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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

on the

Mid-term review of the Sixth Community Environment Action Programme

IMPACT ASSESSMENT

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1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Purpose of this Impact Assessment

Virtually since its origin in the mid-1970s, EU environment policy has been structured and planned by successive action programmes. These action programmes have set out the orientations and the main environmental priorities for a given period of time, the aim being to ensure a consistent and coherent strategy for the delivery of EU environment policy.

The Sixth Community Environment Action Programme[1] (hereinafter: "6th EAP") establishes the Community framework for environment policy for the period from July 2002 to July 2012. Article 11(1) of the 6th EAP calls for a mid-term review in the fourth year of operation of the Programme, in order to, "*evaluate the progress made in its implementation, together with associated environmental trends and prospects. This should be done on the basis of a comprehensive set of indicators*"[2]. The mid-term review should be completed in the "*fourth year of operation of the Programme*", and a Report on it should be submitted subsequently to the European Parliament and Council[3].

Correspondingly, the Communication on the mid-term review of the 6th EAP to which this Impact Assessment refers is a Report which summarises progress made with the implementation of the 6th EAP based on an assessment of the state of the environment and contains future orientations for the Community's environment policy for the remaining 6th EAP period (i.e. up to 2012), taking into account the changed policy context, notably the renewed Sustainable Development Strategy and the Lisbon Strategy as well as the Commission's Better Regulation agenda.

This Impact Assessment's scope and methodology are intended to be proportionate to the objective and nature of the mid-term review to which it refers. Since this is a mid-term review of an existing policy framework whose duration has six more years to run, the strategic options are limited and the impact assessment carried out is therefore essentially qualitative[4]. Furthermore, a full review of the implementation of the 6th EAP would only be possible towards the end of 2010, when the 6th EAP ends.

The remainder of this Section sets out the methodology of this Impact Assessment and provides details on the consultation of interested parties. Section 2 focuses on the problem definition. Section 3 spells out the objectives of the mid-term review, followed by policy options in Section 4. Section 5 assesses the impacts of the options, which are then compared in Section 6. Section 7 identifies the monitoring and evaluation arrangements.

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1 Decision No 1600/2002/EC of the European Parliament and the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme (OJ L 242, 19.9.2002, p. 1).

2 See Article 11(1) of the 6th EAP. Recital 35 specifies that "*on the basis of an assessment of the state of the environment, taking account of regular information provided by the European Environment Agency, a review of progress and an assessment of the need to change orientation should be made at the mid-term point of the Programme*". Article 4 (4) stipulates: "*The mid-term report, in which the Commission evaluates the progress made in implementing the Programme, shall include a review of the thematic strategies*".

3 See Article 11(2) of the 6th EAP.

4 Following the principle of proportionate analysis indicated in the Impact Assessment Guidelines - SEC(2005) 791.

1.2. Collection of information and data

Preparation for the 6th EAP mid-term review started in 2004. It began with the collection of information and data from an extensive number of sources and the initiation of a consultation process with a wide range of interested parties. The following paragraphs present a summary of the main procedural steps followed in the collection of information and data, as well as the results of the various consultations.

1.2.1. Internal expertise

During 2004 and 2005, the Commission services in the Environment Directorate General ('DG Environment') drafted a series of "summary reviews", covering the four priority areas and the two cross-cutting areas identified in the 6th EAP: Climate Change; Nature & Biodiversity; Environmental and Health and Quality of Life; Sustainable Use and Management of Natural Resources and Wastes; Implementation & Enforcement and Policy Instruments; and Strategic Approaches. These summary reviews sought to identify the key actions taken to achieve the main objectives established by the 6th EAP and to provide a preliminary evaluation of the state of the environment in each of the given areas.

The summary reviews were complemented by information from a number of external sources. These were the points of departure for further discussions with a panel of experts, specially convened for the purpose, which met in Brussels on 28 April 2006 (see below).

Other important internal sources of information were the impact assessments the Commission made for its different initiatives, not only in the field of the environment, but also in other policy areas such as energy and transport.

1.2.2. External expertise

Together with the information provided by the Commission services, a considerable number of external expert sources were consulted. These included the report of the European Environment Agency (EEA) entitled, "The EU Environment - State and Outlook 2005", and the EEA 'Core Set of Indicators' covering a wide range of physical data relating to the EU environment, provided primary information. These were the main sources of quantitative and environmental indicators data on changes in the state of the environment in the EU. To provide a more global reference perspective, the 2005 UN Millennium Ecosystem Assessment was also used extensively as a reference work.

Other sources of sector-specific information included the International Energy Agency World Energy Outlook (2005); background and discussion papers prepared by the Finnish Presidency of the European Union for the Informal Meeting of Environmental Ministers on 14-16 July 2006[5], notably the paper entitled, 'Towards a new generation of EU Environment Policy'; and the Report of the Court of Auditors on the integration of environmental considerations into the Commission's Development Co-operation policy proposals[6].

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[5] "Going global on eco-efficiency - Finland´s initiative towards a new generation of environmental policy" Background and Discussion papers for the Informal Meeting of Environmental Ministers. Turku, 14th -16th July 2006. Ministry of Environment, Finland.

[6] Special Report No 6/2006 "The environmental aspects of the Commission's development co-operation". Court of Auditors (still not published in the Official Journal of the European Communities. Available in: http://www.eca.europa.eu/audit_reports/special_reports/docs/2006/rs06_06en.pdf).

Finally, a report by the Institute for European Environmental Policy[7], prepared for the European Environmental Bureau (a consortium of environmental non-government organisations) as a basis for their commentary, provided a useful, independent critical view on the progress of policy so far under the 6th EAP.

On 28 April 2006, a panel of environment experts was convened to assess the summary reviews on the key priority areas of the 6th EAP, and to comment. The main conclusions of the panel of experts are summarised thus:

- The four priority areas identified by the 6th EAP should clearly remain current for the remainder of the period. In the view of the expert panel, although some progress under the 6th EAP has been made, further work remains to be done if all objectives are to be reached. Moreover, in many environment policy areas, it would be premature to try to assess the results of policies adopted so far – i.e. just 4 years into a 10-year programme – because the results of implementation will, in most cases, not yet be apparent.

- Cross-cutting aspects of policy, in particular integration and implementation, need considerably more emphasis. Innovative – even radical – ways to improve implementation and enforcement need to be further explored. If the decision is taken to adopt further measures, EU action through regulatory instruments is to be preferred over voluntary schemes or other 'soft' approaches. The experts feared that over-reliance on national action plans to implement policy would lead to excessive divergence, in terms of achievements, between Member States.

- Environment should be a more readily integrated component in other sectors whose policies are based on sustainable development principles, and its importance in those other policy areas – especially those which clearly impact the environment – should be upgraded.

- Research in the field of environment should be more explicitly encouraged and financed at EU level. Conversely, a lack of incontrovertible research evidence in support of a particular policy line ought not to be used as an excuse for inaction.

- Sufficient budget must be made available at EU and national levels to meet the 6th EAP objectives. Financing for environment action should stem not only from environmental programmes, such as LIFE, but further synergies with other policies and funds should be exploited. EU financial resources should be programmed so as to be complementary to environment funding by Member States.

- Finally, there was a general view that more political effort should be made in order to educate and involve citizens and to motivate the business, industrial and other competitive and non-trading sectors in favour of the achievement of environmental objectives[8].

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[7] 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.

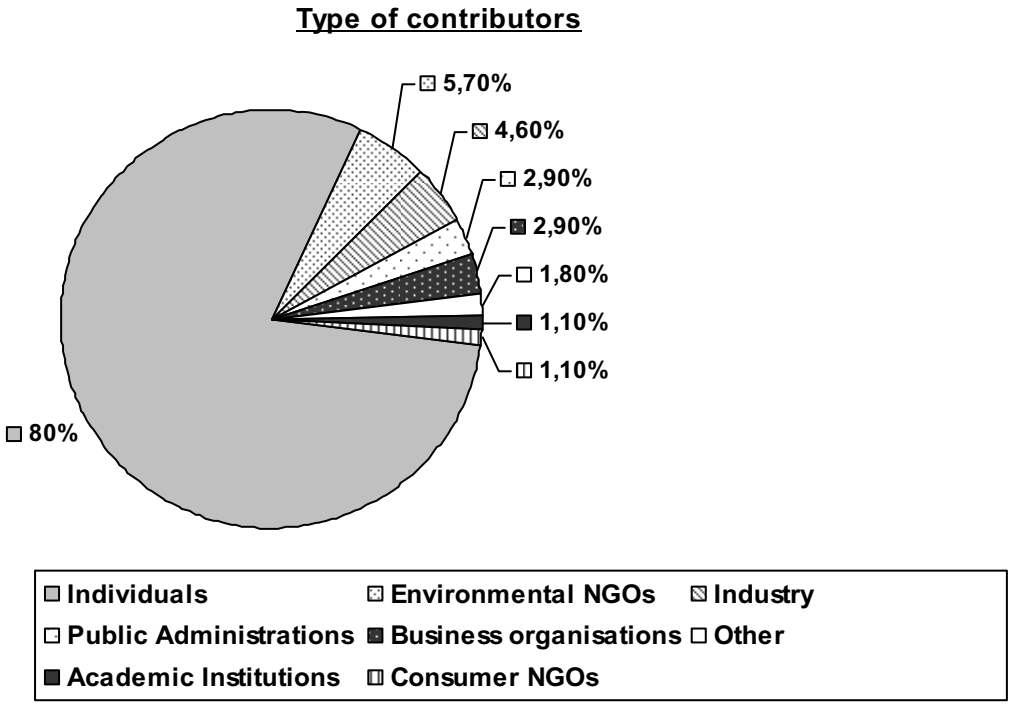
[8] Other comments from the experts concerned specifically the evaluation of the Thematic Strategies and the content of the summary reviews (the need of including a baseline scenario, more statistical information and benchmarking data on the state of the environment, the need to be clearer on where the responsibility lies for the implementation of the 6th EAP…).

1.3. Consultation of interested parties

1.3.1. Public stakeholder consultation

A public internet consultation on the mid-term review of the 6th EAP was launched on the Europa "*Your Voice*" website, where it ran from 29 May to 17 July 2006. The purpose of this consultation was to gather views from the general public on the 6th EAP, to see how people perceived the progress made so far, and to gather views on which main issues should matter most in the future. The consultation consisted of some background information on the 6th EAP, and a multiple choice questionnaire to be completed on an anonymous basis.

280 replies were received. The consultation was not addressed to a particular sector or group of stakeholders, but to the general public. 80% of the replies came from individuals rather than organisations. Of the remaining 20%, replies were equally split between environmental NGOs, Industry, Public administrations, Business organisations, Academic institutions, Consumers' organisations and 'others'.



Most of the replies came from participants who considered themselves to be 'well informed' (37.1%) or 'informed' (35.7%) about environmental issues. The general comments that can be made about the public consultation are summarised below[9].

- The first set of questions concerned general issues on environmental priorities and on the Commission's consultation policy regarding the seven Thematic Strategies which the 6th EAP contains. There was a general satisfaction on the way and extent to which the Commission had engaged in consultation with stakeholders. However, an important percentage of participants said that they could not answer this question.

[9] A full report on the replies received through the public consultation can be found at: http://ec.europa.eu/yourvoice/consultations/index_en.htm

- Two main issues seemed to be of particular concern to the participants: sustainable production and consumption (42.5%) and the reduction of greenhouse gases (GHG) emissions (39.6%). These concerns were followed in the ranking by the need for "sustainable use of land and sea" (30.4%) and issues associated with biodiversity (22.5%).

