

- the Commission has funded several projects to develop methodological systems to analyse environment/health interactions, in particular with respect to evaluation of cumulative effects and interaction between stressors and their influence on human health;
- the Commission has funded several projects to provide research support for policy actions in the field of climate change, water quality and risk assessment of nanotechnologies.

6th and 7th Research Framework Programme

The mid-term review of the 6EAP by the Commission noted that the ‘Scientific Support to Policies’ programme within the 6th Research Framework Programme (FP6) in particular has funded projects covering four domains: indoor air pollution, ambient air pollution, electromagnetic fields and the four priority diseases/disorders identified in action 6 of EHAP. Overall the implementation of the research actions 5 to 8 of EHAP has resulted in the funding of 38 large scale EU-wide projects with a cumulative budget of over €200 million, funded by FP6.

The 7th Research Framework Programme (2007-2013) (FP7) also addresses environment and health research topics. In fact, environment and health issues are being addressed under the ‘Environment and Climate Change’ theme of the FP7 ‘Cooperation’ programme. The programme will continue funding of research related to health impacts of environmental stressors such as industrial chemicals, noise, electromagnetic fields or air pollutants.

Assessing the outcomes against objectives

Major steps have been taken in the reinforcement of EU research programmes and scientific expertise. Considerable funding for research projects has been made available through FP6 and FP7. Priority areas for research and action have been identified. Special attention was given to health impacts of electromagnetic pollution and to effects on children. EHAP also pays attention to identifying and addressing new hazards for environment and health (action 8). The development and validation of alternative methods to animal testing (in the field of chemical safety) is to be addressed within the framework of REACH (Regulation (EC) No 1907/2006). However, not much progress has been reported on developing environment and health indicators: the mid term review of the EHAP does not mention anything about this major objective of the 6EAP. The same holds for EHAP’s aim to establish a European Integrated Environment and Health Monitoring and Response System.

3.3.2 Chemicals

The 6EAP sets ambitious objectives for the EU’s chemicals policy. The aims and priority actions agreed to in the 6EAP broadly reflect the proposals formulated by the Commission in its White Paper of February 2001 outlining a strategy for the future of EU chemicals policy (COM(2001)88), and endorsed by the Council in its conclusions of June 2001. The stated overall objective is to aim to achieve by 2020 that chemicals are only produced and used in ways that do not lead to a significant negative impact on human health and the environment. To this end, current knowledge gaps need to be overcome and hazardous chemicals should be systematically substituted by safer alternatives.

The specific priority actions called for in the 6EAP match the main outlines of the new regulatory system proposed in the White Paper under the name 'Registration, Evaluation and Authorisation of Chemicals' (REACH): placing the responsibility for generating knowledge about chemicals on industry, developing a coherent risk assessment and management system for both existing and new substances based on a tiered approach, subjecting the use of substances of very high concern to authorization in order to substitute dangerous chemicals by safer chemicals or safer alternative technologies, while further developing criteria for identifying such substances, and ensuring wider public access to information.

REACH

At the time of adoption of the 6EAP, the Commission was still in the process of preparing its concrete legislative proposals for the introduction of REACH. The 6EAP laid down a target date: the 'main measures that are necessary in view of the identified objectives' were to be 'developed speedily so that they can come into force before the mid-term review' of the 6EAP. The REACH system, as eventually adopted in Regulation (EC) No 1907/2006, falls short of the objectives laid down in the 6EAP.

The legislative procedure, which was expected to start soon after the adoption of the 6EAP, was considerably delayed due to the internal decision-making process within the Commission, subject to conflicting pressures from various interest groups and Member States, and the formal stakeholder consultation and impact assessment procedures. The Commission only managed to transmit its proposal for the REACH Regulation to the European Parliament and the Council by the end of 2003. (COM(2003)644) The original intentions of the Commission's White Paper and the 6EAP were watered down in the course of the legislative procedure and the resulting REACH Regulation, adopted in December 2006, will only be fully operational in 2008.

Industry responsibility for generation of chemical safety data and risk assessment

REACH does place increased responsibility on manufacturers, importers and downstream users of chemicals for generating knowledge about their hazardous properties and risks of their use, but, in the course of the legislative process, many exceptions to this basic principle were introduced, which considerably limit the scope of industry's duty of care. In particular, the data requirements for substances produced in volumes below 10 tonnes and for substances incorporated in products were strictly limited, as were the obligations of downstream users. In many cases, producers and importers are in fact be required to provide less information about new substances than they were under previous EU chemicals legislation.

The new REACH system eliminates the different treatment of new and existing substances in terms of testing, risk assessment and risk management. However, due to the long 'phase-in' periods provided for existing substances, the benefits of the new, tiered approach will be considerably delayed. Comprehensive testing and risk assessment of many of those substances will not in fact start before fifteen years after the entry into force of the REACH Regulation. The new system still places an important administrative and procedural burden on public authorities, including the newly established European Chemicals Agency (ECHA), to actually compel industry to discharge its responsibilities and, due to resource constraints and the need for prioritisation, there is still a very long way to go before appropriate risk management measures are actually taken for many 'phase-in' substances.

Authorisation procedure and substitution principle

Criteria for the identification of substances of very high concern, including endocrine disruptors, whose use will be subject to authorisation, were agreed, but these fix a very high threshold, requiring 'scientific evidence of probable serious effects to humans or the environment' for endocrine disruptors and certain other substances. This requirement is arguably inconsistent with the precautionary principle, which is said to 'underpin' the REACH system. More importantly, however, the authorisation requirement for all substances of very high concern will become operational only after a formal decision will have been taken to list the individual substances concerned in an annex to the Regulation. This is likely to be a very slow and cumbersome decision-making process.

The principle of substitution laid down in the 6EAP is compromised by provisions in the REACH Regulation which will require an authorisation for use to be granted in cases in which the risk is considered to be 'adequately controlled', even if safer alternatives are in fact available.

Public access to information

Finally, the 6EAP objective of ensuring wider public access to information on chemicals was also compromised by provisions limiting the categories of 'non-confidential information' that will be freely accessible, specifying a long list of confidential information (including production volumes and company names) and extending the possibilities for industry to claim that certain data should be treated as confidential.

To sum up, the REACH system will clearly not be able to meet the ambitious chemical safety objective which the 6EAP aimed to achieve by 2020. In view of the many loopholes and complex procedures, there is no way all chemicals produced and used in the EU can be subjected to adequate assessment and, where necessary, risk management measures before this target date.

Measures additional to REACH

Though legislative process on REACH has mobilised most of the attention of stakeholders and policymakers since 2002, a number of other measures related to the management of chemicals have also been taken at EU level since the adoption of the 6EAP. These will be briefly analysed below.

In order to implement the 1998 Aarhus Protocol and 2001 Stockholm Convention on Persistent Organic Pollutants (POPs), which were both ratified by the European Community in 2004, Regulation (EC) No 850/2004 on POPs was adopted to codify and further strengthen the relevant provisions of EU law on the production, marketing, use and disposal of the relevant substances. This Regulation also requires the Member States to develop national inventories of dioxins, furans and PCB releases and identify measures to address them. In March 2007 the Commission adopted the EU's Implementation Plan on POPs, which sets out 32 actions needed to meet the obligations under the Stockholm Convention. In 2004, the Commission published its first review of the 2001 Dioxin Strategy to reduce levels of dioxins, furans and polychlorinated biphenyls (PCBs), which are among the POPs regulated at the international level. This was followed up with a second progress report in July 2007, summarising the activities undertaken by the Commission over the period 2004-2006.

The 1998 Rotterdam Convention on Prior Informed Consent (PIC) was implemented in Community law by Regulation (EC) No 304/2003 concerning the export and import of dangerous chemicals, thus enabling the EC to become a party to the Convention. However, the Regulation was annulled by the Court of Justice in a judgment delivered on 10 January 2006, in proceedings brought by the Commission because of a long-standing inter-institutional dispute concerning the legal basis of trade-related environmental measures and the boundary between the Community's environmental policy and common commercial policy. The annulment of the PIC Regulation did not have any immediate legal effects for exporters of chemicals, as the Court decided to maintain the effects of the annulled regulation 'until the adoption, within a reasonable period, of a new regulation founded on appropriate legal bases'. A proposal for a new Regulation is currently pending before Parliament and Council.

Regulation (EC) No 648/2004 on detergents is an internal market measure to establish rules that enable free movement of detergents and surfactants for detergents in the EU, while 'ensuring a high degree of protection of the environment and human health'. The Regulation entered into force in October 2005 and harmonised rules in relation to the biodegradability of surfactants, restrictions and bans on surfactants on the grounds of biodegradability, information manufacturers must hold for use by Member State competent authorities and medical personnel, and labelling for detergents.

Regulation 793/93/EEC on the evaluation and control of the risks of existing substances will be repealed by REACH on 1 June 2008. To take full advantage of the work already performed under this Regulation, the Commission is empowered during the start-up period of REACH to initiate restrictions based on this work without having to follow the full restrictions procedure laid down in the REACH Regulation.

The current instrument for this purpose is Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations. Since 2002, this Directive has been amended a dozen times, to add new restrictions on substances found to be hazardous to human health and the environment. The most recent such measure was taken by Directive 2006/122/EC (30th amendment), which restricts the use of perfluoro-octane sulfonates.

Directive 67/548/EEC on the classification, packaging and labeling of dangerous substances was adapted to REACH by amending Directive 2006/121/EC. As REACH does not include rules on the classification, packaging and labelling of dangerous substances, the existing requirements set by the 1967 Directive, as amended, will continue to apply for some time. Directive 1999/45/EC on the classification, packaging and labeling of dangerous preparations complements Directive 67/548/EEC as regards preparations.

In June 2007, the Commission adopted a proposal for a new Regulation on classification, labelling and packaging of substances and preparations (COM(2007) 355) This new legislative proposal is designed to align the EU system of classification, labelling and packaging of chemicals with the United Nations Globally Harmonised System (GHS), replacing both Directives 67/548/EEC and 1999/45/EC from June 2015. It is expected to facilitate global trade and harmonised communication of hazard information on chemicals. It will complement REACH and is expected to be adopted by mid to late 2008.

3.3.3 Pesticides

The overall objective of the 6EAP with respect to pesticides is to 'reduce the impacts of pesticides on human health and the environment and more generally to achieve a more sustainable use of pesticides as well as a significant overall reduction in risks and of the use of pesticides consistent with the necessary crop protection'. Pesticides in use which are persistent or bio-accumulative or toxic or have other properties of concern should be substituted by less dangerous ones where possible. The specific priority actions called for in the 6EAP are the full **implementation and review** of the applicable **legal framework** and the development of a **Thematic Strategy** on the sustainable use of pesticides. The 6EAP stated that the review of the existing legislation might include a comparative assessment and developing EU-wide authorisation procedures for placing pesticides on the market. The Thematic Strategy should aim to minimise the hazards and risks to health and environment from the use of pesticides, to improve controls on the use and distribution of pesticides, to reduce the levels of harmful active substances (including through substitution), to encourage the use of low input or pesticide free cultivation and to establish a transparent system for reporting and monitoring progress.

Thematic Strategy on the sustainable use of pesticides

A Thematic Strategy on the sustainable use of pesticides has been developed, albeit relatively late. The strategy includes five legislative proposals, none of which has yet been approved by Parliament and Council. The legislative processes are still ongoing and will definitely not be finalised in 2007.

Two of these legislative proposals were published on the same day as the Thematic Strategy: a new Framework Directive on pesticide use, and a Regulation concerning the placing of plant protection products (PPPs) on the market which will replace the current Directive 91/414/EEC. A third legislative proposal relating to EU water quality objectives under the Water Framework Directive has been published a few days later, in July 2006. In December 2006 the Commission tabled a proposal for a Regulation concerning statistics on the distribution and use of PPPs. By 2008, the Commission will also propose legislation to set minimum standards for pesticide application equipment.

Proposal for a framework Directive on pesticide use

The proposed framework Directive would introduce general rules to reduce pesticide impact on human health and the environment. It would also aim to achieve an overall reduction in risks of pesticide use, and bring the use of pesticides in line with existing rules on crop protection. The proposal includes the following elements (amongst others):

- a requirement for Member States to establish National Action Plans (NAPs) which will set individual objectives to reduce hazards, risks and dependence on chemical pesticides (quantitative criteria are excluded);
- creation of compulsory systems of training and education for distributors and professional users of pesticides in order to ensure that risks are taken into account;
- measures for awareness raising of the general public;
- regular and compulsory inspection of application equipment in order to reduce adverse impacts of pesticides on human health;
- a ban on aerial spraying to limit the risks of adverse effects to human health and the environment (derogations are possible if there are clear advantages and environmental benefits in comparison with other spraying methods);

- defining areas of significantly reduced or zero pesticide use in coherence with measures under other legislation such as the Habitats Directive; and
- promotion of low pesticide-input farming and in particular Integrated Pest Management (IPM).

The proposed framework Directive lacks some of the elements that appeared in earlier versions, e.g. a detailed list of points that NAPs should cover as a minimum, along with a requirement to set national quantitative targets for the recovery of packaging and obsolete pesticides, and clauses encouraging Member States to set quantitative risk reduction targets.

The decision-making process is still ongoing. The EP Plenary vote on the first reading is expected in October, and a political agreement on the Council's common position in November 2007.

Proposal for a Regulation on placing plant protection products on the market

The proposed Regulation (COM(2006)388) sets out harmonised rules for plant protection products, and would replace current Directive 91/414/EEC. The measures in the proposed Regulation include:

- shortening of the time-span for the approval of active substances, with strict deadlines laid down for Member States, the EFSA and the Commission;
- authorisations of active substances will no longer have to be renewed every 10 years (just once, after the first 10 year period);
- division of the EU into three zones with similar climatic and ecological features: plant protection products authorised by any one Member State will automatically be cleared for use in the other Member States in that particular zone. National authorities will still be allowed, however, to impose specific national risk mitigation measures if deemed necessary;
- provisions for the substitution of active substances with safer alternatives; and
- a new rule prohibiting the duplication of tests on vertebrate animals, which should reduce animal testing and improve animal welfare in this area.

The decision-making process is still in an early phase. At the time of writing Parliament's first reading was not yet finished. The Environment Council is expected to reach a political agreement in October.

Assessing the outcomes against objectives

Up to now no concrete policy outputs have been produced, except for the Thematic Strategy on the sustainable use of pesticides, which was accompanied by several legislative proposals. Whether these legislative pieces will meet the 6EAP objectives depends of the result of the ongoing negotiations. In addition, the Thematic Strategy covers only PPPs, which constitute only a part of all pesticides. Biocides in particular are not covered. The Commission, however, has committed itself to reconsider how to address biocides in 2007.

Regarding the proposal for a Regulation on placing PPPs on the market, the EP's Environment Committee is pushing for amendments to the Commission's proposal that would both weaken and strengthen it. Positive elements are the Committee's support for banning substances which prove to be carcinogenic, mutagenic, neurotoxic, immunotoxic or toxic for reproduction, the rejection of a zonal geographic approval system, the tightening of provisions promoting the substitution of active agents with safer alternatives and the strengthening of links to the water framework Directive.

However, the Committee did not support the provisions for applying mandatory standards of IPM and for promoting non-chemical alternatives in crop protection, thereby weakening the proposed requirements for better application of pesticides.

Regarding the proposal for a framework Directive on pesticide use, the EP's Environment Committee, going further than the Commission proposal, called for mandatory EU targets to reduce pesticide use (reduction of 25 % within five years and 50 % within 10 years), separate national targets for particularly active or toxic substances, the introduction of pesticide-free buffer zones, at least 10 metres wide, around watercourses and the introduction of financial instruments such as a tax to finance the development of IPM.

3.3.4 Water

There are fewer specific commitments for water protection in the 6EAP than for some other areas of EU environmental policy because the institutions had very recently adopted the wide-ranging Water Framework Directive (2000/60/EC) (WFD). This was developed over many years bringing together different policy approaches into a single framework. The WFD has a long implementation timetable and it was considered unnecessary in the development of the 6EAP to reconsider the issues covered by the Directive. Thus the commitments in the programme are of three types:

Firstly, a general statement on 'achieving quality levels of ground and surface water that do not give rise to significant impacts on and risks to human health and the environment, and to ensure that the rates of extraction from water resources are sustainable over the long term', which is, indeed the general objective of the framework Directive. This is supported by the objectives of 'ensuring a high level of protection of surface and groundwater, preventing pollution and promoting sustainable water use' and 'working towards ensuring full implementation of the water framework Directive' and 'aiming at a good ecological, chemical and quantitative water status and a coherent and sustainable water management'. All of which is encompassed by implementation of the WFD and specific additional measures (below).

Secondly, there is a commitment to identify some specific policy initiatives either outside the scope of the WFD or necessary to support it. Thus the 6EAP aims at 'developing measures aimed at cessation of discharges, emissions and losses of Priority Hazardous Substances, in line with the provisions of the Water Framework Directive' and 'ensuring a high level of protection of bathing water, including revising the bathing water Directive'.

Finally, the 6EAP emphasises the need for policy integration through the aim of 'ensuring the integration of the concepts and approaches of the Water Framework Directive and of other water protection directives in other Community policies'.

The work undertaken jointly by Commission and Member States to examine in detail the many different issues addressed by the Directive through a Common Implementation Strategy are significant and has demonstrated commitment. This has resulted in publication of a series of guidance documents. The characterisation of river basin districts, the environmental pressures and impacts and economics of water uses (Article 5 Reports), which were required by 2004, has been undertaken by almost all Member States in time.

The 6EAP also calls for the concepts of the WFD to be integrated into other EU policies. It is important to note that integration has been promoted in the new Bathing Water Directive and Groundwater Directive, as well as the proposed Directive on flood management (see below). The approach of the WFD is also taken forward in the proposed MSD and integration with the WFD was part of the Commission's objectives in the review process of the IPPC Directive in 2006.

Concrete policy outputs

So far two new Directives have been adopted since the 6EAP: Directive 2006/7/EC on the management of bathing water quality and Directive 2006/118/EC on the protection of groundwater against pollution and deterioration. In addition, two legislative proposals have been made. Firstly, a proposal for a Directive on the assessment and management of floods (COM(2006)15), on which political agreement has been reached between the EU institutions, but which is still awaiting publication. Secondly, a proposal for a Directive on environmental quality standards for priority substances in the field of water policy (COM(2006)3971), which was submitted three years later than called for by the relevant provisions of Decision 2455/2001/EC. The Commission proposes to fix limit values of concentration in surface water for 41 priority substances, that is, those which present a significant risk to the aquatic environment due to their generalised use and high concentration in surface waters.

Further, three implementation studies have been published: firstly, a report from the Commission of 23 April 2006 on the implementation of Directive 91/271/EEC on urban waste water treatment, as amended by Directive 98/15/EC (COM(2004)248); secondly, a report on the implementation of Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources for the period 2000-2003 (COM(2007)120); and thirdly, a Communication from the Commission, entitled 'Towards sustainable water management in the European Union', on the first stage in the implementation of the WFD (COM(2007)128).