- On the progress made over the past four years in meeting the 6th EAP objectives, participants were highly dissatisfied with the progress made on nature and biodiversity (49.3% disagreed with the statement that the EU had made satisfactory progress). This revealed the keen lack of visibility of the work over the last 4 years at EU level on nature and biodiversity – a 6th EAP priority area.

Furthermore, in some areas such as climate change, while a high percentage of participants saw some progress (47.9%), this was often qualified by the statement that important areas remain insufficiently addressed or that further measures need to be adopted.

- Regarding climate change, the EU Emissions Trading Scheme was the most highly-valued policy instrument, closely followed by 'promotion of renewable energies', the 'agreements with car manufacturers on CO2 emissions reduction' and the policies on 'energy labelling'. The replies indicated that participants placed the need to ensure effective action over several policy areas higher than the need to set overall priorities in tackling greenhouse gas emissions. One area standing out as more important than others was 'tackling greenhouse gas emissions from transport'.

The majority of participants agreed with the priorities set up in the Commission paper "Winning the Battle against Climate Change"[10] (53.2%). Moreover, 88.6% agreed or tended to agree that climate change policy could also serve to create economic growth and competitiveness for the EU.

- On nature and biodiversity issues, opinions were divided on the question as to whether EU environment policy actions were adequate and effective in protecting nature and biodiversity across the European Union. 45% considered that they were not sufficient, while 41.1% said that this would depend on how efficiently Member States implemented them.

A clearer message came from the question about the EU taking further action on GMO (Genetically Modified Organisms) risk management, in order to prevent environmental damage. Here a clear majority was in favour of further measures.

Similarly, there was broad support for further integration of policies aiming to protect nature and wildlife into other sectoral policies such as transport, energy, agriculture, fisheries and regional development, in order to reduce negative impacts on the environment and to improve the long-term competitiveness of these sectors.

On the other hand, the participants preferred not to privilege any particular line of policy in contributing to the protection of nature and biodiversity. Developing and adopting the framework for dealing with climate change mitigation and fragmentation of habitats, the protection of marine eco-systems and seas, the focus on implementation of the Habitats and

[10] COM(2005) 35, 9.2.2005.

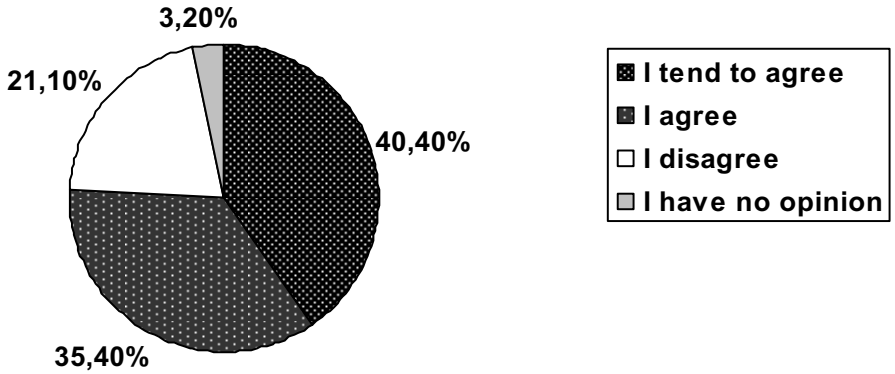
Birds Directives and exploring and filling possible gaps in the legal framework, were all felt to be necessary to achieve the objectives.

- In the area of sustainable use and management of natural resources and wastes, there was not a clear priority preference in favour of any particular policy action, but importance was attached to encouraging 'sound and sustainable product design'. The general opinion was that resources, wastes and products should all be tackled together, but that more priority had to be given to some other aspects, in particular waste prevention and eco-design.

- The environment policy role of the EU in the international sphere emerged as an important issue. 69.3% of the participants were of the opinion that the EU should do more to integrate environmental concerns into all areas of international relations. Among the tools to do this, the promotion of sustainable practices in foreign investments and export credits was the most favoured.

- Finally, the questionnaire included a set of general questions on the way forward and future actions to be taken. In this respect, the majority of participants (66%) agreed or tended to agree that the four priority areas established by the 6th EAP remain valid for the remaining 6th EAP period and should be retained.

Support to the four priority areas of the 6th EAP[11]



- As regards the 'strategic approaches' contained in the 6th EAP (policy implementation, integration of environment into other policies, collaboration with the business and industrial sectors, development of new Community legislation and revision of the existing *acquis*), participants did not show a clear preference, but favoured tackling environmental policy challenges through a combination of instruments. However, more effective implementation of Community legislation at the Member State level was identified as an important area for a revised strategic approach.

[11] Results to the question: "Do you agree that the four priority areas defined in the EU action programme to protect the environment (climate change, biodiversity, health & quality of life and sustainable use of natural resources and wastes) are appropriate in contributing to environmental protection and that its scope should not be widened?".

1.3.2. Member State consultation

Member States were also consulted on the mid-term review of the 6th EAP, notably within the framework of the Environment Policy Review Group (EPRG)[12] of 29 March 2006.

Member States shared the view that the 6th EAP priorities should be retained for the remaining 6th EAP period. Some Member States considered that efforts should be concentrated mainly in one or other of these areas, while the majority favoured particular attention on Climate Change and Biodiversity issues, as well as further action in the area of sustainable production and consumption. Certain Member States also underlined other issues such as the use of land and sea and the need for more environment research.

There was also a general view that the mid-term review should be considered in the light of the renewed EU Sustainable Development Strategy (notably in relation to the importance of reaching sustainable production and consumption.) The mid-term review was seen as an opportunity to highlight the linkages between the 6th EAP and the Lisbon Agenda and the complementarity of their respective objectives.

In the area of climate change, many Member States underlined the need for reaching an international agreement for the post-2012 period and called for the EU to maintain the international lead in that process. Some Member States also requested the Commission to propose further measures at EU level, in particular in the field of transport, energy and the construction industry.

Most Member States pointed out the practical difficulties underlying the 2010 target to halt biodiversity loss in the EU. The Action Plan on Biodiversity was largely supported and further measures were suggested, such as the inclusion of biodiversity targets in other sectoral policies and taking additional action to ensure the resistance of ecosystems to damage from the effects of climate change. Some Member States also called for new measures in favour of the marine environment, GMOs, forestry, and protection of habitats. The financing of the Natura 2000 network remained a concern for some Member States.

Some concerns were raised on the need for further steps on the protection of human health against threats from sources such as air pollution from transport, and pollution from chemical products. The implementation of the REACH (Registration, Evaluation and Authorisation of Chemicals) Regulation was strongly supported by Member States. There was, however, some dissatisfaction with the delays in the adoption of EU water quality legislation and a few pointed out the necessity of anticipating potential risks to health from certain new technologies, citing nanotechnologies. They also underlined the importance of maximising its potential benefits, however.

The sustainable use and management of natural resources and wastes as highlighted as a key area of concern in relation to sustainable production and consumption. Overall, Member States confirmed their support for the objective of decoupling economic growth from environmental degradation. Several Member States expressed their disappointment with the lack of targets in the Thematic Strategies on Natural Resources and Wastes and expected that waste reduction targets would be established under the forthcoming EU Action Plan on Production and Consumption.

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[12] The EPRG is formed by representatives of the Member States at the level of Directors-Generals and meets regularly to discuss selected environmental policy issues.

There was a general view among the Member States that more progress would be needed regarding the goals set by the "strategic approaches" section of the 6th EAP. Member States agreed that implementation of environment legislation and the process of integration of environmental concerns into other policy areas ('Cardiff progress') needed to be revitalised. Indeed, integration was seen as an important tool for bridging the implementation gap between policy objectives and actual achievement of the required changes in the environment. Integration of environmental objectives should also be taken into account by the Community financing programmes, which should more readily include environmental criteria in their programming requirements.

Certain Member States expressed the view that legislation is to be preferred over so-called "soft-law" approaches. Others called for more flexible policies as one way to solve implementation problems, arguing that better results would ensue if flexibility to take account of local conditions could be maximised. The majority opinion considered the recourse to co-ordination mechanisms (such as exchange of best practices, peer review and IMPEL) as a useful complement to regulatory action and supported further use of economic and market-based instruments and reduction and/or elimination of subsidies that can bring about negative environmental impacts. Member States also agreed to increase the use of impact assessments and strategic environmental assessments, as well as pursuing a more systematic application of "Better Regulation" principles.

On the international dimension of environment policy, there was overwhelming support for the statement that environmental goals need to be reflected more consistently in EU external relations policies. Most Member States favoured EU support for the creation of an environment organisation at international level, under UN auspices.

1.3.3. Input from specific stakeholders

In parallel with the online public consultation, the Commission undertook consultations with specific groups of stakeholders. These covered business associations, the EU eco-innovation industry, social partners, consumer associations and non-governmental organisations (NGOs).

All stakeholders agreed on retaining the 6th EAP priority areas and objectives. Although recognising that progress has been made in a number of areas, all stakeholders also agreed that effective implementation of the 6th EAP remained a key concern. Several underlined particular shortcomings in the areas of biodiversity and waste management.

Stakeholders indicated that the consequences of inadequate policy implementation are numerous. In addition to the obvious element that agreed policy objectives are not being met if implementation is under-resourced or inadequate for some other reason, inadequate implementation is seen to create uneven business competitivity conditions. For example, the potential for investment in clean technologies and for job creation in the eco-innovation industry is almost certainly under-exploited, due in part to uncertainty (and so less investment) among those in the industry about future demand for their products and expertise.

Stakeholders proposed different ways of addressing the 'implementation gap'. For trade unions, employees associations and environmental NGOs, the incremental trend towards "soft law" instruments – e.g. voluntary agreements, new standards, codes of conduct – undermined progress towards environment policy objectives. Some NGOs criticised the use of 'framework Directives', which they saw as relying on reporting obligations rather than on specific targets and deadlines. They feared that the Thematic Strategies were 'empty shells' and emphasised

that they should be followed-up by appropriate legislative and other policy action. In the view of most trade unions and NGOs, soft law instruments should be complementary to legislation and should only be used when lack of political impetus stood in the way of regulation at EU level. Most NGOs called for stronger EU implementation and enforcement strategies and for an increase in the resources being deployed on implementation within the Commission.

Although most business associations called for clear targets in EU environment legislation, they also favoured more freedom of manoeuvre on the means of achieving those targets, supporting an increased use of flexible instruments. They asked for legislation to be accompanied by a detailed assessment of the impact of all expected economic, social and environmental outcomes.

All stakeholders expressed concerns about the use of impact assessments when proposing new legislation. Consumer associations called for the equal weighting of all three dimensions of sustainable development in all EU sectoral policies. In addition, trade unions underlined the need to ensure sufficient financial capacity to take the necessary actions to implement environmental laws and suggested to quantify the investments needed for effective implementation.

Most stakeholders also expressed concerns about the integration of environmental considerations into other EU policies. For instance, trade unions mentioned that the latest employment guidelines did not mention environment, nor any specific action to develop education and training on environment. They considered that employment policies should better integrate environmental concerns and that 'professionalisation' of environmental protection could significantly contribute to the creation of new jobs.

In general, all stakeholders agreed that there should be more coherence between environment policy and other policies, in particular, energy and transport. Both trade unions and environmental NGOs agreed that additional measures would be needed to improve the quality of the environment and employment in the EU. Hence the desirability of ecological taxes, shifting the fiscal burden from labour towards environmental protection; and broader application of the *polluter pays principle* was also supported. NGOs also favoured the phasing out of all subsidies and state-aids that impacted negatively on the environment.

Trade unions, NGOs and eco-innovation industries highlighted the general absence of 'real pricing' for the use and exploitation of natural resources – taking into account the cost of remedial work to maintain the quality of the environment, for example – and urged the EU to promote greater resource and energy efficiency.

Stakeholders emphasised the importance of promoting research and technology in all areas. Eco-innovation companies claimed that there was a need for more intensive use of market-based instruments, to better promote clean technologies in trade and development policies. Partnerships with developing countries should also take into account the opportunity to encourage sustainable development and trade. Trade unions were of the opinion that market-based instruments such as the EU Emissions Trading Scheme should be designed to accommodate investments in clean technologies.

Stakeholders also called for a stronger EU role in the international environmental arena. For trade unions, this was seen as the way to develop global solutions to global problems, while not interfering with global competitiveness. They favoured an intensified dialogue on climate change between the EU and key third countries such as India and China. Environmental

NGOs recognised the strong leadership shown by the EU in addressing environmental challenges. They called for the Member States to be more explicit and supportive of the EU role on environment policy development.

2. PROBLEM DEFINITION

The 6th EAP mid-term review addresses the issue of optimising the Community framework for action in the field of environment, to address the currently remaining environmental challenges efficiently and effectively during the rest of the 6th EAP period.

There are three main policy drivers. Firstly, the current state of the environment. Secondly, the policy context in which EU environmental policy is to be developed. Thirdly, identification of the deeper underlying problems, following on from the assessment of progress made so far.

2.1. The current state of the environment

Based on information from independent sources such as the European Environment Agency and Eurostat's Sustainable Development Indicators, the current state of the environment can be summarised as follows. The Annex to this Impact Assessment provides illustrative examples of trends and prospects in the four 6th EAP priority areas, based on statistical data and indicators and contains illustrative examples of actions taken so far in these four priority areas.

2.1.1. Climate change

One of the main causes of climate change is the large rise in concentrations of greenhouse gases in the atmosphere. Under the Kyoto Protocol, the EC has agreed to reduce its greenhouse gas (GHG) emissions by 8 % by 2008–12, from base year levels. In 2004, total GHG emissions in the EU-15[6] were 1.0% lower than the base year levels. Total EU-25 (GHG) amounted to 4985 Mt CO_2 equivalent in 2004, i.e. 7% below base year levels[13].

The most important greenhouse gas is CO_2, accounting for 83% of total EU-25 greenhouse gas emissions in 2004. From 1990 to 2000 significant reductions in greenhouse gas emissions were achieved, mainly as a result of fuel-switching from coal to gas, combined with an increased use of co-generation (heat and power), and slow economic growth. In contrast, between 2000 and 2004, annual greenhouse gas emissions from the EU-25 have increased by 0.6% on average, mainly due to electricity production and transport, combined with a slow-down in switching to lower-carbon fuel sources in power stations. Despite this rise, EU-15 emissions stood 0,9% lower than in the base year (mostly 1990) even though the EU-15 recorded economic growth of 32% over the same period.

Implementation of existing and additional proposed measures is projected to reduce EU-25 greenhouse gas emissions to 9.3% below 1990 levels by 2010 thus meeting the Kyoto targets. However, the longer-term EU targets for emissions and temperature rises are not expected to be met at the current rate of progress. Projections up to 2030 for the EU-15 show a 14% rise

[13] Without greenhouse gas emissions and removals by Land Use, Land Use Change and Forestry (LULUCF) taken into account.

of greenhouse gas emissions above 1990 levels, which would significantly affect agricultural productivity, ecosystems, flood defences and human health, and economies as a whole.

The energy sector is the biggest contributor of CO_2 emissions[14]. Under current energy policies, the International Energy Agency foresees a rise in global energy demand of at least 50% between 2005 and 2030[15], with 73% of the increase being satisfied by coal, gas and oil. In order to contribute to a global reduction of greenhouse gas emissions, the EU has set an indicative target of 12% of energy to be provided from renewable sources (as a proportion of total energy use) and 21% of electricity, by 2010. The revised EU Sustainable Development Strategy envisages a target of 15% by 2015. Renewable energy currently provides 6% of the EU's total energy supply. Current projections are that renewable energy sources (as a proportion of total energy use in the EU) will reach only 7.5% by 2010. The Commission has recently proposed a target of 20% of renewable energy consumption by 2020 in the renewable energy roadmap for the 21st Century within the New Energy Policy for Europe.

Transport is the sector with the fastest growing greenhouse gas emissions, increases running at an average of 1% per year in the EU. Greenhouse gas emissions from transport increased in the EU by more than 22% between 1990 and 2003. The growth can be attributed mainly to increases in passenger road vehicles, freight road transport, aviation and maritime shipping[16].

2.1.2. Nature and biodiversity

In the EU, biodiversity loss is continuing at an unprecedented rate. The UN *Millennium Ecosystem Assessment* recently concluded that 60% of the 'ecosystem services' that support life on Earth (e.g. the provision, purification and regulation of water, fisheries, regulation of air quality, climate etc) are being degraded or used unsustainably. The principle causes of biodiversity loss (i.e. the permanent loss of species in excess of natural background rates of loss) are changes in habitats caused by human development. These include intensive agricultural and industrial production systems, construction, extractive industries, invasion of native animal and plant habitats by alien species, over-exploitation (fishing and hunting), industrial and traffic pollution, and climate change.

Since the 1950s, Europe has lost more than half of its wetlands and high-nature-value farmland. At the species level, 42% of Europe's native mammals, 43% of birds, 45% of butterflies, 30% of amphibians, 45% of reptiles and 52% of freshwater fish are threatened with extinction. Most major marine fish stocks are below safe biological limits for their survival. In 2003, 22% of total catches were outside safe biological limits, marking a substantial worsening compared to 2002 (8%). Some 800 plant species in Europe are at risk of global extinction. And there are unknown but potentially significant changes in lower life forms, including invertebrate and microbial species. This loss of species and decline in abundance is accompanied by significant loss of genetic diversity.

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[14] In 2004, the highest emitting sector in the EU-25 was 'Energy' (which includes transport) accounting for 80% of total EU-25 emissions. The second largest sector was 'Agriculture' (9 %), followed by Industrial processes' (8 %). Within the energy sector public electricity and heat production, accounted for 30% of the emissions, followed by road transport (24%), manufacturing industries and construction (16%) and residential (12%).

[15] IEA World Energy Outlook, 2005.

[16] See EU-environment related indicators 2006. See also EEA report "Transport and environment: facing a dilemma".

Progress towards meeting the 2010 target is uneven and in some sectors it is unlikely to be met[17]. For *farmlands and mountain areas*[18], the target is unlikely to be reached without additional efforts, and similarly for *freshwater ecosystems* although water quality of many rivers and lakes has improved. However, many freshwater species are threatened or at risk of extinction. But there is progress in Europe's *forests*, with sustainable forest management and the certification of products from sustainably-managed forests increasing. The assessment of forest biodiversity is on-going and new indicators of forest special patterns and forest fragmentation have been proposed in the EC. However, forest fires pose a major threat to EU forests and future trends in climate may worsen this situation. The loss of biodiversity in all European *seas and along many coasts* is considerable, due to continuing pollution from land-based sources, oil spills, the depletion of fish stocks, the fragility of threatened and endangered marine species and increased soil erosion along coastlines. There is some progress in conserving *wetlands* designated as sites of international importance, but biodiversity loss in Europe's wetlands is continuing, i.a. due to poor land-planning (e.g. urbanisation and transport development, tourism and recreation). *Soil* biodiversity is affected by all the degradation processes identified in the Soil Thematic Strategy. Such processes include: erosion (the EEA estimates that 115 million ha are affected by wind erosion); decline of soil organic matter (around 45% of soils in Europe have a low or very low organic matter content), which plays a major role in the carbon life cycle of the soil; compaction; salisation; landslides; sealing and contamination (it has been estimated that 3.5 million sites may be potentially contaminated, with 0.5 million sites being really contaminated and needing remediation).

2.1.3. Environment, Health and the Quality of Life

Environment has a significant effect on human health. OECD figures showed that 2-6% of premature European mortality is directly attributable to environmental factors, such as air pollution, noise, indoor environment, food-borne diseases and chemicals. In the EU-15, these risks are likely to be higher, contributing also to 5-8% of the total disease burden. The main health risks in the EU-15 are associated with outdoor and indoor air pollution, water and food-borne infectious diseases. Certain diseases are rapidly increasing, e.g. childhood asthma, and there is insufficient evaluation of the indirect impacts of poor air and water quality on health.

Recent estimates indicate that 20 million Europeans suffer from respiratory problems every day. The 'Clean Air For Europe' (CAFE) programme estimated that in the EU in 2000, about 350,000 were seriously affected due to air pollution caused by fine particulate matter. Current levels of ground-level ozone cause more than 20,000 premature deaths each year and Dangerous levels of 'smog', linked with high summer temperatures and nitrous oxide emissions, are on the rise[19]. Exceedances of particulate matter (PM_{10}) limit values[20] are widespread. Indicators and forecasts reveal that even if current legislation is fully implemented, significant health concerns remain for the future.

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17 The most significant signs of a lack of progress are the continuing expansion of intensive farming, the reported declining trend in farmland-related species of birds and butterflies, the increasing rate of water abstraction, the increased evidence of the effects of invasive alien species, and the high risk of abandonment of farmland in several parts of Europe.

18 The biodiversity target might only be met in areas where traditional uses and activities prevail in shaping the evolution of the ecosystem. Main challenges for reaching the loss-prevention target are minimising the risk of local extinctions of species at risk and prevention of habitat fragmentation.

19 311,000 premature deaths are projected in 2030, due mainly to the effects of pollution from ground-level ozone and fine particles.

20 Directive 1999/30/EC (OJ L 278, 29.6.1999, p. 35).

Hazardous *chemicals* remain a matter of public concern, especially since the health consequences are not always fully known. There is an ever-increasing number of chemicals to be found in the human body (currently averaging over 300) and health impacts when different substances – which might be harmless by themselves – combine with others in the human body to produce potential 'cocktail effects', are poorly understood and poorly researched.

In the EU, *water quality* is expected to improve due to an expected significant reduction in the overall discharges of pollution from industry[21]. Water stress is expected to become more acute in certain areas of southern Europe, e.g. where drought conditions and water scarcity are risks.

2.1.4. Natural resources and wastes

In Europe, current production and consumption patterns are unsustainable: studies show that the total global use of natural resources is higher than the planet's capacity to regenerate them. Europe has a high level of energy and materials resource consumption[22], the average material intensity – the quantity of resources required to produce consumables – is slightly less than in the USA, but twice that of Japan.

The use of materials and waste generation is closely linked with economic growth. While there has been substantial progress in reducing the environmental impact of waste disposal, the volume of waste still grows, roughly in parallel with increases in GDP. Progress on reducing the environmental impacts of waste is expected, as recently adopted EU legislation on waste management is being implemented. However, these policies only cover a limited proportion of all the waste generated. Estimates suggest that by 2020, waste volume will significantly increase compared to 2006 if current trends continue. Industrial processing, along with waste treatment, gives rise to about 25% of total EU greenhouse gas emissions.

Decoupling economic growth from negative environmental impacts – an overall objective of the 6th EAP - remains one of the biggest challenges for all policy areas.