Assessing the outcomes against objectives

On the specific objectives set out in the 6EAP there are no evident gaps. Progress is being made on implementation of the WFD and additional announced policy measures have been adopted or are in the process of adoption. Specific legislative objectives on bathing waters and groundwater were achieved and, additionally, significant progress has also been made on flood management. The key implementation gaps relate to the general objectives relating to clean water and sustainable use of water resources. Many of the problems in this area ought to be addressed with full implementation of the WFD, but will also require re-evaluation of other policies, such as the CAP.

3.3.5 Air quality

Monitoring and assessment of air quality

One of the specific commitments on air quality in the 6EAP is 'improving the monitoring and assessment of air quality, including the deposition of pollutants, and the provision of information to the public, including the development and use of indicators'. This is a broad objective that has been taken forward through legislative work on daughter Directives of the air quality framework Directive and in the proposed revision of this framework Directive itself (COM(2005)447) as well as in wider contexts such as the work of the EEA.

Thematic Strategy on air pollution

Furthermore, the 6EAP calls for 'a thematic strategy to strengthen a coherent and integrated policy on air pollution to cover priorities for further actions, the review and updating where appropriate of air quality standards and national emission ceilings with a view to reach the long term objective of no-exceedence of critical loads and levels and the development of better systems for gathering information, modelling and forecasting'. A Thematic Strategy was adopted on 21 September 2005 (see also section 4.2). The Thematic Strategy includes proposals to revise air quality legislation, but there are yet to be proposals for further controls on emissions.

Firstly, the Thematic Strategy is to be implemented by ‘streamlining of existing provisions and merging five legal instruments into a single directive’ and by ‘the introduction of new air quality standards for fine particulate matter (PM_{2.5}) in air’. The proposal for a Directive on Ambient Air Quality and Cleaner Air for Europe (COM(2005)447) includes this. This proposal aims at creating a unified legislation on air quality, consolidating 67 present articles into 32 new ones and 32 annexes into 17. The proposed Directive was based on long term goals for air quality, and included some changes in implementation timetables proposed by Member States. The strategy as well as the proposed Directive contains many quantified air quality targets that can be measured. With respect to evaluating the achievement of these targets the main challenge is to determine to which degree the impacts are due to the Directive, to which degree they are caused by other policies (EU or national) and to which degree by other external factors.

The Thematic Strategy also proposes to amend the National Emissions Ceiling Directive (NECD) (2001/81/EC). The Council Conclusions on the Thematic Strategy stress the importance of such a revision ‘as soon as possible’ and ‘taking into account the experiences and difficulties faced by the Member States during the implementation of that Directive’.

Finally, the Thematic Strategy is to be implemented through the integration of air quality concerns into other policy areas. Policy areas emphasised are: energy, transport, agriculture and structural funds. In addition the cooperation with the UNECE Convention on Long-Range Transboundary Air Pollution (CLRTAP) is emphasised.

Ambient air quality standards

The 6EAP also calls for ‘adopting appropriate measures concerning ground-level ozone and particulates’. A Directive on ozone in ambient air was actually adopted prior to the 6EAP (Directive 2002/3/EC). Particulate limit values are addressed in the proposal for a Directive revising the air framework Directive (COM(2005)447). Furthermore, Directive 2004/107/EC sets ambient air quality standards for arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons.

Indoor air quality

With respect to the commitment of ‘considering indoor air quality and the impacts on health, with recommendations for future measures where appropriate’, little progress has been made.

Reducing emissions further from relevant source categories

The 6EAP calls for a ‘further development of specific Community instruments for reducing emissions from relevant source categories’. With respect to this objective, there have been significant developments in the area of transport emissions through the adoption of Directive 2004/26/EC on emissions from engines to be installed in non-road mobile machinery, which included emission limit values for inland waterway vessels and railway locomotives, and Directive 2005/33/EC on the sulphur content of marine fuels. Commission proposals for a revision of Directive 98/70/EC on fuel quality (COM(2007)18) and for a Directive on clean road transport (COM(2005)634) are still pending.

On industrial emissions there has been some legislative development on limiting emissions from volatile organic compounds (VOC) (Directive 2004/42/EC), while most action is taken forward within the development of Best Available Techniques Reference Documents (BREFs) under the IPPC Directive and its implementation.

Assessing the outcomes against objectives

The key gaps are within the scope of the Thematic Strategy and considered in more detail elsewhere. These include the fact that legislative proposals cannot deliver the broad objective of 'clean' air and that proposals for some industrial emission sources are still awaited. The Thematic Strategy acknowledges that existing policy measures are not sufficient to meet the objective of the 6EAP with respect to air quality. The Impact Assessment (SEC(2005)1133) concludes that not even the implementation of the Maximum Technically Feasible Reduction (MTFR) scenario would enable the objective to be met. Legislative revision has also been overtaken by programmed review processes. This is particularly so with reviews of the IPPC Directive, the National Emissions Ceiling (NEC) Directive (2001/81/EC) and the Large Combustion Plant (LCP) Directive (2001/80/EC). The Thematic Strategy was unable to propose further reductions in emissions to meet critical loads because this would pre-empt review conclusions.

3.3.6 Noise

The overall objective of the 6 EAP with respect to noise is to substantially reducing the number of people regularly affected by long-term average levels of noise, in particular from traffic which, according to scientific studies, cause detrimental effects on human health and preparing the next step in the work with the noise Directive. The specific priority actions called for in the 6EAP are to supplement and further improve measures, including appropriate type-approval procedures, on **noise emission from services and products**, in particular **motor vehicles**, measures to reduce noise from the interaction between tyre and road surface, from **railway vehicles, aircraft and stationary machinery**.

The priority actions also have a clear link to transport measures as they require the development and implementation of instruments to mitigate traffic noise, where appropriate, for example by means of transport demand reduction, shifts to less noisy modes of transport, the promotion of technical measures and of sustainable transport planning.

Concrete policy outputs

Towards the end of 1998 the Commission initiated a work programme to develop common assessment methods for noise. This work lead to the Directive on the assessment and management of noise (2002/49/EC), which was published in the *Official Journal* a few days before the launch of the 6EAP. This Directive sets a common, Community-wide approach to the reduction of noise through strategic noise mapping, providing information to the public and adoption of action plans. It provides the basis for developing future Community measures to reduce noise emitted from major sources, including road and rail vehicles and infrastructure, aircraft and outdoor equipment, if appropriate. In effect the Directive is a noise framework Directive, as it includes provision for 'daughter' Directives. It specifically called on the Commission to come up with legislative proposals to further reduce noise emissions from major sources by 18 July 2006.

As part of the requirements of the Directive the Commission published a report (COM (2004)160) on existing Community measures relating to sources of environmental noise in March 2004. This report refers directly to the objectives of the 6EAP in its introduction. All the Directives dealing with the reduction of noise from cars, buses, motorcycles, tractors and lorries were already in place before the 6EAP. The most recent of these is Directive 2001/43/EC, which amends Directive 92/23/EEC relating to tyres for motor vehicles and their trailers, and to their fitting. For aircraft, the most recent Directive is Directive 2002/30/EC on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Community airports.

In addition, the Strategic Environmental Assessment (SEA) Directive (2001/42/EC) and the Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended by 97/11/EC) set procedural requirements to take noise pollution into consideration in development consents for plans and programmes (SEA) and projects (EIA).

Directive 2001/14/EC relating to noise emission from equipment for use outdoors was amended by Directive 2005/88/EC. This amendment results from the conclusion of the review process of the Directive by a Commission's working group which found that the noise reduction limits set for January 2006 were not technically feasible.

Assessing the outcomes against objectives

Most of the areas of priority action to reduce noise were already covered by a number of Directives before the 6EAP. Hence the focus ought to be on the 'further improvement' of these measures. From this point of view, there have hardly been any new legislative measures that would add to what already was in place before the 6EAP. The report reviewing existing legislation (COM(2004)160) confirms this. The Commission has not come up with any legislative proposals to reduce noise emissions further by July 2006, as required by Directive 2002/49/EC. At the same time recent studies have shown that the impacts of noise on health are more alarming than previously thought. For instance a recent study by WHO states that the noise threshold for cardiovascular problems is chronic night-time exposure of 50 decibels (dB) or above - the noise of light traffic.

3.3.7 Urban environment

The overall aim of the 6EAP with respect to the urban environment is to contribute to a better quality of life through an integrated approach, concentrating on urban areas. The specific priority actions called for in the 6 EAP is the production of a Thematic Strategy improving the quality of the urban environment, taking into account progress made in implementing the existing co-operation framework. The Programme also calls for the **promotion of Local Agenda 21**, the **reduction of the link between economic growth and passenger transport demand**, and a **modal shift towards public transport, rail, inland waterways, walking and cycling**. Other specific actions identified include the need to tackle rising volumes of traffic and to bring about a significant **decoupling of transport growth and GDP growth**, the need to **promote the use of low emission vehicles in public transport** and the consideration of **urban environment indicators**.

Concrete policy outputs

Prior to the 6EAP, Decision 1411/2001/EC established a **Cooperation Framework** to support networks of local authorities to achieve sustainable urban development. The framework in particular aimed to encourage the conception, exchange and implementation of good practices in the implementation of EU environmental legislation, sustainable urban development and Local Agenda 21. After the expiry of the Cooperation Framework, it is now LIFE+ that provides financial support to measures and projects linked to the urban environment.

The Commission's Interservice Group on Urban Development has drawn up a guide ⁽³⁵⁾ in May 2007, with the aim to increase the visibility of the urban dimension of all Community policies for the period 2007-2013 by identifying the initiatives under various policies with direct and indirect implications for the sustainable development of urban areas.

³⁵ http://ec.europa.eu/regional_policy/sources/docgener/guides/urban/index_en.htm#down

Most importantly, in January 2006, the Commission released the **Thematic Strategy on the urban environment** (COM(2005)718). The main measures covered by the strategy are guidance on integrated environmental management and sustainable urban transport plans and support for EU wide exchange of best practices.

According to the TS, an **integrated approach to environmental management** at the local level (and to transport in particular) is key to the successful implementation of environmental legislation and to achieving long lasting improvements in environmental quality and performance. Environmental Management Plans as well as Environmental Management Systems are important instruments in this context. The Commission was to provide **technical guidance** on integrated environmental management in 2006, drawing on experiences and giving good practice examples. Local authorities could use this guidance on a voluntary basis. As of September 2007, the Commission has not yet issued such guidance but its publication is expected shortly.

The Thematic Strategy strongly recommends to local authorities to develop and implement **Sustainable Urban Transport Plans**. Pursuant to the TS, effective transport planning requires a long-term vision to plan financial requirements for infrastructure and vehicles, to design incentive schemes to promote high quality public transport, safe cycling and walking and to co-ordinate with land-use planning at the appropriate administrative levels. To this end, the Commission will provide **technical guidance** on the main aspects of transport plans in 2006, based on the recommendations of the 2004 Expert Working Group, and give best practice examples. This document would not specify the measures that cities should adopt but invite local authorities to follow the guidance on a voluntary basis. At the time of writing the Commission had not issued such guidance but expected to publish it shortly after the publication on the Green Paper on Urban Mobility (which has been published on 25 September 2007).

As a key component, the Thematic Strategy has taken up the issue of wider exchange of best practice. The Thematic Strategy envisages:

- **Networking and Demonstration Projects**, supported through the new ERDF and LIFE+. Cohesion Policy and FP7 will offer similar opportunities as well as demonstration projects on a range of urban environment issues.
- A **Network of National Focal Points on Urban Issues** to provide structured and evaluated information on sustainable urban development
- A **Commission Internet Portal for Local Authorities** for accessible information
- **Training** for local and regional authorities.

Assessing the outcomes against objectives

The aims of the defunct Cooperation Framework were quite similar to those of the 6EAP in the field of the urban environment and the calls for proposals for the first year were closely linked to these aims. However, this changed and gradually the calls became more of a funding platform for the funding of working groups and stakeholder platforms for the development of the Thematic Strategy.

3.4 Natural resources and wastes

3.4.1 *Natural resources, waste prevention and waste recycling*

The achievement of a sustainable resource use is supported by a range of different policies, such as water policy, agricultural policy, waste policy, etc. This section nevertheless confines itself to strategies and legislation which focus on sustainable production (energy efficiency, eco-design, etc.) and the fostering of recycling and recovery as means of reducing primary resource use.

The 6EAP aims at 'achieving better resource efficiency and improved resource and waste management, to help bring about more sustainable patterns of production and consumption'. In particular the 6EAP aims to:

- Achieve the goal that consumption of resources and their associated impacts do not exceed the carrying capacity of the environment;
- Break the linkages between economic growth and resource use;
- Achieve a significant overall reduction in the volumes of waste generated through waste prevention initiatives, better resource efficiency and a shift towards more sustainable production and consumption patterns.
- Encourage re-use and for wastes that are still generated: the level of their hazardousness should be reduced and they should present as little risk as possible; preference should be given to recovery and especially to recycling.

These objectives shall be pursued taking into consideration the Integrated Product Policy (IPP) approach and the Community's strategy for waste management by means of following priority actions:

- Developing a thematic strategy on the sustainable use and management of resources;
- Developing and implementing measures on waste prevention and management;
- Developing a thematic strategy on waste recycling.

The specifically waste-related objectives (such as reduction of hazardous waste, emissions emanating from recycling or disposal, recycling standards) are not covered in this section but in section 3.4.2 below.

Resource/energy efficiency

With respect to **resource/energy efficiency** three Directives have been adopted: Directive 2005/32/EC on the eco-design of Energy-using Products (EuP), Directive 2006/32/EC on energy end-use efficiency and energy services and Directive 2004/8/EC on the promotion of cogeneration based on a useful heat demand in the internal energy market (Combined Heat and Power or CHP).

The **Energy-using Products** Directive aims to reduce the environmental impacts of products across the whole of their life cycle. It has been drawn up from the conviction that considering at the design stage a product's environmental impact throughout its whole life cycle has a high potential to facilitate environmental improvement in a cost-effective way. The Directive covers appliances such as electrical and electronic devices or heating equipment, provides coherent EU-wide rules for eco-design and ensures that disparities among national regulations do not become obstacles to intra-EU trade.

The Directive does not introduce directly binding requirements for specific products, but does define conditions and criteria for setting, through subsequent implementing measures, requirements regarding environmentally relevant product characteristics and allows them to be improved quickly and efficiently. The actual and binding measures defining energy performance, waste generation, water consumption, extension of lifetime standards will be taken on a product-by-product basis by the Commission under the supervision of a designated panel of EU Member State experts through a comitology procedure⁽³⁶⁾. An important aspect of the Directive's scheme is that voluntary agreements by industry will be given priority over regulation (implementing measures) if they fulfill certain requirements and are deemed to be more efficient. This will be assessed by the Commission at an early stage after it has consulted a special stakeholders' forum bringing together representatives of industry, member states and NGOs⁽³⁷⁾.

Directive 2006/32/EC on **energy end-use efficiency and energy services** is based on the estimate that the Union's energy consumption is approximately 20 % higher than can be justified on economic grounds. A part of these energy savings can effectively be realized through energy services and other end-use efficiency measures. According to the Directive the Member States shall adopt and aim to achieve an overall national indicative energy savings target of 9 % by May 2017, to be reached by way of energy services and other energy efficiency improvement measures. Member States shall take cost-effective, practicable and reasonable measures designed to contribute towards achieving this target.

Directive 2004/8/EC on **combined heat and power production** (see also section 3.1.3) encourages Member States to promote CHP up-take and help to overcome the current barriers hindering progress. It does not set targets, but instead requires Member States to carry out analyses of their potential for high efficiency co-generation. Member States shall for the first time not later than 21 February 2007 and thereafter every four years evaluate progress towards increasing the share of high-efficiency cogeneration. The Directive entered into force in February 2004. It was scheduled that Member States would have to transpose the Directive by 21 February 2006, however due to delays resulting out of the comitology process; Member States now have to fulfill the first obligations of the Directive by 6 August 2007.

Waste law with repercussions on resource use

Three Directives on waste have been adopted with repercussions on sustainable resource use: Directive 2002/96/EC on waste electrical and electronic equipment, Directive 2004/12/EC on packaging and packaging waste and Directive 2006/66/EC on batteries and accumulators.

Directive 2002/96/EC on **waste electrical and electronic equipment (WEEE)** refers in its recitals to the 5EAP but the Directive was passed after the 6EAP had come into effect. The Directive applies to a range of electrical and electronic equipment⁽³⁸⁾. Member States are to encourage the design and production of electrical and electronic equipment which take into account and facilitate dismantling and recovery, in particular the reuse and recycling of waste electrical and electronic equipment. Member States are to minimise the disposal of WEEE as unsorted municipal waste and are to set up separate collection systems for WEEE.

³⁶ The first implementing measures are expected to be issued in 2008, see http://www.eup-richtlinie.at/download/nov06workshop_stateofplay.pdf (1 October 2007).

³⁷ <http://www.euractiv.com/en/sustainability/eco-design-requirements-energy-products-eup/article-117467> (1 October 2007).

³⁸ See enumeration of electrical and electronic electronic devices at <http://europa.eu/scadplus/leg/en/lvb/l21210.htm> (1 October 2007).

In the case of electrical and electronic waste, Member States are to ensure that, as from 13 August 2005:

- final holders and distributors can return such waste free of charge;
- distributors of new products ensure that waste of the same type of equipment can be returned to them free of charge on a one-to-one basis;
- producers are allowed to set up and operate individual or collective take-back systems.

By 31 December 2006 at the latest, a rate of separate collection of at least 4 kg on average per inhabitant per year of waste electrical and electronic equipment from private households must be achieved. A new target rate to be set at a later date is to be achieved by 31 December 2008. Producers of electrical and electronic equipment must apply the best available treatment, recovery and recycling techniques. Waste treatment and storage must be in conformity with standards laid down in an Annex to the Directive.

Directive 2004/12/EC on **packaging and packaging waste** updated the recovery and recycling targets for packaging waste introduced by Directive 94/62/EC and set new recovery and recycling targets for the different kinds of packaging such as glass, paper and board, plastics, metals and wood, to be attained in 2008.

Directive 2006/66/EC on (waste) **batteries and accumulators** stipulates that all batteries will have to be collected separately and recovered throughout Europe and lays down corresponding collection targets. This measure effectively prevents harmful substances from waste batteries being introduced into the environment. The new Directive sets collection targets of 25 % and 45 % of the average sales figures for the previous three years for 2012 and 2016 respectively. Furthermore, when the national provisions implementing the Directive enter into force on 26 September 2007 at the latest it will in general no longer be permissible to use cadmium in portable batteries ⁽³⁹⁾. Exceptions apply for emergency and alarm systems, including emergency lighting, medical equipment, or cordless power tools.