2.2. The changed policy context

The policy context for the Community framework for action in the field of environment is determined – inter alia – by the EU Sustainable Development Strategy, the Lisbon Strategy and the Commission's Better Regulation policy.

2.2.1. The renewed EU Sustainable Development Strategy

The 6th EAP, which forms the basis for the environmental dimension of the EU Sustainable Development Strategy (EU SDS), states that "measures proposed and adopted in favour of the environment should be coherent with the objectives of the social and economic dimensions of sustainable development and vice versa"[23]. The recently renewed EU Sustainable Development Strategy sets out a single coherent strategy on how the EU will more effectively live up to its long-standing commitment to meet the challenges of sustainable development. It

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[21] Agricultural nutrient discharges are expected to decrease moderately by 2020. However, pressures on maintaining water quality are expected to increase significantly in the new Member States due to increased fertiliser use and mineral fertiliser leaching into water courses.

[22] Current EU materials consumption is between 31 and 74 tonnes per person per year and environmentally most significant is the material consumption for housing, food and mobility. Average material intensity (raw materials consumed per unit of GDP) in the EU-25 is 1 kg/Euro.

[23] See Article 2(2) and (4) of the 6th EAP.

reaffirms the need for global solidarity and recognises the importance of strengthening our work with partners outside the EU, including rapidly developing countries which will have a significant impact on global sustainable development.

Recognising that the main challenge is "to gradually change our current unsustainable consumption and production patterns and the non-integrated approach to policy-making", the renewed Sustainable Development Strategy (SDS) lays the path for remedial action. Specifically, the SDS reconfirms that the EU is committed to a path of sustainable development and that in order to achieve sustainability goals, one important element is the need for greater co-operation between policy-makers (and implementers) at all stages of the policy cycle. Mutual supportiveness between economic, environmental and social policies needs to be considered by policy-makers earlier rather than later, if the aim is to move beyond rhetoric towards effective and profitable synergies. For example, there is scope for a renewed social dialogue in the field of environment. After all, environmental policies are prime contributors to safety in the workplace (e.g. chemicals) and to citizens' overall well-being.

The EU SDS sets out an approach to better policy-making promoting *inter alia* integration of economic social and environmental considerations so that they are coherent and mutually reinforce each other by making full use of instruments for better regulation, such as balanced impact assessments and stakeholder consultation.

The renewed SDS stresses that "the most appropriate economic instruments should be used to promote market transparency and price that reflect the real economic, social and environmental costs of products and services…". It recognises their potential, "…to reconcile environmental protection and *smart* economic growth and exploit win-win opportunities".

The renewed SDS reaffirms the need for global solidarity and recognises the importance of strengthening the EU's work with partners outside the EU, including the rapidly developing countries which will have a significant impact on global sustainable development.

2.2.2. The Lisbon Strategy

The Lisbon Strategy makes an essential contribution to the overarching objective of sustainable development focussing primarily on actions and measures aimed at increased competitiveness and economic growth and enhancing job creation. With the Community Lisbon Programme the EU will contribute to the overall economic and employment policy agenda by completing the internal market and by implementing common policies and activities that support and complement national policies. The Lisbon agenda focuses on boosting knowledge and innovation, making Europe a more attractive place to invest and work; and creating more and better jobs.

The 2006 Annual Progress Report on the Lisbon Strategy identified four priority action areas (i) investment in education, research and innovation; (ii) freeing up small and medium-sized enterprises; (iii) employment policies to get people into work; and (iv) guaranteeing a secure and sustainable energy supply.

2.2.3. The Commission's Better Regulation policy

In the context of the renewed Lisbon Strategy, refocusing on growth and jobs, the Commission announced its intention to launch a comprehensive initiative to ensure that the regulatory framework in the EU meets the requirements of the 21st century. In 2005, the

Commission presented a Communication "Better Regulation for Growth and Jobs in the European Union" which builds on the Commission's 2002 initiative for Better Regulation[24]. It "reinforces the way in which better regulation contributes to achieving growth and jobs, while continuing to take into account the social and environmental objectives and the benefits for citizens and national administrations in terms of improved governance". This means that, both for existing legislation and for new policy initiatives, the extent of the legislator's intervention should remain proportionate to the political objectives pursued. The 2005 Communication proposes three key action lines:

– "further promoting the design and application of better regulation tools at the EU level, notably in so far as impact assessments and simplification are concerned.

– working more closely with Member States to ensure that better regulation principles are applied consistently throughout the EU by all regulators. Action at EU level alone will not be enough: the transposition of EU legislation by the Member States and national regulatory initiatives have a direct effect as well, not just on national administrations and on citizens but also on businesses, particularly SMEs, from across the Union.

– reinforcing the constructive dialogue between all regulators at the EU and national levels and with stakeholders".

Despite the fact that most of the Better Regulation tools are not new and that EU environment policy has been putting them into practice during the past four years, the 2005 Communication provides the impetus to give Better Regulation a new momentum.

2.3. Underlying problems

Although four years have elapsed since its adoption, it is too early to see significant results arising from the measures adopted under the 6th EAP. The assessment of progress made so far reveals three specific underlying problems which could hamper efficient and effective progress towards 6th EAP objectives over the coming period:

– poor integration of policies;

– the existing implementation gap; and

– insufficient international co-operation.

2.3.1. Poor integration of policies

Policy integration is a prerequisite for progress towards sustainable development. Other EU policies must take environment into consideration if environment and the linked human health objectives (clean air, adequate water quality etc) are to be attained. Integration is the main driver for ensuring mutual supportiveness between the economic, social and environmental dimensions of the Sustainable Development Strategy. Policy integration can usefully highlights ways to improve cost-effectiveness and can create useful *win-win* opportunities, for example by generating employment.

[24] COM(2005) 535.

At EU level, the importance of integrating environment is recognised in Article 6 of the EC Treaty, which stipulates that, "environmental protection requirements must be integrated into the definition and implementation of the Community policies [...] in particular with a view to promoting sustainable development". Environmental integration was given an institutional boost in 1998 with the launch by the European Council of the 'Cardiff process', requiring different Council formations to develop strategies to this underpin integration.

In 2004, the Commission presented a working document taking stock of the 'Cardiff process'. It assessed how far policy-makers in other areas had taken environment on board and concluded that overall, the integration process had failed in terms of concrete improvements to the environment. The analysis shows a need for a significant upgrading in the effort to integrate environment into the energy, transport, development and employment policies over the coming period.

Processes recently set in place have led to improvements in several sectors, notably agriculture, which recognise the intimate interplay between the two policy areas. However, the pace of progress towards further environmental integration would be further boosted if all relevant sectors would implement commitments made over the past five years with incremental enthusiasm. This will be a difficult process: as many of the 'low hanging fruits' of integration have already been picked, future efforts to reverse persisting unsustainable trends will need to focus increasingly on structural reforms, which may generate tensions with established competences, and which generally take longer to bring about.

2.3.2. The existing implementation gap

Correct transposition of EU environmental law into the national laws of the Member States is a prerequisite to make sure that the laws have the desired impact on the environment when being implemented and enforced. Although the responsibility for implementation of EU environmental legislation lies primarily with the Member States, it is an essential task for the Commission, as guardian of the Treaty, to check that national measures meet the requirements of environmental directives.

The fact that EU environmental law constitutes one of the heaviest complaints and infringement workload of any EU policy area reveals an important gap between EU environmental law and its application in the Member States[25]. In 2005, the environment sector accounted for about one fourth of the total number of open cases concerning non-compliance with Community law under investigation by the Commission[26]. Out of the open cases, most concern nature protection (30%) followed by waste (18%), environment impact assessment (16%), water (11%) and air (8%). Italy and Spain have the highest number of infringement cases against them.

The following table gives an overview of open infringement cases against Member States on 31 December 2005:

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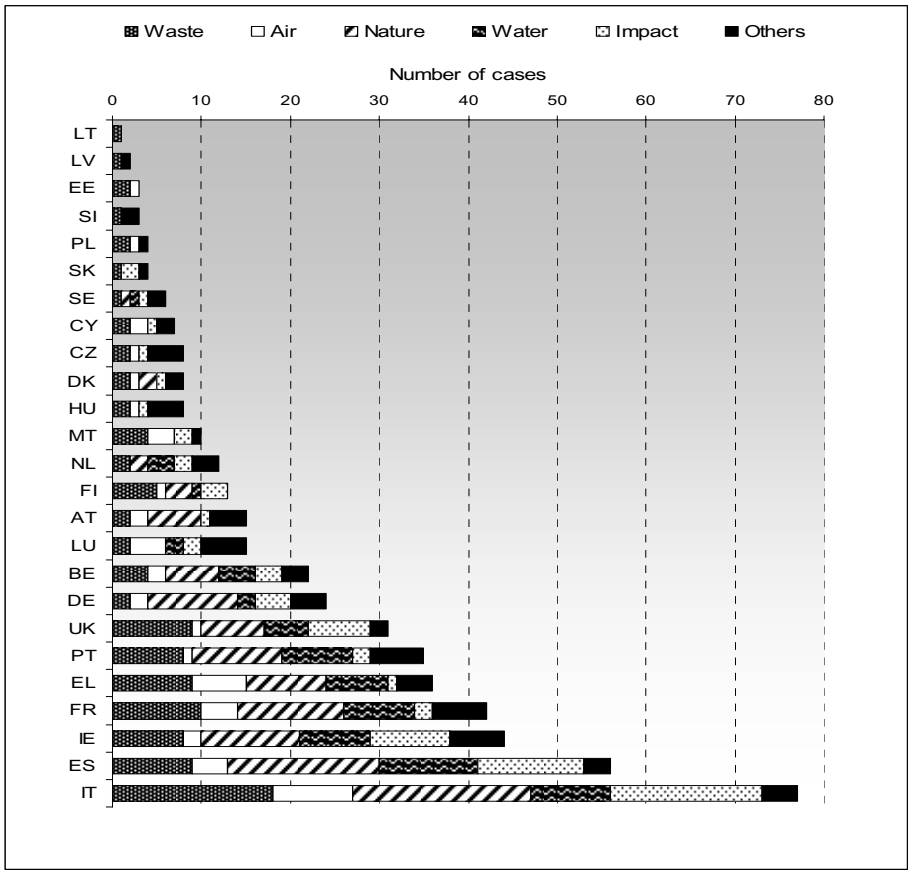
[25] See Seventh Annual Survey on the implementation and enforcement of Community environmental law 2005 - SEC(2006) 1143.

[26] At the end of 2005, the total number of open cases was 3562 for the whole of the Commission. The share of the environment sector as a percentage of the total decreased from 27% in 2004 to 22.4% in 2005.



The 2005 Better Regulation Communication also stresses the importance of effective implementation of EU legislation at national level.

2.3.3. Insufficient international co-operation

Environmental problems do not stop at national borders and are becoming increasingly global. Globalisation – the way in which nations trade with each other and the way that transnational companies tend more and more to dominate trade-flows – bring about changes in the structure of industries, lifestyles and cultures. All these factors affect the way environmental policies are made today.

Policy (and business) decisions taken by the EU can impact negatively on the environment in third countries. An example would be decisions that lead to an increase in the outsourcing of resource-intensive production to developing countries where environmental safeguards are less stringent than those in the EU, or where production implies consumption of significant volumes of illegally logged timber. Conversely, EU environment policy also implies ambitious environmental standards which other countries need to meet to benefit from the EU as an export market. It is not always clear that these aspects of EU policy are sufficiently explored in the regulatory context, nor that they are adequately debated with stakeholders in developing countries which would be affected by them.