Thematic Strategy on the sustainable use of natural resources

All Thematic Strategies that article 8 of the 6EAP foresaw have been issued. The Thematic Strategy on the sustainable use of natural resources is the core strategic piece, which provides a long-term framework for achieving the objective of de-coupling economic growth and resource consumption and – in the words of the Commission’s Mid term Review of the Strategy (COM(2007)225) – takes ‘the first steps towards making the EU the most resource-efficient economy in the world’ ⁽⁴⁰⁾. The Commission has, furthermore, opened a public consultation on how to make products more sustainable and lure shoppers towards low-carbon and more resource-efficient products ⁽⁴¹⁾. The consultation will feed into twin action plans that the Commission intends to launch in early 2008 on sustainable industrial policy and sustainable consumption and production.

The Thematic Strategy provides for the establishment of a **Data Centre for policy makers** to enhance and **improve the knowledge base** on resource use and its environmental impacts. This provision is based on the finding that a multitude of institutions at EU level collect data regarding resource use but the exchange of information is not always optimal and the data are not accessible to policy makers in a usable format.

³⁹ The use of mercury in batteries was already forbidden by earlier legislation.

⁴⁰ See the Commission’s Midterm Review of the 6EAP, COM(2007)225, p. 9

⁴¹ See [http://www.euractiv.com/en/sustainability/eu-weighs-options-greener-consumption-production/ article-166013](http://www.euractiv.com/en/sustainability/eu-weighs-options-greener-consumption-production/article-166013) (17 September 2007).

A set of **indicators** will be developed which build on the substantial work already undertaken in the fields of environmental accounting, material flow accounting and life cycle inventories. By 2008, the Commission will develop:

- Indicators to measure progress in efficiency and productivity in the use of natural resources;
- Resource-specific indicators to evaluate how negative environmental impacts have been decoupled from resource use; and
- An overall indicator to measure progress in reducing the ecological stress of resource use by the EU (eco-efficiency indicator).

The Thematic Strategy leaves the choice of which instruments to use to implement the Thematic Strategy to the Member States. The Thematic Strategy proposes that each Member State develop national measures and programmes on the sustainable use of natural resources to achieve the objectives of the TS. In order to facilitate the development of these national measures, the Commission will set up a High-Level Forum. Additionally, the Commission will analyse measures taken by the Member States to determine which ones are suitable to apply at the EU level (especially market based incentives).

At the international level, the Thematic Strategy envisages the establishment of an International Panel on the sustainable use of natural resources in cooperation with UNEP and possibly other international partners and initiatives, e.g. United Nations Industrial Development Organisation (UNIDO) and the International Energy Agency (IEA).

Thematic Strategy on prevention and recycling of waste

While the 6EAP foresaw two waste strategies, one for prevention/management and another for recycling, the Commission published a single Thematic Strategy encompassing both recycling and prevention. The Thematic Strategy was released alongside with a proposal for a revision of the Waste Framework Directive which is related to the natural resource use targets. The Thematic Strategy underlines the life cycle approach advocated in the Thematic Strategy on the use of natural resources, highlights the importance of reinvigorating the initiatives on eco-design and places much value on the full implementation of existing legislation, particularly in the field of landfills.

The proposal to **modernise** the 1975 **Waste Framework Directive** (75/442/EEC, recently codified as 2006/12/EC), includes the following attributes:

- Focussing waste policy on improving the way resources are used;
- Mandatory national waste prevention programmes that take into account the variety of national, regional and local conditions, to be finalised three years after the entry into force of the directive;
- Improving the recycling market by setting environmental standards that specify under which conditions certain recycled wastes are no longer considered waste but secondary products; and
- Simplifying waste legislation by clarifying definitions (especially waste versus secondary raw material), streamlining provisions and integrating the Directives on hazardous waste (91/689/EEC) and on waste oils (75/439/EEC), the latter with a focus on collection rather than on regeneration, which the Commission considers no longer justified from an environmental point of view.

The **life-cycle approach** will be incorporated in EU legislation by clarifying the objectives of the Waste Framework Directive so that they explicitly consider the life-cycle perspective. This will have significant consequences for framing new policy and for waste management principles and practices in the future. The recent review of recycling and recovery targets for packaging waste materials was the first example of using life-cycle thinking for policymaking. Life-cycle thinking requires an improved knowledge base on the impact of resource use, waste generation and management and more systematic forecasting and modelling.

The Member States' obligations to develop publicly available **waste prevention** programmes should be clarified. These are included in the proposal for a new Waste Framework Directive. At EU level the Commission will promote the use of the IPPC Directive, IPP and other tools to encourage the spread of best practice. The Strategy does not lay down concrete reduction targets as, the Commission argues, this may not be the most effective and eco-efficient way to foster waste prevention.

To ensure the proper functioning of the internal market for recycling and to prevent eco-dumping, the strategy proposes to set **minimum standards for recycling activities and recycled materials** in order to guarantee a high level of environmental protection. This approach is also intended to raise the demand for recycled materials. These reference standards will be realised via amendments to the Waste Framework Directive and the IPPC Directive. A new definition of recovery and disposal activities is proposed in order to promote best environmental practice. To this end, efficiency levels will be introduced to distinguish recovery operations from disposal activities.

Building on the implementation of existing EU waste legislation, **new ways to foster recycling** will be sought. A detailed analysis of the long-term feasibility and viability of a material-specific approach will be undertaken. No new stream-based recycling Directives are planned. Member States will also be encouraged to make more use of economic instruments and to exchange experience/best practice through improved coordination in the Waste Management Committee.

The Strategy attaches much importance to the **diversion of biowaste from landfills** in accordance with the targets set in the Landfill Directive and acknowledges that a number of Member States will not be able to meet these targets. The Commission will produce guidelines on applying life-cycle thinking to management of biowaste and will communicate these guidelines to Member States and invite them to revise their national strategies. However, the Thematic Strategy recognises that the strategies to divert biowaste from landfills have to be determined by the Member States, taking into account the different regional particularities and using life-cycle thinking. Furthermore, compost quality criteria will be adopted under the end-of-waste provision proposed for the Waste Framework Directive, and the Commission will propose that biological treatment of waste be brought under the scope of the IPPC Directive when it is revised.

The Strategy also announces that the sewage sludge Directive 86/278/EEC will be revised to tighten the quality standards to allow sewage sludge use, following the adoption of the Thematic Strategy on soil and the associated measures.

Assessing the outcomes against objectives

Break the linkages between economic growth and resource use

The **Thematic Strategy of sustainable use of natural resources** is obviously considered by the Commission to be the main policy output based on the ‘natural resources’ chapter of the 6EAP (42). Yet, this Strategy does not include quantitative targets for the diminution of resource use and resource efficiency as prescribed by the 6EAP. No concrete legal targets have been formulated at the European level to decouple economic growth from resource use. Even so, the Strategy requests the Commission to develop a database and criteria to measure and assess resource use (see section 4.6).

As to actual developments, a report from the European Environment Agency (2005) has described some relative de-coupling of economic growth from materials and energy consumption in many EU countries during the past decade (43). However, this did not necessarily lead to an absolute decrease in environmental pressures, because absolute resource use has generally remained steady over the past two decades. In part, this de-coupling may be due to increased imports of natural resources, substituting for their declining production or extraction in Europe. The substitution of domestic reduction with imports takes some strain off the European environment, and results in a relative decoupling in terms of mass balance. However, some environmental experts point out that this means that environmental pressures associated with resource extraction occur in the country of origin of the commodity (44).

The EEA’s assessment of the EU’s Natural Resource Policy based on the 6 EAP is rather sobering: ‘Formulation of the resource policy is at an early stage. Guiding principles such as de-coupling, eco-efficiency and resource productivity have already been introduced by the Johannesburg plan for implementation, the EU sustainable development strategy, and the 6EAP. However, those principles are fairly general in nature, and in addition to declaring strategic preferences, it may be necessary to formulate concrete objectives and measurable targets’ (45).

Achieve the goal that consumption of resources and their associated impacts do not exceed the carrying capacity of the environment

The **Thematic Strategy of sustainable use of natural resources** does not commit to reducing resource consumption, except to state that for renewable resources this means staying below the threshold of overexploitation. While the 6EAP called for the Strategy to include the development and the implementation of a broad range of instruments including research, technology transfer, market-based and economic instruments, programs of best practice and indicators of resource efficiency, the Thematic Strategy clearly fails to meet these objectives. It merely provides a framework for further attempts to meet them in the future.

⁴² See as evidence for this the EU’s website covering the 6EAP where with regard to natural resources only a link is given to the Thematic Strategy.

⁴³ EEA, Sustainable use and management of natural resources, 2005.
http://reports.eea.europa.eu/eea_report_2005_9/en/EEA_report_9_2005.pdf.

⁴⁴ Ibidem, p. 5 and 23.

⁴⁵ Ibidem, p. 61.

Furthermore, it is unclear whether the initiatives announced in the Thematic Strategy will result in any real changes in how natural resources are used in the EU, and the negative environmental impacts associated with this resource use (46). As a result, there is no clear indication as to how to measure and prevent resource consumption exceeding the carrying capacity of the environment.

Achieve a significant overall reduction in the volumes of waste generated

The Thematic Strategy on waste recycling and prevention states that **waste prevention** is basically the affair of the Member States which will be required to develop waste prevention programmes that will 'reach out to the individuals and businesses' responsible for waste generated in the first place. This instrument is also foreseen in the proposal for a new Waste Framework Directive (COM(2005)667) .

Neither does the Strategy lay down concrete measures nor targets for waste prevention at the EU level but it refers to the implementation of the IPPC Directive and the use of Best Available Techniques to reduce waste and, even more importantly, delegates concrete implementation of prevention to the Member States.

Some waste prevention will be indirectly achieved by the shift towards more sustainable production and consumption patterns as e.g. envisaged by the EuP Directive. Manufacturers of energy-using products will, at the design stage, be obliged to reduce the energy consumption and other negative environmental impacts such as waste generation occurring throughout the product life cycle.

Encourage re-use, recovery and recycling of waste

Re-use and recovery/recycling have been encouraged in a series of specific recycling/recovery targets in Directives that cover specific streams of waste. Some of these Directives have been issued before the 6EAP came into force (such as the End-of Life Vehicles Directive (2000/53/EC) and the Directive on packaging waste (2004/12/EC)) with new recycling targets set in 2004), some afterwards such as the new Batteries Directive (2006/66/EC) or the WEEE Directive (2002/96/EC).

While these stream-based recycling Directives lay down recovery and recycling targets, there is no concrete reuse target.

For example, the packaging directive sets obligatory recycling targets concerning packaging waste for 2008, stipulating that between 55 % and 80 % as a minimum by weight of packaging waste will be recycled and 60 % as a minimum recovered. In 2004 the EU-25 average rate of packaging recovery and incineration at waste incineration plants with energy recovery was 65.6 %, and the average recycling rate was 53.9 % (47). Thus, the rates for the EU area are already close to fulfilling the targets while the level of the national rates vary considerably between Member States some remaining still far from attaining the objectives.

⁴⁶ Similar criticism has been made by the German Federal Environmental Agency, see <http://www.umweltbundesamt.de/ressourcen/ressourcenstrategie.htm> .

⁴⁷ <http://ec.europa.eu/environment/waste/packaging/data.htm> (24 August 2007).

It is, however, open to question in what measure the Directive on Packaging Waste influenced the recycling rate as the 2008 targets were set in 2004 while the recycling rates in EU-15 were already approximately the same (for 2003: recycling rate 54.1 %, recovery rate: 66.9 %). The targets will be of high practical importance for the countries which acceded to the EU in 2004 and 2007 (48).

While there are concrete recycling targets in the stream-based waste directives, there is still no concrete 'general' recycling target for all waste (including e.g. mixed municipal waste, etc.).

Reasons for gaps

The Commission did not set quantitative targets for 'resource efficiency and the diminished use of resources' as prescribed by the 6EAP because it is – according to the Commission's own arguments – not possible to do so in the current state of knowledge and development of indicators. Neither the data underpinnings nor the indicators allow targets to be set that would clearly serve the purpose of reducing environmental impacts in a growing economy. The Strategy does, however, set a process in motion which could make possible this reduction over the years to come.

No general target for waste prevention and recycling of waste (for the latter: apart from the waste streams subject to specific directives) has been proposed so far by the Commission. According to the Commission there are no waste prevention targets because of the complexity of the parameters which have an influence on waste generation and its reduction, such as product design, manufacturing processes and consumer habits. Furthermore, waste prevention targets are supposed not to be the most effective and eco-efficient way to foster waste prevention as for example the weight of some waste stream could be reduced, yet the environmental impact increase (49). Therefore, the Commission relies on national waste prevention programs as well as IPPC permitting schemes and Integrated Product Policy to contribute to waste prevention.

As for waste recycling, the Thematic Strategy on waste recycling and prevention announces that the review of this strategy will assess the need for further measures to promote recycling. Neither a general waste recycling target nor additional stream-based Directives are announced. Additional stream-based Directives are considered to be too big an administrative burden for smaller waste streams or streams with a minor environmental impact.

3.4.2 Developing or revising legislation on waste

The development and revision of legislation on waste is one of three priority action pillars by means of which the Commission envisages to pursue its objectives with regard to waste prevention, recovery, and disposal. These objectives comprise, more precisely, a reduction in the volumes of waste; better resource efficiency; more sustainable production and consumption patterns; lower volumes of hazardous wastes and wastes going to disposal; an increase in the re-use of wastes; a decrease in their hazardousness; and an increased proximity of the place of treatment to the place of generation where feasible.

⁴⁸ For some of these new Member States Directive 2005/20/EC postpones the attainment of the 2008 targets until 2012 for seven Member States, and until 2013, 2014, and 2015 for one Member States in each of these years.

⁴⁹ See Thematic Strategy on Waste Recycling and Prevention, COM(2005) 666, p. 17.

According Article 8(2)(iv) of the 6EAP Decision, priority areas of the development and revision of legislation on waste therefore include, inter alia, the development of legislation in the field of construction and demolition waste and biodegradable wastes; a revision of legislation in the fields of sewage sludge, packaging, batteries, and waste shipments; and a 'clarification of the distinction between waste and non-waste and the development of adequate criteria for the further elaboration of Annex IIA and IIB of the Framework Directives on wastes'.

Concrete policy outputs

No new legislation has been developed on **construction and demolition waste**. As a result, the European Parliament has adopted a report in December 2006 (A6-0438/2006) as well as a resolution in February 2007 (P6_TA(2007)0030), calling on the Commission to develop a separate Directive for construction and demolition waste. In the meantime, these wastes remain subject to the general requirements of the Waste Framework Directive. Furthermore, some of them fall under the Hazardous Waste Directive.

Even though the Commission committed itself at multiple occasions to develop a legislation dedicated to **biodegradable wastes** by the end of 2004 ⁽⁵⁰⁾ this intention was abandoned in 2004 on the grounds that Member States should be able to determine themselves how to comply with the Landfill Directive (1999/31/EC). The most important piece of legislation in this field therefore remains the Landfill Directive which obliges Member States to reduce the amount of biodegradable waste that they landfill to 35 % of 1995 levels by 2016. The subject has, however, been included in the Thematic Strategy on the prevention and recycling of waste, which states the Commission's intention to prepare guidelines for policy makers on the application of life-cycle thinking to biodegradable waste management policies. The Thematic Strategy states furthermore the need for waste standards to be addressed at EU level and provides that compost quality criteria will be adopted under the Waste Framework Directive. Finally, it states that the biological treatment of waste is to be brought within the scope of the IPPC Directive (96/61/EC) when it is revised. The Commission will revisit the issue of biodegradable waste in the review of the Thematic Strategy on waste prevention and recycling in 2010. In the meantime, the European Parliament continues to call on the Commission to introduce a Directive dedicated to this subject, most recently in its resolution adopted in February 2007 on the Thematic Strategy on waste recycling (P6_TA(2007)0030).

Up to this point no revision of the **Sewage Sludge** Directive (86/278/EC) has taken place. The issue has, however, been taken up in the Thematic Strategy on waste prevention and recycling which stresses the need for a revision in order to tighten the quality standards under which sewage sludge can be used in agriculture. According to the Strategy, the Directive will be revised following the adoption of the Thematic Strategy on Soil.

The 1994 **Packaging Waste** Directive (94/62/EC) was revised as envisaged in the 6EAP by Directive 2004/12/EC with the main aim of clarifying the definition of the term 'packaging' and to establish new recycling and recovery targets. Recovery by weight has to increase to 60 % and recycling to 55 % of weight by December 2008 with material-specific minimum rates.

In accordance with the 6EAP the original **Batteries** Directive (91/157/EEC) was replaced by Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators. It was the main aim of this revision to widen the scope of the Directive and to include collection targets for Member States.

⁵⁰ See COM(2002)179, April 2002 and the Animal By-Products Regulation (1774/2002), 3 October 2002.

Also in accordance with the 6EAP, Regulation (EC) No 259/93 on supervision and control of the **shipment of waste** was revised and replaced by Regulation (EC) No 1013/2006 on shipments of waste. The new Regulation, which replaces its predecessor Regulation since 12 July 2007, incorporates into Community law the amendments made to the lists of waste annexed to the Basel Convention but also aims at reinforcing, simplifying, and specifying existing procedures so as to reduce the risk of shipments not being controlled. Indeed, reports from the IMPEL TFS Seaport Project II of June 2006 and its predecessor Seaport Project I have shown that a large number of shipments leaving the EU do not comply with applicable EU legislation (⁵¹). The Commission has therefore organised eight 'Information Exchange and Awareness Raising Events on Shipments of Waste' between January and May 2007 to improve the implementation of the Regulation.

The issue of **clarifying the distinction between waste and non-waste** falls under the Thematic Strategy on the prevention and recycling of waste which names as its first step the need to revise the Waste Framework Directive 2006/12/EC (the codified version of the original Directive 75/442/EEC) in order to set recycling standards and to oblige Member States to develop national waste programmes. The proposal for a revised directive does not change the definition of waste but strives to clarify the distinction between waste and non-waste by introducing a mechanism to determine when certain wastes cease to be waste by specifying environmental and quality criteria through a comitology process. For further clarification in the meantime, the Commission published guidelines (COM(2007)59) in February 2007 on the issue of waste and by-products based on the interpretation of the existing law by the European Court of Justice.

The issue of **developing adequate criteria for the further elaboration of Annex IIA and IIB of the Waste Framework Directive** also falls under the Thematic Strategy on the prevention and recycling of waste. The proposal for a revised Waste Framework Directive bases the distinction between disposal and recovery on the genuine difference in environmental impacts and on the question whether the process leads to a substitution of natural resources. Furthermore it establishes efficiency criteria for cases of difficult distinctions and contains a procedure that allows for the clarification of the classification via a comitology process if necessary. Annex IIA (Disposal Operations) is proposed to become Annex I and Annex IIB (Recovery Operations) would become Annex II.

Assessing the outcomes against objectives

Overall, the outcome of the actions declared in Article 8(2)(iv) of the 6EAP Decision, are mixed for the period of 2002 to 2007:

- No new legislation has been developed on construction and demolition waste and on biodegradable wastes.
- The Directives on packaging waste, batteries and waste shipments have been revised as planned. The Sewage Sludge Directive has not yet been revised.
- Attempts have been made to clarify the distinction between waste and non-waste and other issues in the context of the revision of the Waste Framework Directive.

For three waste streams identified in Article 8(2)(iv) of the 6EAP the existing legislation has been revised, just as envisaged. However, the revision of the legislation on sewage sludge has been delayed and plans for new legislation on other waste streams have effectively been abandoned against the advice of the European Parliament. The final outcome of the revision process of the Waste Framework Directive is still unknown.

⁵¹ http://www.sharedspaces.nl/docs/internationaal/eindrapport_europees_zeehavenproject.pdf.

It is therefore difficult to evaluate the changes brought about by legislative initiatives since the 6EAP as it is generally too early at this stage to evaluate their results.

The original **Batteries** Directive (91/157/EEC) had a limited scope as it only applied to batteries containing mercury, lead or cadmium, and excluded button cells and therefore only covered 7 % of all portable batteries. Applying to all batteries, except those used in connection with security interests and in space equipment, the new Directive 2006/66/EC has a wider range than its predecessor. Furthermore it introduces minimum collection rates for Member States of 25 % in 2012 and 45 % in 2016. This revision of existing EU legislation in this area can therefore be expected to contribute to the overall environmental goals of Article 8.

Besides a clearer definition of the term 'packaging', the revised **Packaging Waste** Directive 2004/12/EC has introduced new and more ambitious recovery and recycling targets. It should be noted, however, that in the light of recent judgements by the European Court of Justice stating that incineration would have to be regarded as a disposal operation, it was agreed in the revised directive that incineration can nevertheless count towards the recovery target if it takes place in incineration plants with energy recovery. Overall though, it can be expected that the revision of the directive will contribute to the general environmental goals of Article 8.

The revision of the **Waste Shipment Regulation** is in accordance with the 6EAP as a revision was announced in Article 8(2)(iv) it remains to be seen to what extent the revision is in line with the environmental objectives of the 6EAP. At this point it is difficult to determine whether the main goal, which was to simplify procedures, will actually materialise and contribute to the achievement of the overall environmental objectives.

4 ROLE AND CONTRIBUTION OF THEMATIC STRATEGIES

4.1 Introduction

A major innovation of the 6EAP is the introduction of the Thematic Strategies as a second-order, more specific programming instrument under the overall umbrella of the Programme and a means of ‘consider[ing] the range of options and instruments required for dealing with a series of complex issues that require a broad and multi-dimensional approach’ (6EAP Decision, Recital 16). In its Communication on the ‘Global Assessment’ of the 5th Environmental Action Programme, the Commission announced that the next programme ‘would set general objectives that will need to be translated into quantifiable targets to steer the development of both environmental measures and the strategies in the economic sectors.’ (COM(1999)543, p. 25) In its actual proposal for a 6EAP (COM(2001)31), the Commission indeed focused on general objectives, and, with a few exceptions, refrained from proposing any quantifiable targets. Some targets (e.g. for waste prevention and noise reduction) are mentioned in the introductory Communication, but omitted from the proposal for a decision.

Effectively, this Communication suggested that the target-setting process be deferred until after the adoption of the 6EAP, in ‘thematic strategies’ to be elaborated later for a range of priority issues. In these strategies, the targets themselves ‘will be determined on the basis of sound scientific and economic cost-benefit analysis and on open dialogue and consultation with the various parties concerned.’ After considerable debate, this approach was largely endorsed by the Council and the European Parliament in the 6EAP Decision, which contains only a few quantified targets but provides that the Thematic Strategies ‘*may include ... relevant qualitative and quantitative environmental targets against which the measures foreseen can be measured and evaluated.*’ (Art. 4(2) – emphasis added)

Thus, **the Thematic Strategies** were introduced in Article 4 of the 6EAP Decision as one of the main tools for implementing the Programme. Overall, the 6EAP provides for Thematic Strategies to be drawn up for seven themes: air pollution, waste recycling and prevention, marine environment, soil protection, sustainable use of pesticides, sustainable use of resources and urban environment. However, not all ‘key environmental priorities’ are to be addressed by Thematic Strategies. The 6EAP includes many objectives and actions that fall outside the scope of these strategies and for which the programme itself is considered to provide sufficient guidance.

According to the 6EAP, Thematic Strategies ‘should include an identification of *the proposals that are required* to reach the objectives set out in the Programme and *the procedures foreseen* for their adoption.’ (Art. 4(1)) In other words, these Strategies were originally envisaged not as an end in themselves, but as a mere framework for the selection, development and subsequent adoption of a set of discrete measures. In the case of those Thematic Strategies that do not include proposals for any legislative measures, but instead focus on formulating recommendations for national action and soft forms of cooperation at EU level, **a tendency has developed to view these Strategies as proper policy instruments in their own right**, hence as policy outcomes rather than as a basis for further, more specific proposals.

At any rate, the Thematic Strategies represent a radically new approach to policy development. Since they are focused on cross-cutting environmental issues and problems, rather than sectors (as in the 5EAP), they have had to address difficult issues of horizontal integration (between sectors) and vertical integration (between levels of government). Accordingly, they have been developed through a network of working groups involving a range of Commission Directorates-General (DGs) and Member State experts as well as stakeholders, albeit to a varying degree.

This sharing of responsibility for developing the EU's environment policy has probably broadened the sense of 'ownership' of the policy throughout the Commission services, but, at the same time, the protracted search for consensus has required a significant dilution of environmental ambitions.

Though the 6EAP provides that the Thematic Strategies were to be presented to the European Parliament and the Council within three years of its adoption, this deadline has not been met for any of them. The delays in the policy-making process compromise the prospect of actually achieving the objectives of the 6EAP, all the more so since the programme provides that initiatives to this end should have been presented at the latest four years after its adoption, i.e. by the end of July 2006.

One reason for the delay has been the concern of Commission President Barroso and Vice President Verheugen that the Thematic Strategies would increase industrial costs and damage the EU's global competitiveness. As a result, in late July 2005, Environment Commissioner Dimas was obliged to defend the strategies – in effect the entire future of the EU's environment policy – in front of his Commissioner colleagues. As a consequence of the political debate and subsequent decision-making process within the Commission, the detailed definition of specific objectives and measures, which was originally intended to be the primary purpose of the Thematic Strategies, was often abandoned, further postponed, or left to the Member States. This happened notwithstanding Article 4(2) of the 6EAP Decision, which refers to the inclusion of 'relevant qualitative and quantitative targets and timetables against which measures foreseen can be measured and evaluated'.

In the following sections of this chapter, we shall discuss each of the seven Thematic Strategies elaborated pursuant to the 6EAP, the process of its development, its content as well as the prospects for its implementation and likely effectiveness, and compare these with the relevant objectives laid down in the 6EAP.

4.2 Air pollution

Development of Thematic Strategy

The Thematic Strategy on air pollution (COM(2005)446), was submitted to the Council and the European Parliament on 21 September 2005, i.e. more than three years after the adoption of the 6EAP.

The Thematic Strategy on air pollution was developed through a transparent, consultative and scientific process, utilising e.g. cost-benefit analysis as a basic approach. Air pollution is a complex issue, with local and transboundary contributions to any observed effects, with several pollutants contributing and interacting. In addition there are strong synergies and antagonies between air and e.g. climate change problems. Therefore the Thematic Strategy was built upon integrated assessment of various effects, and sought for the most cost-effective solutions for the chosen level of objectives. The Clean Air for Europe (CAFE) Programme, through which the Strategy was developed, was scientifically based on the results of seven research contracts, utilising the knowledge in various spheres, such as the WHO for health effects and IIASA for integrated modelling. Interaction with the work under the CLRTAP was also intense. The Commission established five working groups to oversee the preparation of the various elements of the Strategy, such as the scenarios, the modelling, and the target setting and for Member State policy level participation. Over 100 stakeholder meetings were held during the CAFE process. In addition there was a two-month open web-based consultation on the contents and objectives, receiving over 11,500 responses, of which over 10,000 from individuals.

Contents of the Thematic Strategy

The Thematic Strategy proposes to streamline existing provisions and merge five legal instruments into a single Directive, to introduce new air quality standards for fine particulate matter (PM_{2.5}) in air, to amend the National Emissions Ceiling (NEC) Directive (2001/81/EC) and is also to be implemented through the integration of air quality concerns into other policy areas. For more details on the contents of the Thematic Strategy see section 3.3.5.

Implementation and effectiveness of the Thematic Strategy

In connection with its annual Environment Policy Reviews, the Commission has briefly reported on progress on 16 February 2006 (COM(2006)70) and 30 April 2007 (COM(2007)195), but this reporting must be considered rather cursory.

Thematic Strategies can have effects either directly or through the chain of implementation measures (e.g. Directives → national legislation → implementation of national legislation e.g. in permits → action taken by polluters). During the 1980s and 90s acidification was high on the agenda and e.g. energy producers anticipated air pollution policies when investing in new power plants, switching fuel or investing in abatement technologies, i.e. there were direct effects from the international level. For the Thematic Strategy on air pollution direct effects are unlikely, because other policies, e.g. climate change, dominate the anticipations of the energy, industry and transport sectors. The effectiveness of the strategy will thus be dependent on its implementation through specific air Directives and their national implementation and through the integration of air quality concerns into other policy areas.

The Proposal for a Directive on Ambient Air Quality (COM(2005)447) was presented by the Commission in September 2005. The Commission assessed that the combined amendments by the Parliament would result in a *lower level of ambition* than the original proposal. The 25 PM_{2.5} µg/m³ concentration cap for 2010 has been changed to a non-binding target value at the same level in 2010 and a legally binding limit value in 2015.

A proposal for a new NEC Directive is now expected early 2008, as coordination with climate and energy policies, including related modelling, has prolonged the process. Thus the preparation of this Directive *has been delayed*. The proposal will set emission ceilings to be achieved by 2020 for the four already regulated substances, and probably for the primary emissions of PM_{2.5}.

The following observations can be made regarding integration of air quality concerns into other policy areas:

- When considering **energy policies** renewable energy and energy efficiency are higher on the political agenda than ever before, and this will also assist in achieving some of the goals of the Strategy. The explicit considerations of air emissions or the goals of the strategy are few, as the Communication 'An Energy Policy for Europe' (COM(2007)1) only includes a reference to air pollution and quality: 'Renewable energies emit few or no greenhouse gases, and most of them bring significant air quality benefits.' The public consultation on biofuel issues in the new policies for the promotion of renewable energy during spring 2007 included no questions related to air emissions although other issues, e.g. biodiversity are included. Thus the integration in this most crucial sector is at the most weak, and possibly even non-existing. This is definitely a drawback, as the influence on cost and benefit calculations is huge because of synergistic effects of climate and air policies. There are on the other hand important antagonistic effects, as increased biofuels utilisation will lead to higher particulate, PAH and VOC emissions, greatly influencing local air pollution and resulting health effects.

- **Transport.** In the Communication from Commission ‘Keep Europe moving - Sustainable mobility for our continent’, which is a mid term review of the Commission’s 2001 Transport White Paper (COM(2006)314), air quality and air emissions are well integrated. It makes explicit reference to the Thematic Strategy on air pollution and its requirements. The proposed actions are, however, pretty vague. In its Communication the Commission proposes to ‘stimulate a wide ranging debate on transport scenarios with a 20 to 40-year time horizon, to develop tools for an overall sustainable transport approach.’ The Euro V proposal for cleaner cars, with quantitative reductions for PM and NO_x, was given in December 2005 and it was adopted by the Parliament in December 2006. It will enter into force in 2009. Euro VI is under preparation and takes the CAFÉ and Thematic Strategy as its starting point, this stage will mainly address the reduction of ozone precursors (NO_x and HC) and particulate matter (PM). Euro VI is expected to come into force in 2014. Also the Green Paper ‘Towards a future Maritime Policy for the Union: A European vision for the oceans and seas’ (SEC(2006)689) makes explicit references to the Thematic Strategy when defining air emissions as a challenge. Thus integration is taking place at both strategy and directive level.
- **Agriculture.** Air pollution management or air policy elements were not found when scanning the CAP and its instruments. Integration in this sector, important when considering e.g. ammonia emissions contributing to both acidification and eutrophication, and creating also other local nuisances, seems to be lacking.
- There are indications that the Commission is giving lower priority to **cooperation with the CLRTAP**. This is not in line with the goals of the Thematic Strategy and counterproductive, as countries outside the EU measurably influence air quality in Member States, and work under the Convention provides much relevant scientific information.

4.3 Marine environment

Development of Thematic Strategy

On 24 September 2005 the Marine Thematic Strategy was published. This was two months after the July 2005 deadline for submission of the TSs in the 6EAP. Accompanying the Marine Thematic Strategy was a proposal for a Marine Strategy Directive.

As a first step towards the development of the Strategy, the Commission adopted, in September 2002, a Communication entitled ‘Towards a strategy to protect and conserve the marine environment’ (⁵²), which was highly welcomed at a first Stakeholder Conference organised by the Commission jointly with the Danish EU Council Presidency in Køge on 4-6 December 2002 (⁵³). In March 2003 (⁵⁴), the Environment Council considered that the Communication established a good basis for further development of Community action for marine protection and conservation. The Commission then established a mechanism for consulting national authorities and stakeholders. This mechanism also served as a means to enhance coordination of activities of regional and other international bodies involved in marine protection. The second Stakeholder Conference, organised by the Commission jointly with the Dutch EU Council Presidency in Rotterdam on 10-12 December 2004, marked the end of the consultation process.

⁵² COM(2002) 534, 02.10.2002.

⁵³ http://www.eu2002.dk/news/news_read.asp?iInformationID=25706

⁵⁴ Conclusions of Environment Council 2491 Meeting, Brussels 4 March 2003 (6677/03 Presse 54)

At the Environment Council on 20 December 2004 ⁽⁵⁵⁾, Ministers underlined the importance of attaining a balance between sustainable use, protection and conservation of the marine environment. The Council also took note of the Commission's intention to come forward with a Green Paper on Maritime Policy and stressed therefore the need for synergy between the Thematic Strategy for the protection and the conservation of the marine environment and the Green Paper. They further stressed the need to address more fully the importance of a strong integration and coherence of policies relevant to the marine environment, required at all levels of management and for all programmes and activities impacting on marine environment.

The Council also underlined that for the further development and implementation of the Strategy, it will be essential that non-EU countries bordering the regional European seas share the common vision of the EU. This specifically relates to the Strategy's principles, goals and related objectives; but also to the neighbours' active participation in the Strategy's further development, and the sharing of responsibility for its implementation. Transparency, openness, public awareness, communication and education were also highlighted as important elements in the development and implementation of the Strategy, as were the implementation and enforcement of EU legislation such as the Water Framework Directive, the Habitats Directive and others.

Contents of Thematic Strategy

The Thematic Strategy is to be taken forward through a new legislative proposal, rather than revising existing law. The proposed Marine Strategy Directive (MSD) contains timetables and targets. However, these are best described as semi-quantitative in that the quantitative elements are largely to be developed by the Member States as they characterise marine waters and develop programmes of measures to deliver 'good environmental status'.

The aim of the MSD is to achieve 'good environmental status' in the marine environment by 2021 at the latest. This is to be achieved through the development and implementation, by each of the relevant Member States, of one or more marine strategies for their territorial waters. For more details on the MSD see section 3.2.7.

Implementation and effectiveness of the Thematic Strategy

The proposed MSD is currently being debated by Parliament and Council (at the time of writing it has been considered by the Environment Committee in preparation for the Parliament's second reading). As a result, there has been no implementation and judgement of any effectiveness would be premature.

4.4 Waste recycling and prevention

The Thematic Strategy on the prevention and recycling of waste was adopted on 21 December 2005 alongside a proposal for an amended Waste Framework Directive (COM(2005)667) and an impact assessment. Contrary to the concept of the 6EAP, which envisaged two different strategies – one for waste prevention and management and another for waste recycling – only one strategy covering waste prevention and recycling has been issued ⁽⁵⁶⁾. The Thematic Strategy is based on extensive consultation with stakeholders and concentrates on the issue 'waste as a resource'.

⁵⁵ Conclusions of Environment Council 2632 Meeting, Brussels 20 December 2004 (10596/04 Presse 357)

⁵⁶ See viewpoint of the European Federation of Waste Management and Environmental Services on this approach: http://www.fead.be/docs/FEAD_POSITION_PRecyclStrategy_WastePolicy_130406.pdf (1 October 2007).

Contents of the Thematic Strategy

The Thematic Strategy *inter alia* aims to analyse and assess EU waste policy, simplify and clarify the current legal framework in line with the EU's better regulation objectives and aims to set objectives and outline the means by which the EU can move towards improved waste management (especially waste recycling and more generally recovery) and waste reduction.

Therefore the Thematic Strategy proposes amongst others to modernise the Waste Framework Directive (as codified in 2006), to incorporate the life-cycle approach in EU legislation, to clarify Member States' obligations to develop waste prevention programmes, to set minimum standards for recycling activities and recycled materials, to seek new ways to foster recycling, to encourage the diversion of bio waste from landfills and to revise the Sewage Sludge Directive (86/278/EC). For more details on the contents of the Thematic Strategy see section 3.4.1.

Implementation and effectiveness of the Thematic Strategy

The Thematic Strategy is intended to address a good part of the policy objectives contained in Article 8 of the 6EAP Decision, especially Article 8(2)(ii) (waste prevention/ management), Article 8(2)(iii) (waste recycling), and Article 8(2)(iv) (development and revision of waste legislation). Apart from the clearly waste-related objectives, the Thematic Strategy also contributes to resource-based objectives, i.e. to ensure that the consumption of resources and their associated impacts do not exceed the carrying capacity of the environment and breaking the linkages between economic growth and resource use, as mentioned in Art. 8(1)(1).

While Article 8(2)(ii) foresees the development and implementation of measures on waste prevention and management, the Thematic Strategy is to a large extent dedicated to the further development of **recycling and recovery**, including setting recycling standards, promoting life cycle thinking and creating a level playing field for recycling and the marketing of recycled materials. The issue of waste prevention is mainly left to the individual policies of the Member States. The proposal for a new Waste Framework Directive requires Member States to develop national waste prevention programmes. On the other hand, at the European level the Strategy counts on existing instruments, such as the IPPC permitting system and IPP, to contribute to the prevention of waste. While in principle the Thematic Strategy attaches much importance to this approach to reduce waste, a clear definition of the life-cycle approach is lacking in both the Strategy and the proposal of a new Waste Framework Directive. As a result, the Thematic Strategy does not satisfy the 6EAP's demand for quantitative and qualitative targets or for the formulation of operational measures to encourage waste prevention.

The Thematic Strategy places much value on the fostering of recycling, but does not specifically focus on the priorities set in Art. 8(2)(iii) of the 6EAP Decision with regard to a strategy on waste recycling:

- Measures aimed at ensuring source separation, the collection and recycling of priority waste;
- Further development of producer responsibility; and
- Development and transfer of environmentally sound waste recycling and treatment technology.