The EU acting alone cannot achieve its environmental protection aims but it can show the lead and maintain an open discussion to encourage and promote broader international support for actions that are in the global interest. This EU role – as a leading proponent of international co-operation – will play an increasingly decisive role in shaping the global agenda on key issues over the coming years. It will not only affect climate change and biodiversity, but will also shape attitudes among policy-makers in other domains whose

proposals impact the developing world. In that context, the role of Impact Assessment in the Commission should broaden to include these wider aspects and encourage dialogue.

The recently revised EU Sustainable Development Strategy recognises the importance of the global dimension of EU policy-making. One of its overall objectives is to "actively promote sustainable development worldwide and ensure that the EU's internal and external policies are consistent with global sustainable development and its international commitments".

3. OBJECTIVES

The mid-term review of the 6th EAP has two objectives:

Objective 1

– to ensure that, for the remaining 6th EAP period (up to 2012), there is a Community framework for action in place, addressing the correct environmental challenges and priorities.

Objective 2

– to ensure that for the remaining 6th EAP period, initiatives based on the Community framework for action address the environmental challenges in the most efficient and effective way, in line with EU policies and strategies such as the renewed Sustainable Development Strategy and the Commission's Better Regulation policy.

4. MID-TERM REVIEW OPTIONS

Out of the many possible options to address the problems signalled in Section 2, three basic options have been considered:

Option 1

The first option would be the continuation of "business as usual" (no change option). Under this option, the Commission would keep the 6th EAP as a framework for environment policy-making until 2012. This option would not require any amending legislative action.

The Commission would, for the remaining 6th EAP period, present initiatives in order to further implement the 6th EAP. These initiatives would for example include measures to ensure the implementation of the seven Thematic Strategies, the completion of the international commitments under the Kyoto protocol, implementation of the Community's Biodiversity Communication, reviewing the legislative framework on industrial emissions, implementing the REACH (Chemicals) Regulation and revising the Integrated Pollution Prevention and Control ('IPPC') Directive.

Option 2

The second option would also keep the 6th EAP as framework for environmental policy-making until 2012. This option would not require any amending legislative action either.

Under this option and without abandoning the actions foreseen in the 6th EAP, the Commission would devote particular attention to certain aspects of the 6th EAP in its future

environmental policy-making to "ensure that environmental objectives, which should focus on the environmental outcomes to be achieved, are met by the most effective and appropriate means available", as required by Article 3 (3) of the 6th EAP.

The 6th EAP sets 10 strategic approaches for environmental policy-making:

– Development of new Community legislation and amendment of existing legislation, where appropriate (..)[27];

– Encouraging more effective implementation and enforcement of Community legislation on the environment (..)[28];

– Further efforts for integration of environmental protection requirements into all Community policies and actions (..)[29];

– (…) to internalise the negative as well as the positive impacts on the environment though the use of a blend of instruments, including market based and economic instruments (..)[30];

– Improving collaboration and partnership with enterprises and their representative bodies and involving the social partner, consumers and their organisations (..)[31];

– To help ensure that individual consumers, enterprises and public bodies in their role of purchasers are better informed about the processes and products in terms of their environmental impacts (..)[32];

– To support environmental integration in the financial sector (..)[33];

– To create a Community liability scheme (..)[34];

– To improve collaboration and partnership with consumer groups and NGOs and promote better understanding of and participation in environmental issues amongst European citizens (..)[35];

– To encourage and promote effective and sustainable use and management of land and sea (..)[36].

In addition, the 6th EAP:

– "promotes the adoption of policies and approaches that contribute to the achievement of sustainable development in countries which are candidates for accession ('Candidate Countries') building on the transposition and implementation of the acquis"[37];

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27 Article 3(1) of the 6th EAP.
28 Article 3(2) of the 6th EAP.
29 Article 2(2) and 3 (3) of the 6th EAP.
30 Article 3(4) of the 6th EAP£.
31 Article 3(5) of the 6th EAP.
32 Article 3(6) of the 6th EAP.
33 Article 3(7) of the 6th EAP.
34 Article 3(8) of the 6th EAP.
35 Article 3(9) of the 6th EAP.
36 Article 3(10 of the 6th EAP.

– "stimulates the positive and constructive role of he European Union as leading partner in the protection of the global environment and in pursuit of a sustainable development"[38].

It states that "measure proposed and adopted in favour of the environment should be coherent with the objectives of the economic and social dimensions of sustainable development and vice versa"[39].

From among these perspectives, for the remaining 6th EAP period, the Commission would, under option 2, devote particular attention to:

– enhanced international co-operation;

– strengthening "Better Regulation" principles when developing new legislation and amending existing legislation;

– improved integration of policies;

– improved implementation and environmental information.

These four perspectives have been highlighted because they are in line with the changed policy framework referred to earlier and because they address the principle lacunae – as outlined in Section 1 – that stand in the way of more regular progress towards EU environment policy objectives at this time.

Option 3

The third option would be for the Commission to substantially revise the current 6th EAP. This would require legislative action, since the Commission would need to make a proposal for a new Community environment action programme which should be adopted by the European Parliament and the Council on the basis of a new co-decision procedure.

This new Community action programme would provide a new Community framework for action to address different environmental challenges than the ones currently covered by the 6th EAP for the period up to 2012. Future initiatives in the field of EU environmental policy will be based on this new Community framework for action.

5. ANALYSIS OF THE IMPACTS OF THE DIFFERENT OPTIONS

Given that the 6th EAP provides a framework for policy action rather than coming forward itself with policy proposals, and in line with the principle of proportionate analysis indicated in the Impact Assessment Guidelines, the following analysis is based on an appropriate level of generality, e.g. providing qualitative rather than extensive quantified data. It follows the suggested procedure for "Broad policy-defining documents"[40].

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37 Article 2(5) of the 6th EAP.
38 Article 2(6) of the 6th EAP.
39 Article 2(4) of the 6th EAP.
40 SEC(2005) 791.

5.1. Analysis of the Mid-term Review Options

Option 1 – "business as usual"

Option 1 has the advantage that it avoids regulatory action. It keeps the 6th EAP as the framework for future Community action to address the remaining environmental challenges.

Drawbacks of option 1 are that it does not necessarily address the identified problems of poor integration, insufficient international co-operation and poor implementation of EU environment policies at national level. In addition, option 1 fails to adapt environment policy-making to the changed policy context that has arisen since the 6th EAP entered into force, notably in connection with the development of synergies between the environmental, economic and social dimension of sustainable development as well as the strengthening of "Better Regulation" principles in environment policy-making.

Consequently, while option 1 would be likely to create positive environment impacts through the development of initiatives addressing the main pressing environmental challenges, it is unlikely to encourage development of initiatives broad enough to create the necessary dynamic. For instance, option 1 does not adequately favour initiatives which would reduce administrative burden for enterprises through simplification of the regulatory environment or create jobs through the development of environmental policies focussing on material and energy efficiencies and eco-innovations.

Option 2 – reinvigorated perspectives of environmental policy-making

Like option 1, option 2 has the advantage that it avoids unnecessary regulatory action. It keeps the 6th EAP as framework for future Community action to address the remaining environmental challenges – much favoured by practically all stakeholders. In addition, option 2 focuses on four specific perspectives of environmental policy-making in order to address the problems identified in Section 1. Moreover, option 2 adapts future environmental policy-making to the changed policy context, notably the renewed EU Sustainable Development Strategy and focuses on further application of "Better Regulation" principles.

Consequently, option 2 is likely to create the required positive environment impacts through the development of initiatives addressing the main pressing environmental challenges, within the changed context. It is also likely that under option 2, initiatives would be developed which create the required synergies between environmental policies and the Sustainable Development Strategy to ensure efficient and effective implementation, and would be best-suited to accommodating the Commission's Better Regulation agenda.

The focus on strengthening international co-operation is aimed at enhancing the prospects for global environmental problems to receive global responses, most obviously in the field of climate change, but also biodiversity, trade in endangered species and emerging issues such as ship-dismantling and illegal waste shipments as well as sustainable forest management. Focus on "Better Regulation" principles should lead to the development of concrete EU environmental legislation with, if appropriate, clear targets and using market-based instruments if feasible. It will lead to a simplification of the existing regulatory framework, with a reduction of administrative burdens and costs. The improvements in implementation would not only have direct effects on environmental protection but would also influence competition by ensuring that all Member States respect the same rules and that economic operators are on equal footing in the internal market. Better integration of policies would

encourage an enhancement of synergies between environmental, economic and social (and other key) policies. For instance, statistical evidence shows that improving resource and energy efficiency can be a more effective of increasing competitiveness than focussing on labour costs, since labour costs in manufacturing rarely constitute more than 20% of the total costs.

Economic sector	Material costs	Labour costs	Other costs
	Share of gross output (%)		
Manufacturing industry including:	41.5	21.4	37.1
- Food production	49.9	15.0	35.1
- Chemical industry	35.1	19.5	45.4
- Metal production and processing	52.3	19.9	29.8
- Car manufacturing	52.0	18.6	29.4
Construction	26.5	32.9	40.6

Costs structure in selected sectors in Germany. Source: EEA Report 9/2005[41]

Whilst labour productivity has improved by more than 270% over the past four decades, energy and resource productivity only improved by 100% and 20% respectively. There is thus a potential to improve resource and energy efficiency through eco-innovation and other measures. Various studies have shown that on the average approximately 20% of the energy and material inputs can be saved. The drive towards further efficiency triggers innovation that itself results in further efficiencies with lower energy, waste and resource costs. For example, a study of 5 major international companies undertaking active greenhouse gas reduction policies revealed a total of €6 billion in savings[42]. A German study concluded that if energy and material savings were re-invested in research and development and engineering strategies, 2.3% of the GDP growth, an additional 750.000 jobs and decreased public spending on social welfare could be achieved[43].

41 EEA Report 9/2005 "Sustainable management of natural resources", p. 56., http://reports.eea.europa.eu/eea_report_2005_9/en/EEA_report_9_2005.pdf

42 The Climate Group 2004.

43 Fischer, H. Lichtblau, K. Meyer, B. Scheelhaase, J. (2004) Wachstums- unde Beschäftigungsilmpulse rentabler Materialeinsparnungen. In Hamburgisches Welt-Wirtschafts- Archive. 84 Jahrgang, Heft 4.