The Thematic Strategy does not include **measures aimed at ensuring source separation, collection and recycling of priority waste** but gives some hints on legal modifications or the production of guidelines regarding the treatment of different wastes such as waste oil or biowaste. Yet, these hints do not outline any measures to ensure source separation, collection and recycling.

As for the further development of **producer responsibility**, the announcement that an analysis of the long-term feasibility and viability of a material-specific approach will be undertaken has given rise to concerns that the existing waste stream approach – where producers are held responsible – could be replaced by a more complex materials approach where producer responsibility cannot practically be used (57).

However, as for the development and transfer of environmentally sound waste recycling and treatment technology, the Thematic Strategy announces the development of common recycling standards, which are to be developed at a later time.

Art 8(2)(iv) of the 6EAP Decision calls for the **development and revision of legislation** regarding specific waste streams, such as demolition waste, sewage sludge, biodegradable wastes, packaging, batteries as well as the waste shipment legislation.

The Thematic Strategy does in general not address the objectives of Article 8(2)(iv) but includes some hints on the revision of the sewage sludge Directive and the development of guidelines for compost.

The TS, however, covers the objectives of clarification of definitions demanded by Article 8(2)(iv) such as:

- Clarification of the distinction between waste and non-waste; and
- Development of adequate criteria for the further elaboration of Annex IIA and IIB of the waste framework Directive.

However, the fact that the distinction between waste and product is subject to comitology processes for different waste streams is criticised as adding to waste law fragmentation instead of simplification and streamlining (58).

As regards the distinction between disposal and recovery, Art 21 of the proposal foresees that the Commission may adopt minimum standards for permits designed to ensure that the waste is treated in an environmentally sound manner.

As a result, the Thematic Strategy covers a lot of waste-related issues but deals with only few of the specific issues referred to in Art 8(2)(ii)-(iv) of the 6EAP Decision.

⁵⁷ See European Environmental Bureau note ‘Commission gives up on EU recycling society: declassification and deregulation pave way for burning <http://www.euractiv.com/en/sustainability/waste-prevention-recycling/article-128551> (1 October 2007).

⁵⁸ See view of German Industrial and Chamber Organisation DIHK and Austrian Economic Chamber: http://www.dihk.de/inhalt/download/eckpunkte_recycling.pdf (1 October 2007).

4.5 Urban environment

The Thematic Strategy on the urban environment (TS) was adopted on 11 January 2006. The Strategy is based on extensive consultation with stakeholders and intends to set out measures to support and facilitate the adoption of integrated approaches to the management of the urban environment by national, regional and local authorities

Contents of the Thematic Strategy

In light of the principle of subsidiarity and the recognised need for prime responsibility of local authorities, the objectives of the Thematic Strategy are to:

- Improve the quality of the urban environment, thus making cities more attractive and healthier places in which to live, work and invest;
- Reduce the adverse environmental impact of cities on the wider environment;
- Improve the implementation of existing EU policies and legislation at the local and urban levels; and
- Address the lack of integrated approaches to the management of the urban environment.

More specifically, the Thematic Strategy aims to contribute to the local implementation of existing environmental legislation, notably through facilitating the development and dissemination of good practices. Furthermore, the Thematic Strategy attempts to address the lack of an integrated approach to the management of the urban environment. For more details on the contents of the Thematic Strategy see section 3.3.7.

Implementation and effectiveness of the Thematic Strategy

The Thematic Strategy supports achieving some objectives of the 6EAP, such as the promotion of Local Agenda 21. The Thematic Strategy also helps to some extent to assess the effectiveness of action on the urban environment and to exchange best practice examples. Such assessments and exchange can be the ‘fuel’ for policy learning and the diffusion of good and best practice among the Member States.

However, the Thematic Strategy is largely descriptive in nature and only operative in a few parts, e.g. in the provision of support for best practice exchange. The Thematic Strategy neither identifies concrete proposals that are required to reach the objectives set out in Article 4(1) of the 6EAP Decision, nor specific targets and timetables, as generally recommended in Article 4(2). As a consequence, the Thematic Strategy has failed to provide adequate support for boosting the implementation of other objectives through more concrete and action-orientated measures. In particular, the Thematic Strategy does not effectively pursue concrete objectives of the 6EAP, notably:

- the need for an increased share in public transport, rail, inland waterways, walking and cycling modes,
- the need to promote the use of low emission vehicles in public transports, and
- the consideration of urban environment indicators.

In addition, the Thematic Strategy does not provide for a clear and ambitious vision of how to improve Europe’s urban environment and has not helped to launch a public European debate on the urban environment, the quality of life in cities, the contribution of cities to environmental protection or combating climate change.

Earlier drafts of the Thematic Strategy contained more concrete measures, e.g. the requirement of cities of more than 200.000 inhabitants to adopt integrated management plans. Some stakeholders, including Member States, voiced their concerns over an ambitious and detailed strategy when the draft was submitted to a consultation in 2005. Some Member States and local authorities were concerned that a detailed set of recommendations would not be in line with the principle of subsidiarity and national constitutional provisions. The envisaged technical guidance by the Commission could help remedy some of the Strategy's shortcomings.

4.6 Sustainable use of natural resources

This strategy was adopted on 21 December 2005, at the same time as the Thematic Strategy on Waste Prevention and Recycling. Both strategies refer to a set of objectives laid down in Article 8 of the 6EAP Decision. The Thematic Strategy on Sustainable use of natural resources is the core strategic piece that provides a long-term framework for achieving the objective of de-coupling economic growth and resource consumption .

Contents of the Thematic Strategy

The Strategy aims to provide a framework to improve resource efficiency, reduce the negative environmental impact of resource use, and achieve overall improvements in the environment going hand in hand with economic growth (achievement of 'decoupling' between economic growth and negative environmental impacts). The Thematic Strategy is conceived as a long-term strategy laying the foundations for the next 25 years.

The Thematic Strategy provides for the establishment of a Data Centre for policy makers to enhance and improve the knowledge base on resource use and its environmental impacts. It also aims to develop indicators (e.g. eco-efficiency indicators) and proposes that each Member State develop national measures and programmes on the sustainable use of natural resources. At the international level, the Thematic Strategy suggests setting up an International Panel on the sustainable use of natural resources in cooperation with UNEP and possibly other international partners. For more details see section 3.4.1.

Implementation and effectiveness of the Thematic Strategy

The Thematic Strategy is intended to specifically address the resource-related objectives laid out in Article 8(1) and Article 8(2)(i) of the 6EAP Decision.

The Thematic Strategy does not include quantitative targets for the diminution of resource use and resource efficiency as prescribed by Article 8(2)(i)(c) of the 6EAP Decision. No concrete legal targets have been formulated at the European level to de-couple economic growth from resource use. The Strategy merely asks the Commission to develop a database and criteria to measure and assess resource use.

The Thematic Strategy does not commit to reducing resource consumption, yet it states that for renewable resources the use has to remain below the threshold of overexploitation. While the 6EAP called for a strategy to include the development and the implementation of a broad range of instruments, the Thematic Strategy clearly fails to meet these objectives since it merely provides a general framework for possible future action. Therefore, there is no guarantee that the initiatives announced in the Thematic Strategy will result in any real changes how natural resources are used in the EU and the negative environmental impacts associated with this resource use (59).

⁵⁹ Similar criticism has been made by the German Federal Environmental Agency, see <http://www.umweltbundesamt.de/ressourcen/ressourcenstrategie.htm> .

4.7 Sustainable use of pesticides

Development of Thematic Strategy

The Thematic Strategy on the sustainable use of pesticides was adopted by the Commission on 12 July 2006. Consequently, the 6EAP objective of developing and submitting the Thematic Strategies to the European Parliament and Council within three years of adoption of the 6EAP has not been met in this case.

The Strategy, however, was developed in close consultation with stakeholders. The consultation exercise was launched via the Commission's Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides' (COM(2002)349) of July 2002. In addition, the Commission organised a conference with representatives all stakeholder groups in November 2002.

Contents of Thematic Strategy

The Strategy, like the other Thematic Strategies published to-date, is short (13 pages) and general. It aims to minimise hazards and risks to health and environment resulting from use of pesticides, improve controls on their use and distribution, reduce the levels of harmful active substances (amongst others through substitution), encourage low-input or pesticide-free cultivation and establish a transparent system for reporting and monitoring progress.

Five different legislative initiatives linked to the Thematic Strategy are foreseen by the Commission. Proposals for two of these were published on the same day as the Thematic Strategy: a new Framework Directive on pesticide use, and a Regulation concerning the placing of plant protection products on the market which will replace current Directive 91/414/EEC. These are being discussed more in-depth in section 3.3, as are the three other legislative initiatives mentioned in the TS..

Neither the Thematic Strategy, nor the proposal for a Framework Directive, include quantified environmental targets to be achieved by Member States across the EU. Instead they propose to delegate the target-setting process to the Member States themselves, by mandating the adoption, at the national level, of action plans setting out appropriate targets to achieve the generally worded objective of reducing hazards and risks from, and dependence on, pesticides. However, the EP's Environment Committee is calling for quantified EU reduction targets to be adopted. It remains to be seen whether the EP plenary and the Environment Council will accept this.

Implementation and effectiveness of the Thematic Strategy

As the Thematic Strategy has only recently been issued and the accompanying legislative proposals are yet to be adopted by the European Parliament and Council, it is too early to assess its effectiveness and implementation. The implementation and effectiveness of the Strategy depends to a large extent to the level of ambition of the legislation that will result from it, in particular the framework Directive on pesticide use and the Regulation on placing plant protection products on the market. The exclusion of quantitative targets might decrease the effectiveness the Thematic Strategy. It also needs to be noted that the Thematic Strategy does not cover all pesticides. Biocides in particular are not covered.

4.8 Soil protection

Development of Thematic Strategy

The Thematic Strategy on soil protection (COM(2006)231) was published by the Commission on 22 September 2006. This missed the deadline for publication of the Strategies by just over a year. The soil Thematic Strategy was the last of the seven to be adopted.

The Strategy was developed in close cooperation with stakeholders, with much higher levels of engagement than under some of the other six Strategies. To inform the development of the Strategy five working groups, plus an advisory board, were set up. Essentially each working group consisted of representatives from industry, NGOs, etc and focused on one of the key themes within the strategy. The working groups developed findings which were then discussed at the higher level advisory forum. The Chairs of the working groups, key stakeholders selected for the role, sat on the Advisory Forum, chaired by the Commission.

It should be noted that the stakeholder consultation process has been commended by representatives of NGOs who were involved in the development of the other Strategies. It was considered particularly extensive, perhaps because it was focusing on new areas of policy for the EU, meaning that there were more options available for discussion and that stakeholders were less constrained by concerns regarding existing measures. Importantly, the recommendations from stakeholders significantly shaped the outcome of the process. It was they who suggested that rather than having a suite of interconnected legislative measures emerging alongside the Strategy – as originally planned – that a framework Directive be put forward instead. Finally, this expert consultation process was complemented by a consultation on the proposed content of the measures to inform the Impact Assessment process.

It should be noted that while the stakeholder consultation was commended, some had concerns that it was almost too extensive. For example, given the high number of working groups, and even subgroups within a working group, it was not possible for the leading NGOs to be present in all the debates.

No reference is made to the soil Thematic Strategy in the Commission's mid-term review document on the 6EAP (nor is any reference to soils made). A short section, however, is included in the Commission staff working paper supporting the review; although this does not evaluate the content of the Strategy but rather relays the key elements.

Contents of the Thematic Strategy

The soil Thematic Strategy, like others before it, is short; it contains only 12 pages of text. This text is primarily dedicated to explaining the content of the proposed Soil Framework Directive, which is the implementing measure for many of the actions set out in the Strategy. This would be a totally new measure; once adopted it will be the first EU legislation dealing explicitly and holistically with soil protection. Unlike the other key environmental media of air and water, soil has not been previously been systematically addressed across the EU. There are, however, other actions listed under the next steps section of the Strategy that have the potential to significantly impact on practice, if appropriately implemented. For more details on this see section 3.2.3.

The Strategy does not contain any specific quantitative targets relating to soil protection, although it a list of qualitative objectives and actions is included. The actions set out are, however, often vague with few novel developments that can be directly attributable to the development of the Strategy, i.e. many processes were already ongoing.

It would be potentially possible to assess the implementation of the Strategy against some of the more specific actions set out i.e. ensuring soil issues are included within legislative reviews. Others, however, are merely suggestions or recommendations that Member States take into account soil issues when developing policy or that the Commission monitor the integration of soil issues. These will, therefore, be more difficult to assess.

In terms of the impact of the actions proposed, the Commission cites a figure of €38 billion a year as the upper limit of what soil degradation could cost across the EU. It is, however, difficult to quantify the impacts of the Strategy, given the relatively vague nature of many actions. In the Impact Assessment accompanying the measure the Commission does, however, state that estimated benefits 'clearly outweigh costs'.

Implementation and effectiveness of the Thematic Strategy

The impact of the Strategy, thus far, has been primarily to stimulate debate in relation to soil protection and how this might best be achieved. The Thematic Strategy process has significantly raised the profile of soil quality issues, something that in the past has perhaps been somewhat neglected given the previous lack of EU measures. The proposed framework Directive has stimulated significant debate within the Council and Parliament alike.

In terms of tangible action, aside from research commissioned to support the process, there has been little. Given that the Thematic Strategy was only adopted in September 2006 there has been limited opportunity for this to influence policy making. Its primary implementing measure is still yet to have its first formal reading in either the Parliament or the Council. Other key actions set out in section 3.2.3 are also yet to occur: e.g. the formal publication of the revised IPPC Directive or the review of the sewage sludge Directive.

5 IMPLEMENTATION AND ENFORCEMENT OF EXISTING LEGISLATION

According to the preamble of the 6EAP, 'full and correct implementation of the existing legislation is a priority'. Accordingly, one of the 'strategic approaches' of the Programme listed in Article 3 of the 6EAP Decision is 'encouraging more effective implementation and enforcement of Community legislation on the environment'. This is to be achieved, *inter alia*, by 'increased measures to improve respect for Community rules on the protection of the environment and addressing infringements of environmental legislation'. Such measures are, first and foremost, the responsibility of the Member States, but, where they fail in their duty to ensure adequate transposition, implementation and enforcement of EU environmental legislation, the powers of the Commission under the Treaty to monitor national implementation and initiate infringement proceedings against delinquent Member States come into play. Though not explicitly mentioned in the 6EAP, the harmonisation of national provisions concerning sanctions for non-compliance with environmental law and access to administrative and judicial review procedures in the Member States are also relevant in this context.

5.1 Ensuring better enforcement in the Member States

As the Commission points out, implementation and enforcement of EU environmental law in each individual Member State is of crucial importance to the effectiveness of environmental policy, and this final link in the 'regulatory chain' still leaves much to be desired: 'The relatively high number of complaints received by the Commission reflects the non-existence and/or the relative lack of efficiency of complaint mechanisms in Member States.' (COM(2003)667, p. 35). Where competent authorities in the Member States fail to enforce or even deliberately violate EU environmental legislation, only access to adequate administrative and judicial review procedures at the national level can provide citizens, businesses and NGOs with means to compel their authorities to comply with their obligations under Community law. Providing such access is an obligation incumbent on Member States under the Aarhus Convention, which has been ratified by the Community in 2005 and thus has become part of EU law.

The Commission deserves credit for having submitted a proposal for a Directive on access to justice in environmental matters (COM(2003)624) as part of its package of measures for the implementation of the Aarhus Convention, notwithstanding the lack of a clear mandate for such a proposal in the 6EAP. This proposal goes some way towards addressing the issue of improving access to justice in the Member States, but is unlikely to be adopted by the Council any time soon, despite a favourable first reading opinion given by the European Parliament in 2004. A recent study ordered by the Commission, which is expected to be published in the near future, confirms the persistence of serious deficiencies in access to environmental justice in many Member States, despite their ratification of the Aarhus Convention, and strengthens the case for adoption of EU legislation in this field.

Another important Commission legislative initiative designed to promote better implementation and enforcement of EU environmental law in the Member States is the proposal for a Directive on the protection of the environment through criminal law (COM(2007)51), which is intended to lay down some basic harmonised standards at EU level for the application by Member States of criminal sanctions to serious violations of environmental law.

The Commission considers that the existing sanctions in the Member States are insufficient to ensure effective implementation of EC environmental policy due to disparities in the type and level of sanctions. Some Member States provide for administrative sanctions only, whereas the Commission is of the opinion that criminal sanctions should be introduced for all serious environmental offences. The proposed Directive would define those offences and require Member States to ensure that they constitute criminal offences under their national law. Moreover, it would also achieve some measure of harmonisation of the level of the sanctions for the most serious offences, by specifying that these should be punishable by imprisonment and laying down its minimum and maximum duration, depending on the nature and circumstances of the offence. The proposed Directive is currently being considered by Parliament and Council.

This initiative is the latest development in a long-standing legal and political struggle between the Commission and the Council on the competence of the EC to legislate on environmental criminal law. In an important judgment of September 2005, the Court of Justice held that the Community legislature has the power, under Article 175 of the EC Treaty, to take 'measures which relate to the criminal law of the Member States which it considers necessary in order to ensure that the rules which it lays down on environmental protection are fully effective' (60).

Other measures provided for by the 6EAP to improve implementation and enforcement of EC environmental law at Member State level are the promotion of improved standards of permitting, inspection, monitoring and enforcement and improved exchange of information on best practice in this field. A Recommendation of the European Parliament and of the Council providing for minimum criteria for environmental inspections in the Member States (2001/331/EC) was adopted prior to the 6EAP and its implementation is being promoted through the work of the European Network for the Implementation and Enforcement of Environmental Law (IMPEL). The Commission is scheduled to publish a report on the implementation of this Recommendation later this year.

5.2 Commission policy with respect to the handling of infringements

The Commission regularly reports to the European Parliament on the exercise of its monitoring and enforcement powers, both through a general Annual Report covering all aspects of Community law (61), as well as, since a number of years, an 'Annual Survey' providing more detailed information on environmental law specifically (62).

In its report for 2002, published in 2003, the Commission noted: 'The last five years have seen a growing difficulty in the timely and correct implementation as well as proper practical application of EC environmental legislation. This is reflected in the growing number of complaints received and infringement cases opened by the Commission every year.' (COM(2003)669, p. 33). But two years later, the annual report stated: 'In the area of the environment, implementation of Community legislation by the Member States has improved in recent years. This is borne out by the substantial reduction in the number of new complaints registered by the Commission in 2004 (336 as compared with 555 in 2002) (COM(2005)570, p. 6).

⁶⁰ Judgment of 13 September 2005, Case C-176/03, Commission v Council, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62003J0176:EN:HTML>

⁶¹ The most recent such report is COM(2007) 398.

⁶² The most recent annual survey published by DG ENV is SEC(2005) 1055.

According to the latest published data, the number of complaints continues to decline, plummeting to 275 in 2005 and 167 in 2006. However, the number of complaints relating to the environment is still among the highest of any area of EU policy, with only internal market and taxation and customs complaints ranking higher. Does the declining number of environmental complaints reflect an improved implementation record or rather rising public scepticism about the legitimacy of European institutions in general and the effectiveness of the Commission's role as 'guardian of the Treaty' in particular?

From the outset, it should be pointed out that complaints are only one of several ways in which the Commission detects potential infringements of Community law. It also routinely launches infringement proceedings when Member States fail to notify measures taken to transpose Directives or when its own investigations reveal that national legislation is not in conformity with Community law (e.g. as a result of 'conformity checks' carried out in accordance with the 6EAP goal of 'a more systematic review of the application of environmental legislation across the Member States'). In the environmental field, these two modes of detection together accounted for some 54 % of new cases opened in 2006 (the remainder resulting from complaints). However, complaints still account for about half of the cases opened every year. As the European Parliament stressed in a resolution adopted on 16 May 2006, 'the number of complaints relating to infringements of Community law shows that European citizens play a vital role in its application, and that the capacity properly to address their concerns is important for the credibility of the European Union'.

In the past, the Commission has encouraged citizens to raise complaints about infringements of EC environmental law. It continues to stress that such complaints 'constitute a vital means of detecting infringements of Community law', which 'helps to make the principle of a Community based on the rule of law a tangible reality for Europe's citizens and economic operators.' At the same time, however, it also emphasizes the limited resources available to the Commission services to handle individual complaints and the 'practical difficulties' in doing so, and admits that it 'therefore concentrates on problems of communication and conformity' of national transposition measures rather than individual cases of bad application of EC environmental law.

In practice, it appears that the proportion of environmental cases that eventually lead to a 'reasoned opinion' being issued against a Member State, let alone to proceedings before the European Court of Justice, is small. In 2006, only some 17 % of pending environmental cases (whether detected as a result of complaints or of the Commission services' own monitoring activities) were referred to Court. Thus, the Commission's actual practice in the field of environmental law enforcement sends a mixed signal to citizens. The Commission in fact admits that it is 'particularly common' for environmental cases to be settled before the final stage of proceedings (63).

It should be recalled here that the Court of Justice has consistently held that the Commission's decision whether or not to initiate and pursue infringement proceedings against a Member State is fully discretionary.

⁶³ European Commission (2000) *Second annual survey on the implementation and enforcement of Community environmental law - January 1998 to December 1999*, pp 70-71.

The important question is, however, how the Commission uses its enforcement discretion in environmental cases and on what criteria it bases its decisions not to proceed against a Member State. A recent trend that is apparent from its general annual report is the significant increase in the overall number of infringement cases (other than mere non-communication of national implementation measures) closed by the Commission before the 'reasoned opinion' stage (a 46 % increase from 2003 to 2006). DG Environment's latest annual survey confirms that environmental cases are particularly affected by this development, though it presents this as evidence of 'its efforts to improve the effective handling of open infringement cases'. The survey of environmental enforcement policy reports that 'in 2005, the Commission closed 266 infringement cases, a figure which represents 54 % of the total number of all open infringements (489) at the end of 2005.' It goes on to state: 'In 89 % of these cases, closure was the result of remedial action taken by Member States following the identification of a violation of EU environmental law by the Commission. This confirms that legal enforcement action is being used as an effective tool to ensure better compliance with European environmental legislation.' (SEC(2006)1143, p 6) The information given does not allow the reader to identify what proportion of the cases closed are cases based on citizen complaints, as opposed to cases detected by the Commission's own monitoring procedures.

But the criteria which the Commission says it is applying to prioritise enforcement action tend to downplay the importance of taking such action in response to complaints about specific cases of incorrect implementation of EC environmental law in the Member States. In a Communication on 'Better monitoring of the application of Community law', published in 2002 (COM(2002)725), the Commission first specified the 'priority criteria' it would apply in the exercise of its discretion. These criteria, unfortunately, seem to exclude most cases of environmental non-compliance reported by citizens from priority attention: only 'damage to the environment with implications for human health' and 'cases of systematic incorrect application detected by a series of separate complaints by individuals' with respect to the same piece of legislation, or cases of failure to transpose or incorrect transposition which affect a large segment of the public, would fall within the criteria.

In the annual survey of its enforcement policy for 2005, DG Environment explains what it refers to as 'a more rationalised handling of complaints and infringements': 'Priority is given to tackling structural problems in Member States through the practise of grouping together cases concerning the same subject matter and launching horizontal cases to address systemic problems of bad implementation. [...] The decrease in the number of cases will allow the Commission to focus its resources on the bad transposition of directives, non-compliance with fundamental secondary obligations under Community environmental legislation and systemic problems of bad implementation.' In other terms, instances of bad implementation which the Commission does not deem to be 'systemic' will no longer be considered worthy of infringement proceedings under article 226 of the EC Treaty. Most individual complaints are likely to fall into this category in the future.

The Commission's most recent Communication on the application of Community law again addresses 'prioritisation and acceleration in infringements management' as an area in which it seeks to improve its performance. It proposes to refocus the set of priorities first set forth in the 2002 Communication: 'Priority should be attached to those infringements which present the greatest risks, widespread impact for citizens and businesses and the most persistent infringements confirmed by the Court.'

Apart from cases of non-communication of national measures and non-compliance with Court judgments, the Commission intends to prioritise 'breaches of Community law (...) raising issues of principle or having particularly far-reaching negative impact for citizens, such as those concerning the application of Treaty principles and main elements of framework regulations and directives'. (COM(2007) 502, p. 9) This general guidance is to be further specified for each sector, 'depending on the availability of resources', which the Commission plans to be done for the environment sector in a special Communication to be issued later this year.

On several occasions, the Commission has pointed out that, as a result of enlargement, the workload on its services to monitor the implementation of Community law in all Member States and take enforcement action as required would increase substantially. The mere time and effort required to scrutinise the conformity of 25 different national transposition measures in 20 languages needs little explanation. In its Communication of 2002 on Better Monitoring, the Commission recognized that more resources would have to be devoted to this task. (COM(2002)725) However, there is no evidence that significant additional resources have been made available for this purpose in DG Environment since enlargement. According to data supplied by the Commission services in April 2006 in reply to a request for access to documents introduced by IEEP under Regulation (EC) No 1049/2001, the number of statutory staff in the DG's Infringements Unit was the same on 31 December 2005 as on 31 December 2002 (27 persons). Without additional resources, it is doubtful that the objectives of the 6EAP can be achieved and rather more likely that the quality of monitoring and enforcement will decline.

The criteria and resources for dealing with registered complaints are one cause of concern; another are recent allegations that, in the environmental sector, certain complaints by individuals are no longer registered by Commission services, in conflict with official Commission policy as stated in the 2002 Communication. In its resolution of 16 May 2006, the European Parliament 'notes that the European Ombudsman has recently received specific complaints denouncing the non-registration of complaints and is currently investigating them'.

6 ECO TAXES AND ENVIRONMENTALLY HARMFUL SUBSIDIES

With a view to internalising negative as well as positive impacts on the environment, the 6EAP calls for the use of ‘a blend of instruments, including market based and economic instruments’ (Article 3(4) of the 6EAP Decision). The fact that market based and economic instruments are mentioned separately seems to reflect the desire to give a more prominent role to these instruments in the EU’s environmental policy tool kit. Actions required to achieve this include, among others:

- ‘encouraging reforms of subsidies that have considerable negative effects on the environment and are incompatible with sustainable development, inter alia by establishing, by the mid-term review, a list of criteria allowing such environmentally negative subsidies to be recorded, with a view to gradually eliminating them’; and
- ‘promoting and encouraging the use of fiscal measures such as environmentally related taxes and incentives, at the appropriate national or Community level’.

In this chapter, we will review the progress made in this area since 2002. The focus will be on environmental taxes and on the reform of environmentally harmful subsidies. Emissions trading, which has meanwhile become an important instrument for greenhouse gas emissions reduction in the EU, will be left outside the scope of this chapter, since it is discussed in chapter 3.1.

6.1 Environmental taxation

6.1.1 Policy initiatives and developments at EU level

General

The desire to promote the use of economic instruments has been reconfirmed in several policy documents that have appeared since the adoption of the 6EAP. For example, Council Recommendation 2005/601/EC (marking the relaunch of the Lisbon Strategy) calls upon Member States to ‘promote the development of means of internalisation of external environmental costs [...], inter alia, through [...] the use of market-based instruments’ (Guideline No 11). Similarly, in the ‘renewed’ EU Sustainable Development Strategy (June 2006), the European Council stated: ‘The most appropriate economic instruments should be used to promote market transparency and prices that reflect the real economic, social and environmental costs of products and services (getting prices right).’ (Council document 10917/06, p. 24).

In March 2007, the Commission published a Green Paper on market-based instruments for environment and energy related policy purposes (COM(2007)140). The paper is intended to launch a discussion on advancing the use of such instruments in the Community. It contains a limited number of concrete policy options, among others in the areas of energy, transport and waste (see below).

In July 2007, the Commission presented a Communication on Value Added Tax (VAT) rates (COM(2007)380). In this Communication, the Council is encouraged to organise a discussion on the usefulness or not of the VAT instrument as an incentive to stimulate the use of energy saving materials, energy efficient products, environmentally beneficial products, biomass etc.

Energy

In its Communication on the 6EAP the Commission expressed its objective of energy taxation 'leading to a steady and predictable increase in energy prices' (COM(2001)31, p. 27). Energy prices have actually increased over the past years (though hardly as a result of taxation), but their predictability seems to remain as low as ever (though substantial decreases are generally not expected).

In 2003, a Directive on the taxation of energy products and electricity (proposed already in 1997) was finally adopted (2003/96/EC). It specifies minimum tax levels for motor fuels, heating fuels (oil products, natural gas and coal) and electricity. The Directive provided for a large number of exemptions, postponements and special arrangements for specific fuels, activities and Member States. Many of these derogations expired by the end of 2006. The Directive also enables Member States to apply reduced rates or exemptions to (among others) renewable energy sources.

The Green Paper on market based instruments (COM(2007)140) puts forward the option of splitting the minimum levels of energy taxation, which would mean (1) a uniform minimum rate for all fuels according to their energy content and (2) a differentiated component reflecting the environmental aspects. A comprehensive review of the Energy Tax Directive is foreseen for 2008 (64).

Road transport

The 6EAP aims at reducing greenhouse gas emissions in the transport sector by means of (among others) 'promoting measures to reflect the full environmental costs in the price of transport' (Art. 5(2)(iii)(g) of Decision 1600/2002/EC).

In 2003, the Commission proposed amendments to the 1999 'Eurovignette' Directive (COM(2003)448). This proposal did not include the possibility for Member States to take external (environmental) costs into account in determining road use charges. However, as a result of negotiations with Council and Parliament agreement was reached on a compromise package in March 2006. The amended Directive (2006/38/EC) now allows road user charging to take into account not just costs of infrastructure but also congestion and environmental issues (according to vehicle emissions category) for vehicles above 12 tonnes and above 3.5 tonnes from 2012. Member States are free to choose how to implement the system and what levels to impose. However, there is no obligation to have charges. The Commission is to undertake a modelling exercise and impact assessment of the internalisation of external costs by 10 June 2008.

In 2005, the Commission proposed legislation that would require Member States levying car registration taxes and /or circulation taxes to relate at least 50% of the tax to the level of a vehicle's CO₂ emissions by 2010 (COM(2005)261). The European Parliament expressed its support for the proposal in September 2006, but asked for a broadening of the tax base to include fuel consumption and emissions of air pollutants as well. However, the Council has not considered the proposal at all since it was submitted by the Commission in July 2005 (65).

⁶⁴ Ahead of this review, the Commission has already presented a proposal for amending the Directive with respect to diesel tax rates; see below.

⁶⁵ See http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosId=193089#380217

In March 2007, the Commission presented a proposal (COM(2007)52) to amend the Energy Taxation Directive (2003/96/EC; see above) in order to gradually increase the minimum tax rate for diesel, reaching the same level as petrol by 2012. According to the Commission, the proposal will (among others) provide better environmental protection by reducing the phenomenon of 'fuel tourism' in the haulage sector and foster a decrease in motor fuel consumption in Europe. An earlier attempt to harmonize diesel tax rates, launched by the Commission in 2002, failed to get the required unanimous support from the Council.

On 30 May 2007, the European Parliament and Council adopted a new Regulation on emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) (Regulation (EC) No 715/2007). Article 12 of this Regulation allows Member States to apply financial incentives for vehicles complying with the emission standards before these standards become compulsory. Member States may also grant financial incentives for the retrofitting of in-use vehicles and for scrapping vehicles which do not comply.

Aviation

In a hearing before the European Parliament in September 2004, Transport Commissioner Barrot suggested that the EU could introduce a tax on aircraft fuel for internal flights⁽⁶⁶⁾. Meanwhile, however, this idea seems to have disappeared from the agenda, since proposals to include aviation in the EU's greenhouse gas emissions trading scheme have been tabled.

Shipping

In 2004 and 2005, two reports were prepared by NERA for the Commission, investigating options for using market based instruments to reduce air emissions from shipping in EU sea areas (Harrison *et al.*, 2004, 2005). The findings from these reports have not (yet) led to policy proposals.

Agriculture, nature and biodiversity

In July 2006, the Commission presented the Thematic Strategy on the sustainable use of pesticides (COM(2006)372). Setting-up of a system of taxes/levies to influence qualitatively pesticide use is mentioned under the heading 'Measures/actions that are currently not proposed to be part of the Thematic Strategy, but could be examined again at a later stage'.

Natural resources and waste

The new 'batteries' Directive (2006/66/EC) allows Member States explicitly to use economic instruments to promote the collection of waste batteries and accumulators or to promote the use of batteries and accumulators containing less polluting substances, for instance by adopting differential tax rates (art. 9).

⁶⁶ ENDS Europe Daily, 4 October 2004.

6.1.2 *The use of environmental taxes in Member States*

At the end of 2005, the European Environment Agency presented a report on the use of market-based instruments in Europe (EEA, 2005; a summary version was published as EEA, 2006). In the area of taxes and charges, it highlights a number of developments, including:

- an increasing use of novel forms of road charges (e.g. the London congestion charge);
- a trend towards environmentally differentiated transport taxes (particularly taking into account CO₂ emissions from vehicles);
- new taxes in the area of waste (e.g. the plastic bag tax in Ireland).

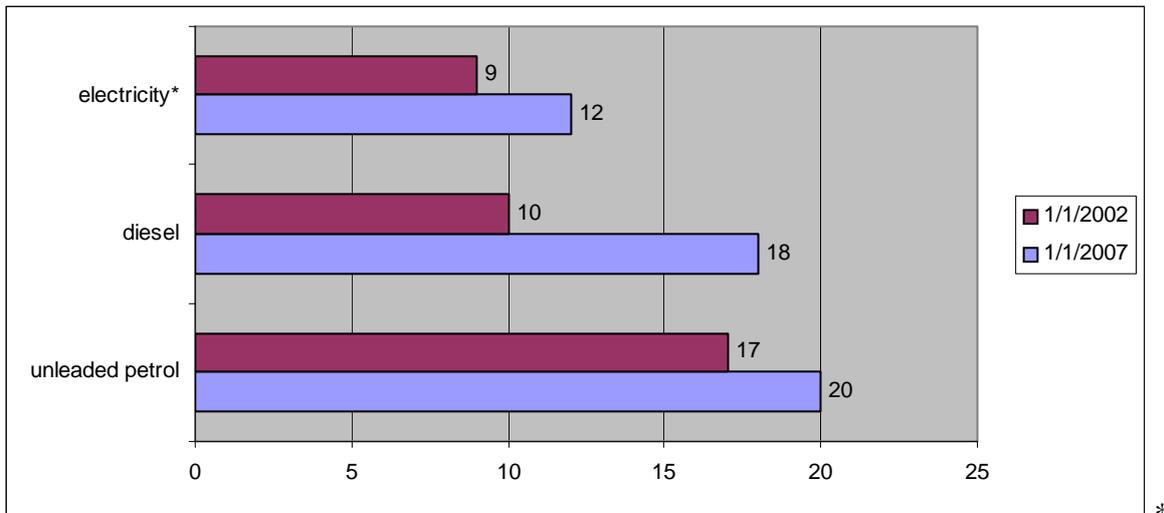
Furthermore, the EEA report found that there is a clear tendency towards ‘full cost recovery’ for the supply of environmental goods and services (such as water supply, wastewater treatment and waste services), but the full internalisation of (quantified) external costs in environmental tax rates is still exceptional.

As an illustration of the growing importance of eco-taxation, Figure 1 shows the number of Member States meeting or exceeding the minimum tax rates for three products covered by the Energy Taxation Directive, and Figure 2 shows the number of Member States applying a selected number of other environmental taxes and charges in 2002 and in 2007 (⁶⁷).

In some cases, Member States have to refrain from (or withdraw or change) environmental taxes and charges, due to EU competition rules. For example, in July 2007 the Commission sent a reasoned opinion to Hungary requesting changes in its legislation on environmental charges applicable to beverage containers. The Commission believes that Hungary's system leads to *de facto* discrimination against products from other Member States.

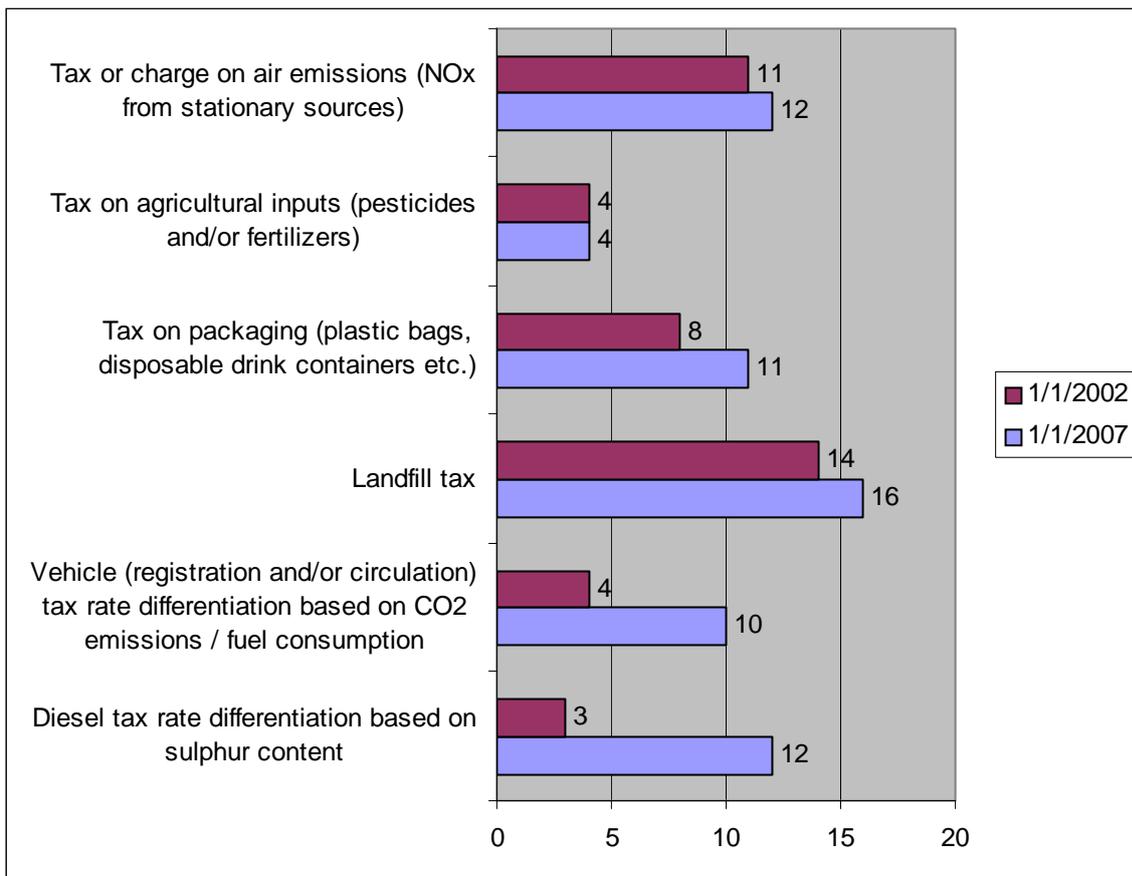
⁶⁷ The figures for 2002 include the 12 countries that were not yet Member States at that time.