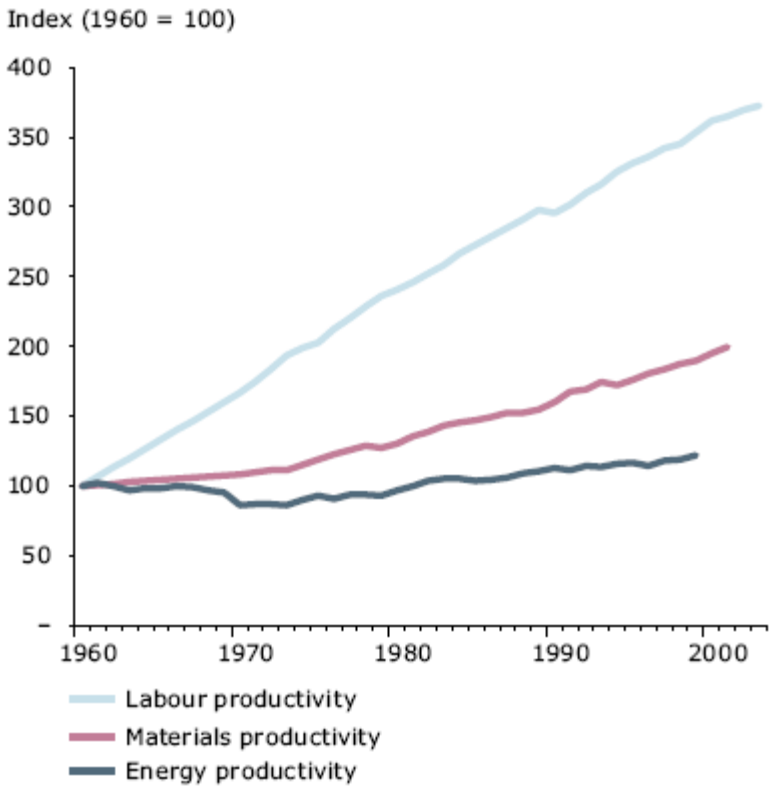

Table: Labour (GDP/working hours), material (GDP/domestic material consumption) and energy (GDP/total primary energy supply) productivity in the EU-15, 1960-2002. Source: EEA Report 9/2005[44]

Option 3 – new framework for Community environmental policies

Advantages of option 3 include a new Community framework for environmental policy that would be able to address the problems identified in Section 1 and make the necessary changes within the new policy context, notably the renewed Sustainable Development Strategy, the "Better Regulation" principles and other changed circumstances.

Option 3 would necessarily entail development of a new regulatory proposal to provide a new framework for Community environmental policy, which would open the debate on priorities additional to those the 6th EAP currently covers. The main drawback of option 3 is that this new framework would almost certainly arrive eventually at the conclusion that the 6th EAP already covers the most pressing environmental challenges – not least because these reflect the opinion of the majority of stakeholders – and so it would presage an unnecessary and fruitless debate. Moreover, since the current 6th EAP is just 4 years into its 10-year mandate, there is something to be said for continuity, given that its key principles remain valid and intact.

5.2. Specific initiatives based on the Community framework for action

Under all three options, further initiatives in the field of EU environment policy will be developed on the basis of a Community framework for action. In options 1 and 2 this framework will be the 6th EAP, in option 3, this would be a new framework.

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[44] EEA Report 9/2005 "Sustainable management of natural resources", p. 56., http://reports.eea.europa.eu/eea_report_2005_9/en/EEA_report_9_2005.pdf

Any new specific policy initiatives under the 6th EAP fall outside the scope of this current Impact Assessment. However, they will – as appropriate – be accompanied by separate Impact Assessments in due time, as they emerge.

The following list gives an illustrative overview of initiatives which could be proposed in the coming years:

2007

Climate Change

- Strategic EU Energy Review
- Commission Green Paper on market-based instruments
- Green Paper on post-2012 climate change options
- Communication on Carbon Capture and Geological Storage
- Communication on Clean Coal Technologies
- Communication on Green Public Procurement
- Revision of the EU Emissions Trading Scheme
- Follow-up measures to the revised CO_2 and cars strategy, and in particular proposal for a legislative instrument to reduce CO_2 from light duty vehicles (cars and vans)
- White paper on Climate Change Impact and Adaptation
- Communication on the review of the EU Strategy to reduceCO_2 emissions from cars
- Action to reduce greenhouse gas emissions from maritime transport

Nature and Biodiversity

- Developing additional Species Action Plans for threatened species, (e.g. covering wild birds and other species of Community interest)
- Under the 7th Research Framework Programme, development of new valuation methods to assess ecosystem services and development of modelling and monitoring processes to highlight the driving forces underlying the reduction / loss of biodiversity
- Implementing the Biodiversity Communication Action Plan
- Developing guidance documents to underpin the achievement of objectives specific to Natura 2000
- Development of the EU Water Initiative (contribution towards *Millennium Development Goals*)

- Communication on Reinforcing the Community Civil Protection Mechanism, in particular the Monitoring and Information Centre 'MIC'

- Communication on Droughts and water scarcity

- Proposal on Additional Legislative Options to Combat Illegal Logging and Associated Trade

- Continue negotiations of FLEGT (Forest Law Enforcement, Governance and Trade) Voluntary Partnership Agreements with third countries

- EU Maritime Strategy

Environment, Health and the Quality of Life

- Mid-term review of the Environment and Health Action Plan and EU pilot project on Human Bio-monitoring

- Work Programme for the Common Implementation for the Water Framework Directive 2007-2009

- Review and evaluation of the legislative framework for industrial emissions

- NEC Directive revision

- Establish further noise standards

- Proposal establishing minimum thresholds for adventitious or technically unavoidable traces of authorised GMO seeds in non GM seed lots

- Commission proposal for a Regulation on Euro VI standards for heavy-duty vehicles

- Community Implementation Plan on Persistent Organic Pollutants

- Review of Directive 96/61/EC and related legislation on industrial emissions

- Proposal to amend Directive 98/70 on fuel quality

Natural Resources and Wastes

- Proposal for simplification of the Directives on waste from titanium dioxide production

- Proposal for revision of the Sewage Sludge directive 86/278/EEC

- Commission Communication on a Sustainable Production and Consumption action plan

- Communication on by-products and waste

- Report on the implementation of the Packaging and Packaging Waste Directive

- International Panel on Sustainable use of natural resources

- Review of EMAS/Ecolabel schemes

2008

Climate Change

- Proposal for a model for the assessment of all external costs of transport to serve as the basis for future calculations of infrastructure charges

- Proposal for a Directive on renewable heating and cooling

- Revision of Decision No 280/2004/EC concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol

Nature and Biodiversity

- Proposal for a comprehensive EU strategy on reducing the impacts of invasive alien species on EU biodiversity

- Communication on further steps towards the Community framework for co-operation in the field of accidental or deliberate marine pollution

Environment, Health and the Quality of Life

- Establish test methods and criteria for identifying endocrine disrupters

- Start of the operations of the European Chemical Agency in Helsinki

- Review of the Ozone Depleting Substance Regulation

- Completion of the review of all active substances used in plant protection products within the EU

Natural Resources and Wastes

- Implementation of measures announced in the Action Plan on Sustainable Production and Consumption, including a legislative proposal on eco-design of the most environmentally harmful products

- Review of the Directive on Restrictions on the use of Hazardous Substances in electrical and electronic equipment 2002/95/EC and of the Directive on waste from electrical and electronic equipment 2002/96/EC

2009

Climate Change

- A major future-oriented programme for green propulsion and energy efficiency in transport

- Longer term: Promotion of research, demonstration and market introduction of new technologies for reducing energy use and greenhouse gas emissions such as optimised engines and power trains, intelligent vehicle energy management systems including

hybrids, fuel cell and hydrogen powered vehicles and the associated EU-wide infrastructure

Nature and Biodiversity

- Review of the EU River basin management Plans.

Environment, Health and Quality of life

- Review of existing active substances used in biocidal products
- Review on implementation of the environmental noise Directive 2002/49/EC
- Review of the Biocides Directive

Natural Resources and Wastes

- Implementation of measures announced in the Action Plan on Sustainable Production and Consumption

6. COMPARING THE MID-TERM REVIEW OPTIONS

Option 3 was discarded at an early stage.

The third option would create a completely new Community framework for environment policy, possibly with new aims, objectives and new priority actions. This option would be desirable if the current state of the environment on the one hand, and an evaluation of the impacts of the measures already being proposed on the other would indicate that a change in the objectives and priorities had become necessary. That is not the case. Both the assessment on the state of the environment as well as the stakeholders' opinions confirmed that the objectives and priority areas of the 6th EAP are valid now and are likely to remain so for until 2012.

Consequently, the additional work entailed in option 3 is not outweighed by any potential benefits as political stability is needed.

Option 1 has also been rejected.

Stakeholder opinion militates in favour of retaining the 6th EAP as the appropriate framework for future EU environment policy action. The first option is consistent with this conclusion, since it supports the continuity of the EAP.

On the other hand, option 1 fails to provide scope to bring the EU environment policy framework into line with the current and likely future policy context. Environmental policy stands likely to be less cost-effective and less consonant with the economic and social dimensions of sustainable development.

The "business as usual" option, is thus discarded it does not fully exploit the synergies between environmental protection, economic growth and job creation and the new Better Regulation instruments.

Option 2 has been retained.

Option 2 would keep the 6th EAP as framework for action and is thus coherent with the state of the environment and stakeholder opinion. However, within this framework for action, it favours added focus on four specific perspectives for environment policy-making, in order to address the underlying problems and the changed policy context, while maximising the potential for achievement of environment policy objectives. It is likely to lead to a high level of environmental protection at lower cost and/or with added accompanying economic/social benefits.

Option 2 has thus been selected as the most effective and efficient option for environmental policy-making for the remaining period of the 6th EAP.

The following table summarises the comparison of the policy options in terms of their effectiveness, efficiency and consistency:

	Effectiveness	Efficiency	Consistency
Option 1 – "business as usual"	**+/-**	+/-	-
	The "business as usual" option would be in line with the first objective identified in Section 3, since the 6th EAP provides the correct framework for future action. However, under the "business as usual" option, the second objective identified in Section 3 may not be achieved, since initiatives which will be developed to address the remaining environmental challenges may not address these challenges in the most efficient and effective way.	It is doubtful whether synergies will be fully explored under this option.	Under this option it is unlikely that initiatives will be developed which will limit trade-offs across the environmental, economic and social domain, since initiatives that will be developed will mostly focus on further implementation of the 6th EAP actions.
Option 2 - implementation of the 6th EAP with reinvigorated perspectives	+	+	+
	Option 2 keeps the 6th EAP as the framework for action and therefore corresponds to the first objective. It also achieves the second objective as the enhanced perspectives could be used to develop initiatives which implement the 6th EAP actions in the most efficient and effective way.	Without a new legislative proposal, this option reinvigorates existing perspectives for environmental policy-making in order to fully exploit the synergies with other policies and address underlying problems.	The use of enhanced perspectives of this option on the basis of which future initiatives will be developed are likely to limit trade-offs across the economic, social and environmental domain

Option 3- a new legislative proposal to amend the 6th EAP framework for action	-	-/-	+
	Option 3 would not be in line with the first objective since the 6th EAP already provides the correct framework for future action.	The presentation of a new legislative proposal would require the use of resources at inter-institutional level which would not be justified since there is no need to formally amend the 6th EAP.	The new legislative proposal of this option could to limit trade-offs across the economic, social and environmental domain

7. MONITORING AND EVALUATION

Monitoring and evaluation are key elements to measure the success of the implementation of the 6th EAP.

Indicators are essential to monitoring and evaluating progress towards achieving the 6th EAP objectives. The EEA and Eurostat have already developed a comprehensive set of indicators. The Commission has established through the agreement of DG ENV, DG JRC, DG ESTAT and the EEA a network of Environmental Data Centres for the provision of timely and accurate information on the state of the environment. The Commission is committed to further development of indicators in specific areas of environment, notably to monitor progress in halting biodiversity loss and towards a more sustainable use of natural resources.

As many initiatives implementing the 6th EAP have only been adopted at Community level recently, it is too soon to see the final results at this stage. A final assessment will be made at the end of the programme in 2012, in line with Article 11 of 6th EAP.

ANNEX
Progress with the implementation of the 6th EAP - Environmental trends and prospects in the four priority areas

1. INTRODUCTION

This Annex to the Impact Assessment accompanying the Commission's Communication concerning the mid-term review of the Sixth Community Environment Action Programme, illustrates progress made in each of 6th EAP priority areas (climate change; nature and biodiversity; environment, health and the quality of life; natural resources and waste) based on various available statistics, data and indicators, mainly but not exclusively from the European Environmental Agency and Eurostat.

In total, the 6th EAP identifies 156 actions are to be taken to reach its overall goal. Out of the 156 actions, 54% have an identifiable end date and/or a defined 'deliverable'. The other 46% will become – or are already – a structural part of the Commission's environment policy-making practices. More than 70% of the actions imply the initiation of research on identified issues or the elaboration of new policies. A wide range of different actors at international, European, national, regional and local level are involved in implementing the 6th EAP actions. In the new Seventh Research Framework Programme (FP7) of the European Community for research, technological development and demonstration activities the environment including climate change composes a separate theme within the Cooperation Specific Programme with a budget of about €1.9 billion for the period from 2007 to 2013. The objectives of the environmental research theme within FP7 are the sustainable management of the environment and its resources through advancing our knowledge of the interactions between the climate, biosphere, ecosystems and human activities, and developing new technologies, tools and services, in order to address in an integrated way global environmental issues. Emphasis will be put on: the prediction of climate, ecological, earth and ocean systems changes; on tools and on technologies for monitoring, prevention, mitigation of and adaptation to environmental pressures and risks, including on health, as well as for the sustainability of the natural and man-made environment. Without aiming to be exhaustive, this Annex also illustrates actions taken at EU level in each of the 6th EAP priority areas.

2. CLIMATE CHANGE

2.1. Illustrative Trends and prospects

6th EAP's overall aim:

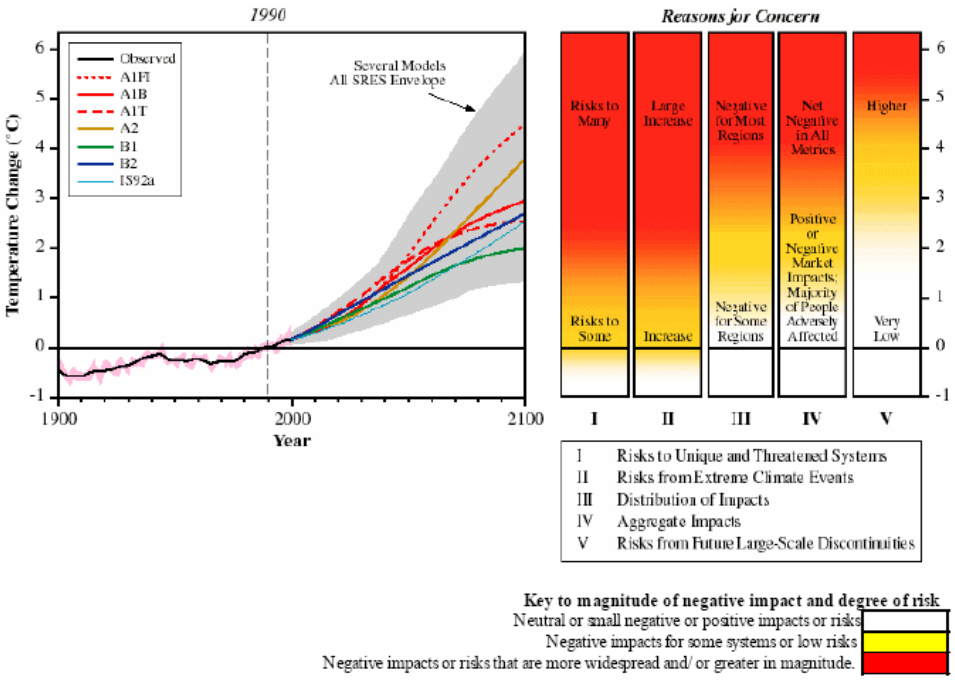
"emphasising climate change as an outstanding challenge of the next 10 years and beyond and contributing to the long term objective of stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Thus a long term objective of a maximum global temperature increase of 2 °Celsius over pre-industrial levels and a CO2 concentration below 550 ppm shall guide the Programme. In the longer term this is likely to require a global reduction in emissions of greenhouse gases by 70 % as compared to 1990 as identified by the Intergovernmental Panel on Climate Change (IPCC)"

6th EAP's objectives:

- "ratification and entering into force of the Kyoto Protocol to the United Nations framework Convention on climate change by 2002 and fulfilment of its commitment of an 8 % reduction in emissions by 2008-12 compared to 1990 levels for the European Community as a whole, in accordance with the commitment of each Member State set out in the Council Conclusions of 16 and 17 June 1998";
- "realisation by 2005 of demonstrable progress in achieving the commitments under the Kyoto Protocol";
- "placing the Community in a credible position to advocate an international agreement on more stringent reduction targets for the second commitment period provided for by the Kyoto Protocol. This agreement should aim at cutting emissions significantly, taking full account, inter alia, of the findings of the IPCC 3rd Assessment Report, and take into account the necessity to move towards a global equitable distribution of greenhouse gas emissions".

Climate change is a problem which has impacts on a very long time horizon, but requires urgent on the very short term. The Commission's communication to the Gothenburg European Council in 2001 identified climate change as one of the main threats to sustainable development and emphasised the need for increased use of "clean" energy and clear action to reduce energy demand[45].

[45] COM(2001) 264.



Source: 'Climate Change 2001: Working Group II: Impacts, Adaptation and Vulnerability' IPCC, Summary for Policy Makers

The graph below shows the increase in temperature since the industrial revolution and further increases over the coming century due to projected growth of global greenhouse gas emissions as reported in the Third Assessment Report of the IPCC[46]. This report also demonstrated what the reasons for concern are of the potential temperature increases over the coming century. On the basis of earlier similar results on the potential impacts of climate change from the IPCC, the European Council had already concluded that the maximum 'safe' level of increases in the earth's average temperature above pre-industrial era should be limited to 2°C. On 10 March 2005 the Environmental Council concluded that recent research indicates that global greenhouse gas emissions will be required to peak within 2 decades, followed by substantial reductions in the order of at least 15% and perhaps by as much as 50% by 2050 compared to 1990 levels in order to keep the 2ºC objective in reach.

46 SEC(2006) 218.

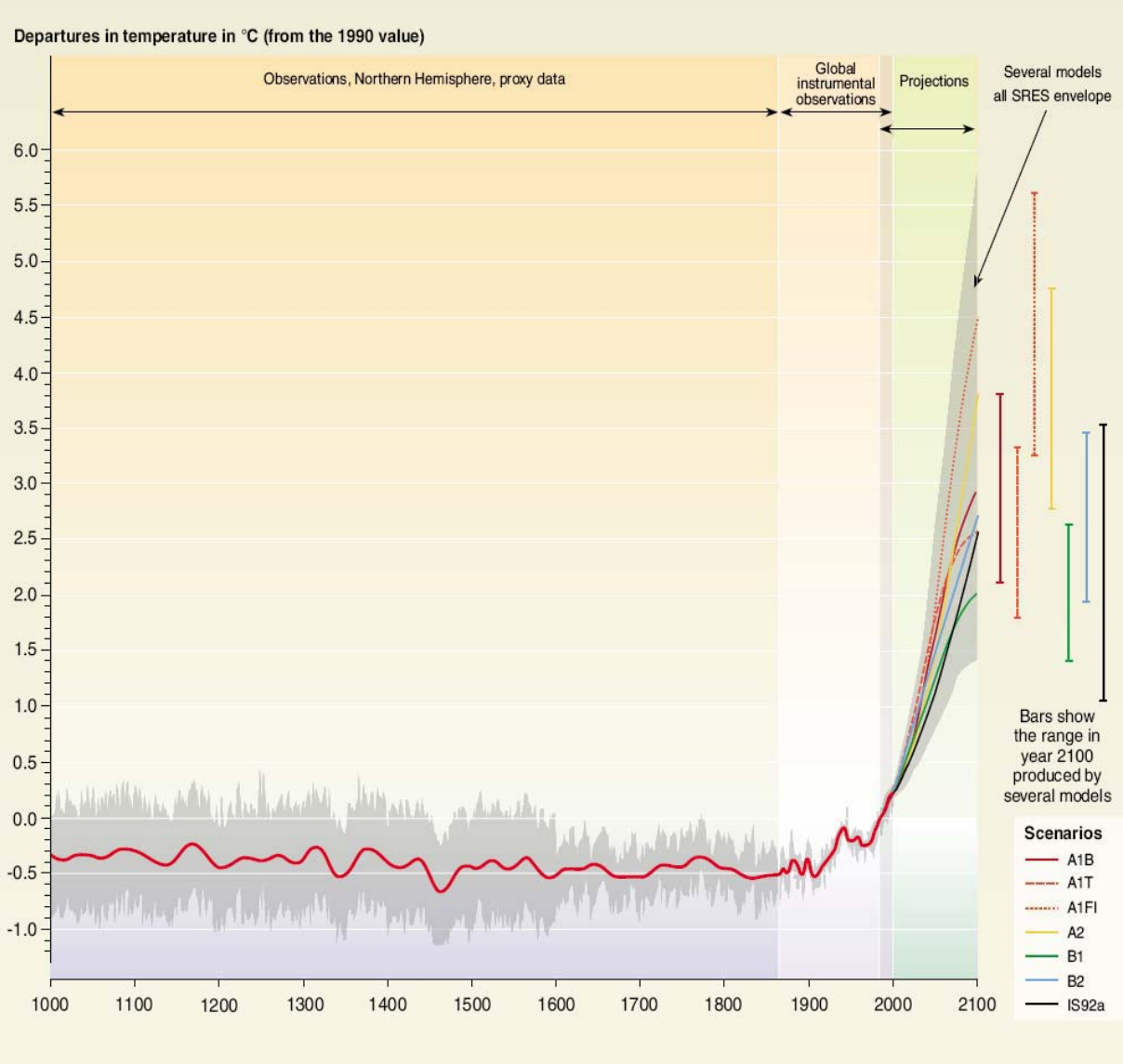


Table: Global temperature rise in °C from the 1990 value. Source: Intergovernmental Panel on Climate Change 2001[47]

As regards impacts for the EU, present projections for 2100 indicate that temperatures in Europe will have risen by between 2 and 6.3ºC above 1990 levels. It is estimated that the current rise in sea level of 0.8–3.0 mm/year will continue and intensify by 2.2 to 4.4 times the present values. Over the last 30 years, the extent of Arctic sea ice has decreased by circa 7% and the ice has thinned by about 40%, whereas between 1850 and 1980, Alpine glaciers lost approximately a third of their area and half of their mass, a trend that is continuing[48].

Even if greenhouse gases emissions were halted today, these changes would continue for many decades - in the case of sea level for centuries -, because of time lags in the response of climatic and oceanic systems to changes in the atmospheric concentration of greenhouse gases. These impacts will have consequences for all economic sectors in Europe. Even climate related events occurring elsewhere in the world would influence Europe's economy.

47 Intergovernmental Panel on Climate Change (2001) 3rd assessment report - synthesis report, p. 34 (http://www.ipcc.ch/pub/un/syreng/spm.pdf).

48 European Environment Agency – Impacts of Europe's Changing Climate - Report No 2/2004.

The need for adaptation to the adverse immediate and future impacts of climate change is paramount, and is now also a priority for the European Commission, as indicated in the Commission's Communication Winning the Battle Against Global Climate Change[49].