Figure 1: Number of EU-27 Member States applying standard excise tax levels equal to or exceeding the minimum levels specified in Annex I to Directive 2003/96/EC



*non-business use

Figure 2 : Number of EU-27 Member States applying selected environmental taxes



Sources: Commission, OECD, EEA, REC, ACEA, ENDS Europe Daily.

6.1.3 Revenues from environmental taxes

Despite the growth in the number of environmental taxes, the share of these taxes in total tax revenues remains relatively small. For the EU-27 as a whole, it has even been on the decline in recent years: from 6.8 % in 2002 to 6.6 % in 2005 (Eurostat 2007, Annex A, Table C.4_T).

Table 2 shows the development by Member State. It appears that even though in a majority of EU countries the share of environmental tax revenues is growing, it is decreasing in the five largest Member States, often from an already relatively low starting point, resulting in an overall downward trend for the EU as a whole.

Possible explanations for this decrease include the introduction of the greenhouse gas emissions trading system (as an alternative market based instrument to high energy taxes) and the relatively high prices on the world oil market, making energy tax rate increases politically unattractive.

Table 2 : EU Member States with share of environmental tax revenues in total tax revenues below or above EU average in 2005, and trend in 2002-2005

	Increasing trend		Decreasing trend	
Above EU average	Bulgaria Czech Republic Denmark Hungary Cyprus Estonia	Latvia Luxembourg Netherlands Romania Slovakia Finland	Ireland Italy Malta Portugal Slovenia	
Below EU average	Belgium Austria Poland		Germany Greece Spain France	Lithuania Sweden United Kingdom

Source: Eurostat (2007), Annex A, Table C.4_T.

Energy taxes dominate the trend, as they represent around three quarters of environmental tax receipts. Transport taxes correspond to, on average, slightly less than one fourth of total environmental tax revenues. Pollution and resource taxes raise only a marginal amount of revenue: together they make up just 4 % of total environmental taxes (Eurostat, 2007, p. 110).

Revenues from environmental taxes are not necessarily a good indicator of their importance or effectiveness as an environmental policy instrument. For instance, they do not reflect environmentally relevant differentiations in tax rates. Moreover, declining revenues might actually signify a decline in the taxed activity (energy and resource use, transport, emissions) and thus indicate that the instrument was successful. However, at least for energy and transport, no volume decreases have been observed in recent years. According to (provisional) Eurostat figures, final energy consumption in the EU-27 grew by 4 % between 2002 and 2005. Goods transport by road (in tonne kilometres) in the EU-25 grew by 16 % between 2000 and 2005, and passenger transport by car (in passenger kilometres) by 6 % between 2000 and 2004.

6.2 Environmentally harmful subsidies

6.2.1 Policy initiatives

In 2002, the Commission published a staff working paper, identifying public aid granted to different energy production sources (SEC(2002)1275). The annexes to this paper present a fairly comprehensive overview of public aid schemes to coal, oil, gas, renewable and nuclear energy. To some extent, the document leans on a study done in 2001 for the European Parliament (Oosterhuis, 2001). However, the Commission's working paper does not mention the amounts of subsidy involved in indirect aid (such as tax exemptions and reductions).

A review of environmentally harmful subsidies was identified as a 'Priority Action' (PA7) in the Environmental Technologies Action Plan (ETAP, COM(2004)38). According to the ETAP, such subsidies can be a major barrier to the take-up of environmental technologies, distorting prices in favour of a more polluting, subsidised technology.

Where these distortions occur, their removal should be considered, albeit taking into account their social and economic aspects. In 2005, the Commission would work together with Member States and regional governments, using, as far as possible, a methodology developed by the OECD, to identify the most significant subsidies that have a negative impact on the environment. According to the ETAP, each level of government should then take the appropriate action, as quickly as possible, to remove or reduce their negative effects, for example by introducing new taxes or tax incentives combined with harmonised performance targets.

The European Council has expressed its support for the reform of environmentally harmful subsidies several times in recent years, for example in the renewed Lisbon Strategy (Council Recommendation 2005/601/EC, Guideline No 11). In the renewed EU Sustainable Development Strategy adopted in June 2006, the European Council stated: 'By 2008, the Commission should put forward a roadmap for the reform, sector by sector, of subsidies that have considerable negative effects on the environment and are incompatible with sustainable development, with a view to gradually eliminating them' (Council document 10917/06, p. 24). In the Mid-term Review of the 6EAP (COM(2007)225) the Commission confirmed that it will comply with the Council's wish.

The High Level Group on competitiveness, energy and the environment also paid attention to environmentally harmful subsidies in its third report (27 February 2007):

'Member States should consider a comprehensive reform of subsidies insofar as a number of existing subsidy schemes may not be justifiable, in particular environmentally harmful subsidies, in which case they should be phased out. Dialogue with stakeholders would facilitate this process. Action is justified when such subsidies undermine other policy objectives such as fighting climate change, the Lisbon Strategy for Jobs and Growth, proper functioning of energy markets, or access to raw materials, *without meeting their initial objective.*' (italics added) In other words, the High Level Group seems to suggest that subsidy reform may not be justified as long as the (environmentally harmful) subsidy still meets its initial objective.

In May 2007, the Commission published a report on the application of Regulation (EC) No 1407/2002 on State Aid to the Coal Industry (COM(2007)253). It concluded that there is no need to change the existing rules, which will expire by 2010.

As things currently stand, concrete policy steps towards subsidy reform at EU level are still few and far between. However, the reforms that have taken place in the EU's Common Agricultural Policy (CAP) in recent years can be seen as one example of such steps, as agricultural subsidies are now increasingly tied to compliance with (among others) environmental standards and nature protection, and decoupled from production volume (cf. Pallemmaerts *et al.*, 2006).

6.2.2 Amounts and trends

The European Environment Agency has published reports on subsidies to energy (EEA, 2004) and transport (EEA, 2007).

Subsidies to *energy* in the EU-15 were estimated to amount at least to €29 billion in 2001 (see Table 3). This estimate includes 'off-budget' types of support, such as tax differentiation, but excludes the subsidies that are implicit in the non-internalisation of external costs. Coal subsidies in Germany continue to be the single largest (on-budget) item, amounting to over €4 billion. Substantial off-budget subsidies include, for example, the preferential tax treatment for large energy users in the Netherlands and the reduced VAT rate on energy in the UK.

Table 3 : Indicative estimates of total energy subsidies, EU 15 (€billion, 2001)

	Solid fuel	Oil and gas	Nuclear	Renewables	Total
On-budget	> 6.4	> 0.2	> 1.0	> 0.6	> 8.2
Off-budget	> 6.6	> 8.5	> 1.2	> 4.7	> 21.0
Total	> 13.0	> 8.7	> 2.2	> 5.3	> 29.2

Note: Electricity subsidies allocated to fuels on basis of generation inputs. Excluding external costs.

Source: EEA (2004), Table 2.

Available time series data for energy subsidies only cover specific kinds of direct, on-budget subsidies, notably coal subsidies. These data show for instance that state aid for coal production authorised in the EU has decreased from around €8 billion per year in the mid-1990s to around €6 billion per year in recent years (Europe Economics, 2006).

The EEA (2007) study identified *transport* subsidies in the EU amounting to an estimated €269 to €293 billion in 2005 (see Table 4). As in the case of energy, this estimate includes on-budget as well as off-budget subsidies, but excludes non-internalised external costs.

Table 4 : Overview of total annual transport subsidies by incidence and mode (€billion, 2005)

	On-budget subsidies		Off-budget subsidies		Total
	Infrastructure subsidies (only EU-15)	Other budget transfers	Fuel-tax exemptions	VAT exemptions	
Road	110	7	0	9	125
Rail	37	33	0 - 1	3	73
Air	0	1	8 - 16	18	27 - 35
Water	10	1	3 - 19	0	14 - 30
Multiple modes		30			30
Total	156	73	11 - 36	29	269 - 293

Note: Numbers may not add to totals shown due to rounding. Infrastructure subsidies equal infrastructure costs minus infrastructure charges. For fuel-tax exemptions and rebates, low and high estimates are provided; for road transport the tax rate for fuels exceeds the rates selected as references to calculate subsidies. This table is based on incomplete data; the total value of European transport subsidies remains unknown. This note must accompany any use of this table.

Source: EEA (2007), Table 2.

Time series data for transport subsidies are scarce, incomplete, and not very up-to-date. For example, a relatively recent OECD publication on environmentally harmful subsidies (OECD, 2005) contains a small section (in an Annex) on trends in public financing of transport infrastructure. The figures presented there refer to a period up to 1995 only.

Subsidies to *agriculture* (producer support) in the EU increased from €91 billion in 1986-88 to €110 billion in 2004 (OECD, 2006, Table 1.3). However, the latter figure relates to the EU-25 whereas the former relates to the then EU-12. Clearly, in relative terms (e.g. per unit of production or per inhabitant) the amount of agricultural subsidies has decreased. The OECD figures also reveal that the share of producer support in average gross farm receipts in the EU has decreased from 41% to 32% over the same period.

Generally, attempts to quantify subsidies tend to meet with tremendous methodological difficulties, as well as limited data availability, especially if they aim at including off-budget and indirect subsidies (which is essential to obtain a complete picture). Results from such attempts should therefore always be treated with caution. Moreover, subsidies to energy, transport and agriculture are not by definition environmentally harmful. Whether this is the case depends on the design of the subsidy and on its direct and indirect impacts on the behaviour of individuals and firms.

6.3 Conclusions

Since the launch of the 6EAP in 2002, the EU's intention to strengthen the role of environmental taxes and charges and to reduce environmentally harmful subsidies has been reconfirmed several times. Concrete policy actions in these areas are mainly visible at the Member State level, especially by looking at the number of countries that apply specific environmental taxes and charges. Nevertheless, in terms of its share in total tax revenue the role of eco-taxation remains modest and does not show an increasing trend.

The most obvious achievement in the area of reducing subsidies is probably the CAP reform. In other sectors, notably energy and transport, attempts at quantifying subsidies have been made by the EEA. A 'roadmap' for subsidy reform will be presented by the Commission in 2008.

7 ASSESSMENT OF THE NEED TO DEVELOP FURTHER EU LEGISLATION

7.1 Introduction

Article 3 of the 6EAP Decision lists the following ‘strategic approaches to meeting environmental objectives’:

- Development of new Community legislation and amendment of existing legislation, where appropriate;
- Encouraging more effective implementation and enforcement of Community legislation on the environment.
- Further efforts for integration of environmental protection requirements into the preparation, definition and implementation of Community policies and activities in the different policy areas.
- Promotion of sustainable production and consumption patterns through the use of a blend of instruments, including market based and economic instruments.
- Improving collaboration and partnership with enterprises with a view to improving their environmental performance and aiming at sustainable production patterns.
- To help ensure that individual consumers, enterprises and public bodies in their roles as purchasers, are better informed about the environmental impact of processes and products.
- To support environmental integration in the financial sector.

The first of these approaches refers explicitly to the need to develop new legislation, but several of the other approaches include substantial elements which may guide the development of legislation as well as the use of other policy instruments.

The 6EAP is characterized by an ambivalent attitude towards legislation as a key instrument of EU environmental policy. According to its preamble, ‘legislation remains central to meeting environmental challenges’, but ‘other options for achieving environmental objectives should also be considered.’ Article 1 of the 6EAP Decision further provides that ‘appropriate initiatives (...) with the aim of meeting the objectives [of the 6EAP] shall consist of *a range of measures including legislation* and the strategic approaches outlined in Article 3.’ (emphasis added)

It should be pointed out that, from the outset, the Commission was very reluctant to include any explicit references to new legislation in the 6EAP. Its proposal for what eventually became Article 3 of the 6EAP Decision only mentioned more effective implementation of *existing* legislation among the ‘strategic approaches’. A separate provision on development of new legislation was actually added by the Council, with the support of the European Parliament. But another provision makes it clear that legislation is by no means to be considered as the preferred option, by stating that the 6EAP ‘shall ensure that environmental objectives ... are met by *the most effective and appropriate means available*’ and that ‘full consideration shall be given to ... *all available options and instruments.*’ (Art. 2(3) – emphasis added)

There are some observable trends with respect to the purpose and types of legislative acts that have been adopted or proposed since 2002 and the legislative techniques used:

- **Increasing recourse to ‘framework’ Directives, a trend initiated before the 6EAP by the Water Framework Directive.** The term ‘framework’ Directive is typically used to denote a Directive laying down general objectives, principles and primarily procedural provisions with respect to its subject matter, either without the intent of further specifying the obligations of Member States through subsequent Directives (thus leaving them a considerable measure of discretion in terms of substantive environmental results to be achieved), or with a broad delegation of powers to the Commission for the adoption of binding implementing provisions through a ‘comitology’ procedure (thus bypassing the normal legislative procedure with the involvement of both the Council and the European Parliament). The recent proposal for a new Waste Framework Directive (COM(2005)667) is an example of the latter type, whereas the proposed Marine Strategy Directive (COM(2005)505) contains mostly features of the former type.
- **Many recent legislative initiatives stem primarily from the Commission’s policy objective of ‘simplification’ of the regulatory environment, rather than from the intention to achieve substantive advances in EU environmental policy.** While consolidation of several related items of legislation into a single legislative instrument, at the same time removing redundant, overlapping or obsolete provisions, can make EU law more transparent and easier to apply, such legislative initiatives under the guise of simplification are prone to being used incidentally as a vehicle for ‘stealth deregulation’ to roll back the existing level of protection in subtle but significant ways. For instance, the proposal for a new air quality framework Directive accompanying the Thematic Strategy on air pollution (COM(2005)447) refers to simplification as its main rationale. But it also contains new provisions that would allow Member States to derogate from existing ambient air quality standards in certain areas.
- **Some recent legislation serves primarily as a framework to delegate normative responsibilities to private actors, with further implementing legislation being contemplated only as a second-best, backup option.** The recent EuP Directive (2005/32/EC) is a case in point. Eco-design requirements for specific energy-using products will be laid down by delegated legislation only if objectives cannot be achieved through voluntary environmental agreements with industry. The Directive also provides a basis for recognizing standards developed by European standardization bodies, in accordance with the so-called ‘New Approach’. This approach may support innovation and avoids some of the problems that too detailed regulation of production processes may cause, but can also lead to non-transparent regulation that may complicate access to justice and hinder environmental progress that otherwise could be achieved through demand side management.

These trends are in line with the EU institutions' general 'Better Regulation' agenda, which was launched shortly before the 6EAP in the context of the Lisbon Strategy and the Commission's White Paper on European Governance of July 2001 (COM(2001) 428). The White Paper stressed that 'legislation is often only part of a broader solution' and called for 'improving the quality, effectiveness and simplicity of regulatory acts'. More specifically, it encouraged more frequent use of framework directives as well as recourse to 'co-regulation' mechanisms in cooperation with economic actors, and called for 'a comprehensive programme of simplification of existing rules'.

These policy orientations were confirmed in the Action Plan 'Simplifying and improving the regulatory environment', issued by the Commission in June 2002 (COM(2002) 278), and subsequently formalised in an Inter-institutional Agreement on better law-making signed by the Parliament, Council and Commission in December 2003. A new, comprehensive 'Strategy for the simplification of the regulatory environment' was presented by the Commission (COM(2005) 535) on the occasion of the re-launch of the Lisbon Strategy in Spring 2005, which reinforces the emphasis on reducing 'regulatory burdens' on industry and specifically targets certain sectors of EU environmental legislation, such as waste legislation, as priority areas for simplification.

The above-mentioned trends partly reflect the challenges of making environmental regulation more reflexive. While it is obvious that there are needs for change in the contents and ways in which legislation is structured, our assessment of progress on the 6EAP's four key environmental priorities and of the content and implementation of the Thematic Strategies suggests that legislation should remain a fundamental tool of EU environmental policy. As the Commission itself recognises in its mid-term review of the 6EAP, '[w]ell-designed regulation is the foundation of the EU's environmental policies'. (COM(2007) 225, p. 13) However, we recommend that the following interrelated issues be fully taken into account in the future development of EU environmental legislation.

- **Environmental policy integration.** This is referred to throughout the 6EAP and some success has been achieved at the level of general principles. The assessment has, however, shown that a deeper integration of environmental aspects into different policy areas is likely to require changes in the legislation that forms the core of the governance in the respective sectors.
- Related to the question of integration at the substantive level is the question of **integration at the procedural level**, in order to ensure that authorities and other key actors have possibilities to become involved in the actual implementation of the legislation.
- The need for adequate provisions for **monitoring and evaluation** of the environmental effectiveness of legislation in all policy areas which significantly affect the environment, in order to ensure that appropriate feedback is built into the legislation itself.
- The need to ensure that new legislation provides **incentives for innovation**.

7.2 Environmental policy integration

Policy integration at the level of general principles and overall objectives has long been enshrined in EU policy discourse. The weaknesses show up at a deeper level, i.e. in the specific legislation and its practical implementation. Two types of issues can be identified:

- The lack of integration across different environmental legal frameworks and preparations for new legislation. Thus the Commission Communication on 'An Energy Policy For Europe' (COM(2007)1) only includes a single reference to air pollution and quality that does not recognize potential problems such as the risks that increased biofuels utilisation may lead to higher particulate, PAH and VOC emissions, greatly influencing local air pollution and resulting health effects.
- The lack of integration into legislation which has primary objectives other than environmental protection, but which nevertheless has significant environmental impacts and sometimes sub-objectives. For example, compared to the wide range of environmental effects of agriculture, CAP legislation contains only limited references to environmental protection.

Enhancing environmental policy integration requires that approaches such as life-cycle thinking are built into policy-making. The recent review of recycling and recovery targets for packaging waste materials was the first example of using life-cycle thinking for policymaking, which shows that such approaches are possible in developing policy eventually leading to new legislation. In a similar way, life-cycle thinking, taking into account environmental effects within and outside Europe would be vital for, for example, the development of legislation concerning bio-energy.

Progress in integration has been made in the context of the Water Framework Directive (WFD), for example in the revision of the Bathing water and Groundwater Directives, as well as in the new Directive on flood prevention and management. Integration with the WFD is part of the Commission's objectives in the review process of the IPPC Directive.

The need for a fuller integration at EU level is particularly acute when quantitative and binding environmental targets are to be set. Quantitative targets have certain positive characteristics in that they make policy goals concrete, fairly easy to monitor, and show the preferred direction. The need for fuller integration of different policy goals and means applies especially to decisions concerning the use of resources such as bio-energy. A binding decision on, for example, target levels for use of bio-energy may force Member States to accept some environmental impacts that its implementation may cause. Targets defining the desirable state of the environment are less problematic if a Member State can freely choose the ways of achieving a particular environmental quality objective. However, even in this case it may be difficult to find an appropriate EU-wide balance between different targets and priorities as the conditions differ greatly between Member States.

Without an appropriate integrated analysis based on life-cycle thinking the targets may become counter-productive in some environmental dimension. Thus effects on resource efficiency, secondary pollution effects and effects on biodiversity should be of key concern in future legislative work, if progress is to be made across the key environmental priorities of the 6EAP. The experience of the WFD suggests that framework directives may more readily be capable of initiating integration than very specific legislation for sectoral issues. However, care should be taken to ensure that the framework legislation does not in itself become so administratively heavy that it drains resources from actual measures to improve environmental conditions, for example by shifting the administration's attention from monitoring environmental compliance towards reporting. This is, for example, one of the challenges of the proposed Soil Framework Directive (COM(2006) 232).

Life-cycle thinking can also address some of the environmental impacts of other sectors. Provisions encouraging policy integration can, for example, be introduced as mandatory criteria for support under sectoral funding instruments under the CAP, CFP or regional policy. This would be going one step further than, for example, cross-compliance and the agri-environmental scheme, by examining the fundamental incentives built into the policy, rather than only introducing an environmental add-on that can only provide some additional environmental benefits while general developments in the sector continue to exacerbate environmental problems. The need for such fundamental integration has been observed, for example, in relation to the challenges for sustainable use of water and the CAP. Tackling noise, for which relatively little progress has been made, and achieving clean air also depend crucially on integration of environmental provisions into many other areas of legislation such as that related to transport and infrastructure.

The Thematic Strategies have demonstrated an increased awareness of the need for integration. For example the Thematic Strategy on the sustainable use of natural resources outlines a long-term integrated framework for achieving a de-coupling of economic growth from resource consumption and the Thematic Strategy on waste recycling and prevention recognizes a number of legislative tasks. The main task is, however, to follow up the observed need for integration also in the specific pieces of legislation that the Thematic Strategies have identified as relevant. This is the area of the greatest challenges in developing legislation that truly achieves environmental policy integration, and also substantive results in terms of reduced environmental pressures.

7.3 Integration through procedures

A significant part of EU legislation sets only general policy goals and leaves the more concrete decisions to be made by Member States within the procedural framework created by directive. Hence, some of the potential environmental effects of legislation are uncertain and cannot be determined in advance, which makes integration through substantive provisions impossible at the level of legislation. Instead one can support integration by procedural means. Such procedural integration is hinted at in Article 3(2), (3) and (7) of the 6EAP Decision. Further integration requires a development of approaches that provide opportunities for different authorities and stakeholders to actively participate in the implementation of EU legislation.

The challenge is to create forms of participation that provide opportunities without becoming bogged down in process. Thus the comitology process for dealing with the definition of waste in the proposed waste directive may turn out to be counterproductive and stifle innovative solutions to waste problems. Another example of procedural integration is that of the BAT process under the IPPC Directive which has, despite a laborious structure, proven to offer some possibilities for joint consideration of pros and cons of different solutions. Its drawback is that the process of revising the reference documents is very slow.

Consultative procedures have been used and developed in the context of measures to mitigate climate change (ECCP), resulting in concrete proposals. Further institutionalization of such processes through legal provisions may be useful as a legal framework will give the procedures more structure and support the transparency of the entire process. Without a legal backing there is a risk that certain interests may receive undue weight in the policy development.

The cross-compliance requirements of the CAP have some potential for supporting key environmental objectives of the 6EAP, but to be effective, a procedural integration that makes the different actors meet and discuss in concrete terms on how to direct measures is likely to be required.

7.4 Provisions for monitoring and evaluation of the environmental effectiveness of legislation

There is some tension between specific legislation setting uniform EU-wide quantitative standards and targets and general objectives that Member States are obliged to consider. Common targets and uniform standards are in principle easy to monitor from a compliance point of view but may have unforeseen and unwanted side-effects. These include gross inefficiencies that can arise from a poor fit to the specific environmental context, which EU-wide targets and uniform standards cannot take into account. General objectives give the Member States possibilities to fit measures to the context thus increasing efficiency, but on the other hand may leave such room for national discretion that they can be implemented in ways that fail to reach the original objectives.

The current emphasis is on framework directives such as the Water Framework Directive, the revision of the Waste Framework Directive, and the proposed Soil Framework Directive, Marine Strategy Directive and Framework Directive on the sustainable use of pesticides. These tend to avoid specific quantitative targets and standards. Instead provisions are introduced that require Member States to develop strategies and procedures for establishing and achieving specific targets. Such procedural obligations are, from a compliance monitoring point of view, easy to follow and infringements reasonably easy to identify, but provide no legal guarantees that particular substantive environmental results will effectively be achieved.

Over time the plans and programmes required by framework directives may help to achieve the key objectives of the 6 EAP. However, progress is likely to be slow and a part of the planning activities can be expected to be unproductive or in some cases even counterproductive. A reporting scheme is slow as a means of detecting such inefficiencies because the focus is, for practical reasons on the activity rather than the results, and the results materialise slowly in any case. Thus, for example, the timeline for achieving good ecological status of waters is 2015. Actions to reduce GHG emissions are an exception in that several measures and the results of the actions in terms of aggregate emissions can be followed with minimal delay, allowing for the identification of Member States with severe problems to fulfill obligations at a relatively short notice. Even in this case there is, however, a need to understand at a deeper level why changes occur or do not occur, and if the resources spent on the various activities required by the legislation are justifiable.

In-depth analyses of the impacts and effectiveness of legislation is a prerequisite for achieving better regulation objectives. Such evaluations of legislation cannot be based only on routine overviews of the implementation and enforcement of Community environmental law or on the present system of reporting included in the legislation itself, which mainly serves administrative purposes. The reporting required by the Directives is unlikely to provide genuine understanding and new knowledge about the problems and successes related to the implementation of the legislation unless the information is used for more extensive assessments. To support the development and continuous improvement of the legislation linked to the implementation of the 6EAP there is a need to conduct systematic evaluations of legislation and its implementation. Such research-based evaluations can be encouraged through EU research funding but also by including provisions requiring periodic evaluation in the legislation itself. The EEA could be called upon more frequently by the Commission to carry out comprehensive assessments of the impacts and effectiveness of EU environmental legislation. Such evaluations could be more focused and go into greater depth than those undertaken for the preparation of the Thematic Strategies. Specific in-depth evaluations of specific legislation would strengthen the substance in, for example, the Commission's Environmental Policy Reviews (COM(2006) 70) and also provide a direct input into review and impact assessment processes, which so far have tended to be justifications for the chosen alternatives rather than in depth analyses of the problems to be addressed.

There is also a need to examine to what extent the environmental legislation has beneficial side effects such as fostering innovation in the spirit of the Lisbon Strategy, and whether other legislation primarily aiming at improving competitiveness or regional development has positive environmental side effects.

7.5 The need for innovation

Since the adoption of the EU Sustainable Development Strategy in 2001 there has been increased attention to the links between environmental policy and the strategy for growth and jobs, and the need 'to tap the synergies between the economy and the environment' (SEC(2006) 218). The importance of environmental innovation as a key solution to many environmental problems has been highlighted in the 2004 Environmental Technologies Action Plan (ETAP), the 2005 re-launch of the Lisbon Strategy and the renewal of the SDS in 2006. In the 6EAP Decision, technological innovations are explicitly referred to only in the context of climate change (Article 4), although the Commission's Communication on the 6 EAP (COM(2001) 31, p. 61) links innovation and novel technological solutions to several of the key areas such as waste and also regulation in general.

The lack of explicit references to innovation in the 6EAP Decision suggests that there is still a discrepancy between the general policy ideas that have emerged from the Lisbon Strategy and the SDS on the one hand, and the development of specific environmental policies and legislative instruments on the other. For example, there are obvious needs for innovations that allow for better conservation of biodiversity within legislation affecting key pressures on biodiversity such as agriculture and fisheries. Nevertheless the legislation aiming at biodiversity conservation tends to focus on immediate preservation rather than providing incentives for innovative practices.

Proposed new EU legislation should be examined from an environmental innovation point of view. There is evidence that there are differences in the ability of regulatory solutions to foster innovation. Hence, it would be important to identify potential barriers and drivers of environmental innovation in early phases of the legislative processes. In this way these could be systematically explored as part of the IA process in order to generate debate and focus on one of the key aspects of the sustainable development. If support for innovation remains only at a general abstract level without influencing the more specific legislation, the progress towards new types of solutions for present and emerging environmental problems is likely to be frustratingly slow.

8 CONCLUSIONS

In April 2007, the European Commission issued a Communication on the mid-term review of the implementation of the 6th Environmental Action Programme (6EAP) (COM(2007) 225). Agreed in 2002, the 6EAP sets out priority objectives to be attained by the EU in the field of environmental policy before 2012. It reflects a joint commitment of the European Parliament, the Council and the Commission and thus provides an important benchmark against which to evaluate the evolution of policy. According to the Commission, 'the EU is generally on-track with adopting the measures outlined in the Action Programme'.

This study of the implementation of the 6EAP has shown that the efforts of the institutions to attain the 'priority objectives set out' – to quote the terms of Article 175(3) of the Treaty – are quite deficient in many areas of environmental policy and that the state of implementation of the Programme at mid-term does not indicate that most of these objectives are likely to be effectively fulfilled before 2012. Progress towards the 6EAP objectives has been made across all four 'key environmental priorities', but in most cases this progress is not sufficient to put the EU on course to achieve the targets agreed upon in 2002 by 2012. The Commission's assertion that 'the EU is generally on-track' in implementing the 6EAP is not supported by the evidence presented in this study, unless one chooses to disregard the timeframe of the Programme and is prepared to equate Thematic Strategies with operational policy measures.

The Thematic Strategies, which have become central to the implementation of the 6EAP, were initially envisaged only as an intermediate policy tool for the purpose of identifying further proposals for legislative and other measures designed to achieve the objectives set forth in the Programme. This new procedural tool has increased the importance of the pre-legislative processes and created additional opportunities for stakeholder involvement and a more strategic approach to EU legislative policy. On the other hand, together with impact assessment – one of the cornerstones of the 'better regulation' policy introduced at the same time as the adoption of the 6EAP – the development of Thematic Strategies has considerably lengthened the duration of the environmental policy-making process, effectively delaying the formulation of concrete policy proposals and adoption of resulting measures.

While the Thematic Strategies are perceived as the main instrument for the delivery of the 6EAP, the focus on them should not lead policymakers to forget that many 'priority actions' identified in the Programme do not require the prior development of such Strategies. Paradoxically, the implementation of the 6EAP seems generally more advanced in areas where no Thematic Strategies were foreseen (such as, eg, climate change) and where relatively clear objectives had already been set independently of the 6EAP.

Though a lot of time has been lost during the first four years since the adoption of the 6EAP, the institutions can now seize the debate on the Commission's mid-term review as an opportunity to revitalize the implementation of the Programme and give new political impetus in all priority areas, whether or not covered by Thematic Strategies. Their credibility ultimately depends on their ability to deliver objectives which they have themselves laid down only five years ago to respond to the major environmental challenges facing Europe and the world at the beginning of this new century.

9 REFERENCES

- EEA (2004), Energy subsidies in the European Union: A brief overview. EEA Technical report no. 1/2004. European Environment Agency, Copenhagen.
- EEA (2005), Market-based instruments for environmental policy in Europe. EEA Technical report no. 8/2005. European Environment Agency, Copenhagen.
- EEA (2006), Using the market for cost-effective environmental policy. Market-based instruments in Europe. EEA Report no. 1/2006. European Environment Agency, Copenhagen.
- EEA (2007), Size, structure and distribution of transport subsidies in Europe. EEA Technical report no. 3/2007. European Environment Agency, Copenhagen.
- Eijsbouts, W J, Jans, J H and Vogelaar, F O W (2004) *Europees Recht: Algemeen Deel*, Europa Law Publishing, Groningen, p 58.
- Europe Economics (2006), Evaluation of State aid for the coal industry. A report by Europe Economics and Fraunhofer ISI with BSR Sustainability and the Krakow Institute for Sustainable Energy. London, 20 October 2006.
- Eurostat (2007), Taxation trends in the European Union. Data for the EU Member States and Norway. 2007 edition. Luxembourg.
- Harrison, D., D. Radov, and J. Patchett (2004), Evaluation of the Feasibility of Alternative Market-Based Mechanisms To Promote Low-Emission Shipping In European Union Sea Areas. NERA Economic Consulting, London, March 2004.
- Harrison, D., D. Radov, J. Patchett, P. Klevnas, A. Lenkoski, P. Reschke, and A. Foss (2005), Economic Instruments for Reducing Ship Emissions in the European Union. NERA Economic Consulting, London, September 2005.
- Krämer, L (2000) *EC Environmental Law*, 4th ed., Sweet & Maxwell. London. p 44.
- Krämer, L (1995) *E.C. Treaty and Environmental Law*, 2nd ed., London: Sweet & Maxwell, p 83.
- OECD (2005), Environmentally Harmful Subsidies: Challenges for Reform. Organisation for Economic Co-operation and Development, Paris.
- OECD (2006), Agricultural Policies in OECD Countries at a Glance 2006. Organisation for Economic Co-operation and Development, Paris.
- Oosterhuis, F. (2001), Energy subsidies in the European Union. IVM publication W-01/21, Instituut voor Milieuvraagstukken, Vrije Universiteit, Amsterdam, November 2001.
- Pallemaerts, M, Wilkinson, D, Bowyer, C, Brown, J, Farmer, A, Farmer, M, Herodes, M, Hjerp, P, Miller, C, Monkhouse, C, Skinner, I, ten Brink, P and Adelle, C (2006), Drowning in Process? The Implementation of the EU's 6th Environmental Action Programme. Report for the European Environmental Bureau. IEEP, London.
- Schleich, Joachim, Regina Betz and Karoline Rogge, 'EU Emission Trading – Better Job Second Time Around? Working Paper Sustainability and Innovation Nr. S 2/2007, Fraunhofer Institute Systems and Innovation Research.

ACRONYMS

BREFs	Best Available Techniques Reference Documents
CALM	Community Noise Research Strategy Plan
CAFÉ	Clean Air for Europe
CAP	Common Agricultural Policy
CEP	Country Environmental Profiles
CFP	Common Fisheries Policy
CHP	Combined heat and power production
CIP	Competitiveness and Innovation Framework Programme
CLRTAP	Convention on Long Range Transboundary Air Pollution
CO ₂	Carbon dioxide
COP	Conference of the Parties
dB	Decibels
DG	Directorate General
DG TREN	Directorate General for Transport and Energy
5EAP	Fifth Environmental Action Programme
6EAP	Sixth Environmental Action Programme
EAFRD	European Agricultural Fund for Rural Development
EAGGF	European Agricultural Guidance and Guarantee Fund
EC	European Community
ECCP	European Climate Change Programme
ECCP II	Second European Climate Change Programme
ECHA	European Chemicals Agency
EEA	European Environment Agency
EESC	European Economic and Social Committee
EFF	European Fisheries Fund
EFFIS	Regulation a European Forest Fire Information System
EFSA	European Food Safety Authority
EIA	Environmental Impact Assessment
EMAS	Eco-Management and Audit Scheme
EMSA	European Maritime Safety Agency
EP	European Parliament
EPBRS	European Platform for Biodiversity Research
ETAP	Environmental Technologies Action Plan

ETS	Emissions Trading Scheme
EU	European Union
EuP	Energy using products
F-gases	Fluorinated gases
FP6	Sixth Framework Programme for research and technological development
FP7	Seventh Framework Programme for research, technological development and demonstration activities
GDP	Gross Domestic Product
GHG	Greenhouse gas
GMOs	Genetically modified organisms
GM	Genetically modified
HFC	Hydrofluorocarbons
IAS	Invasive alien species
IIAS	International Institute for Applied Systems Analysis
ICZM	Integrated Coastal Zone Management
IEA	International Energy Agency
IEE	Intelligent Energy for Europe
IMO	International Maritime Organisation
IMPEL	EU Network for the Implementation and Enforcement of Environmental Law
IPA	Instrument for Pre-accession Assistance
IPP	Integrated Product Policy
IPPC	Integrated Pollution Prevention and Control
JREC	Johannesburg Renewable Energy Coalition
LCA	Lifecycle Assessment
LCPD	Large Combustion Plants Directive
LIFE	The Financial Instrument for the Environment
MEPS	Minimum Energy Performance Standards
MBI	Market-based instrument
MIPD	Multi-annual Indicative Planning Document
MOP	Meeting of the Parties
MSD	Marine Strategy Directive
Mt	Million tonnes
MTFR	Maximum Technically Feasible Reduction
NAPs	National Allocation Plans
NECD	National Emissions Ceiling Directive

NO _x	Nitrogen oxides
N ₂ O	Nitrous oxide
NGOs	Non-governmental organisations
OECD	Organisation for Economic Cooperation and Development
PAH	Polycyclic aromatic hydrocarbon
PEBLDS	Pan-European Biological and Landscape Diversity Strategy
PM	Particulate matter
PPP	Plant protection products
RD & D	Research, development and demonstration
REACH	Registration, Evaluation and Authorisation of Chemicals
SACs	Special Areas of Conservation
SDS	EU Strategy for Sustainable Development
SEA	Strategic Environmental Assessment
SMEs	Small and medium-sized enterprises
SO _x	Sulphur oxides
SPAs	Special Protected Areas
TAC	Total allowable catch
TFS	Trans-frontier shipment of waste
TS	Thematic Strategy
UK	United Kingdom
VOC	Volatile organic compound
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organisation
WEEE	Waste electronic and electrical equipment
WFD	Water Framework Directive
WHO	World Health Organisation