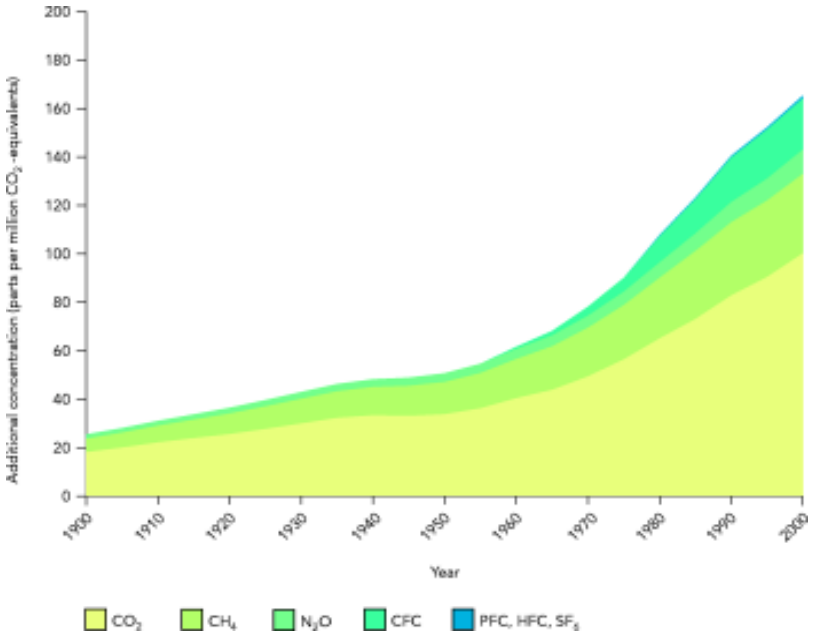


Table: Rise in greenhouse gas emissions (in ppm CO2 equivalent). Source: Climate change 2001: The scientific basis, Cambridge University Press, Cambridge, UK.

In the short term, the EU needs to attain the reduction commitments under the Kyoto Protocol. The EU-15 agreed to an 8% reduction in its greenhouse gas emissions by 2008-2012, compared with 1990[50]. Individual targets for the EU-15 have been agreed under the EU burden sharing agreement[51].

From 1990 to 2000, significant reductions in greenhouse gas emissions were achieved through restructuring of energy sectors that led to efficiency improvements and a shift into energy sources with a lower carbon content. These shifts where most markedly in the new Members States, the new federal states in Germany and the United Kingdom[52]. In 2004, EU-15 emissions were 0,6 % below 1990, for the EU -25 they were 4,8 % below 1990 levels. Between 2000 and 2004, greenhouse gas emissions from the EU-15 have increased. For instance in 2003-2004 they increased with 0,4%, mainly as a result of higher CO2 emissions from road transport, iron and steel production and oil refining and higher HFCs emissions from refrigeration and air conditioning[53].

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49 COM(2005) 35.

50 For the fluorinated gasses under the protocol, 1995 may also be a selected as base year.

51 Council Decision 2002/358/EC.

52 EEA 2005, " Greenhouse gas emission trends and projections in Europe 2005".

53 EEA 2006, " Annual European Community greenhouse gas inventory 1990–2004 and inventory report 2006 - Submission to the UNFCCC Secretariat".

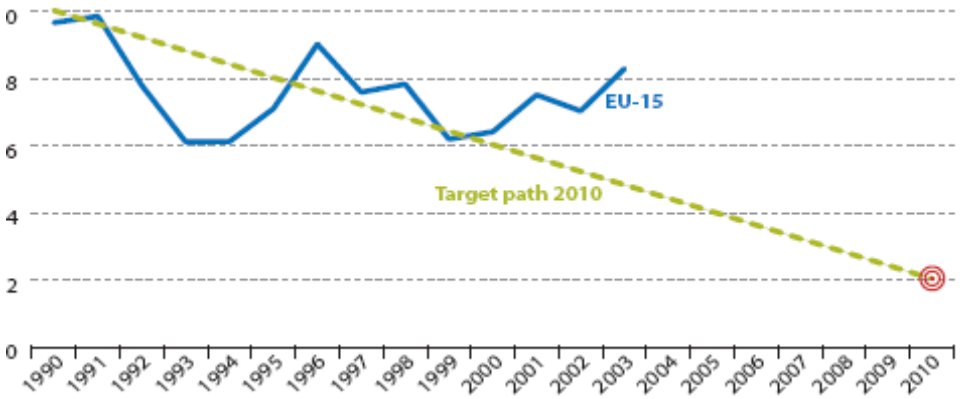
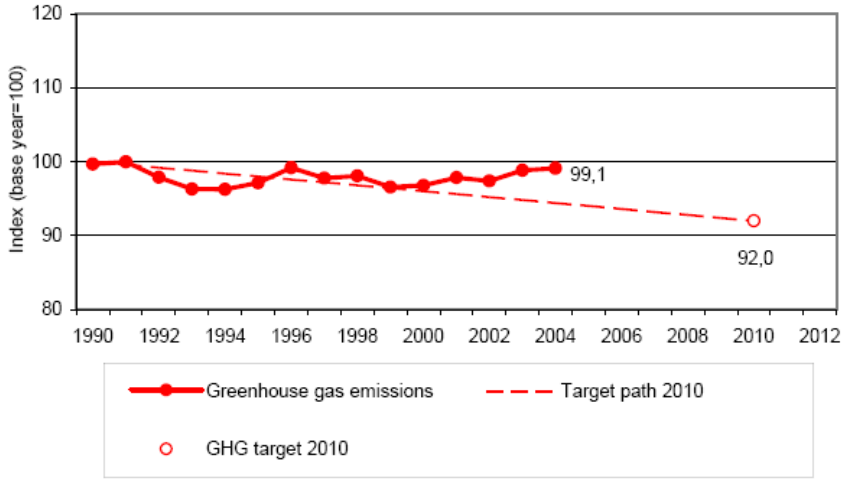


Table: EU-15 total greenhouse gas emissions as a percentage of the base year emissions. Source: EUROSTAT 2005[54].



Notes: The linear target path is not intended as an approximation of past and future emission trends. It provides a measure of how close the EU-15 emissions in 2004 are to a linear path of emissions reductions from 1990 to the Kyoto target for 2008–12, assuming that only domestic measures will be used. Therefore, it does not deliver a measure of (possible) compliance of the EU-15 with its GHG targets in 2008–12, but aims at evaluating overall EU-15 GHG emissions in 2003. The unit is index points with base year emissions being 100.

GHG emission data for the EU-15 as a whole do not include emissions and removals from LULUCF. In addition, no adjustments for temperature variations or electricity trade are considered.

Table: EU-15 Greenhouse gas emissions, Source: EEA Technical report No 6/2006 Annual European Community greenhouse gas inventory 1990–2004 and inventory report 2006 Submission to the UNFCCC Secretariat

In 2004, the total greenhouse gas emissions in the EU-15 amounted to 4227Mt CO2 equivalent. Carbon dioxide (CO2) is by far the most important greenhouse gas, accounting for about 83% of the total greenhouse gas emissions. The main source of CO2 emissions is the burning of fossil fuels. All sectors of the economy contribute in different degrees to greenhouse gas emissions. The largest sets of emissions come from energy production (33% in the EU-25), followed by the transport sector (19.3% in the EU-25).

[54] Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF

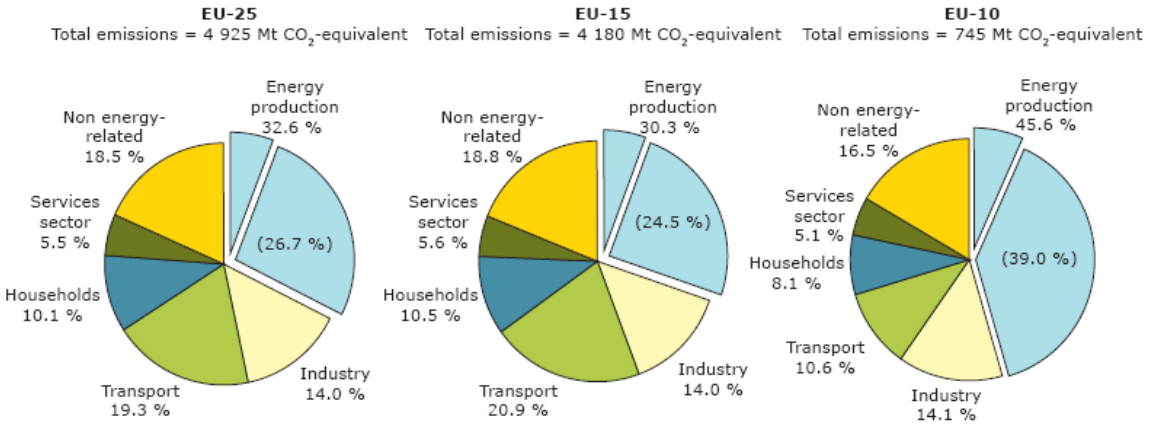


Table: Greenhouse gas emissions by sector in 2003, EU-25, EU-15 and EU-10. Source: EEA 2006[55]

Measures to reduce greenhouse gases should focus on increasing the share of low carbon sources or even carbon free such as renewables and increase overall energy efficiency.-. The EU has set as overall renewable electricity target of 22% of the gross electricity consumption by 2010[56].

In 2003, in the EU-25, the share of electricity generated from renewable energy sources was 12.7%. Renewable energy sources used to generate electricity were mainly hydropower (75%), biomass (13%) and wind power (10%).

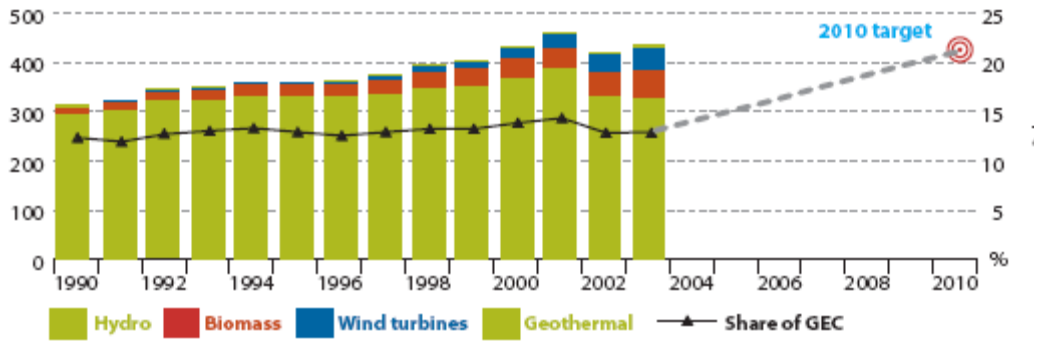


Table: EU-25 electricity generated from renewable energy source (TWh and as a percentage share of gross national electricity consumption). Source: EUROSTAT 2005[57]

Energy efficiency measures are crucial to achieve the long-term climate change commitments. Recent research by the International Energy Agency has identified energy efficiency as the single most important measure to reduce global greenhouse gas emissions[58]. Energy efficiency measures can change the total energy intensity, which identifies how much energy

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55 EEA "Energy and environment in the European Union, tracking progress towards integration", EEA Report 8/2006, p. 15, http://reports.eea.europa.eu/eea_report_2006_8/en/eea_report_8_2006.pdf. Copyright EEA Copenhagen (2005).

56 See Article 8(1) of the 6th EAP.

57 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 95.

58 IEA 2006, Energy Technology Perspectives.

is used to produce one unit of economic output and to what extent there is a decoupling between energy consumption and economic growth. Decoupling takes places when the energy consumption growth is less than that of the economic (GDP) growth[59].

While energy intensity has steadily decreased in the EU by 1.8% per year (party due to energy efficiency efforts), in 2003, energy intensity increased compared to the previous year.

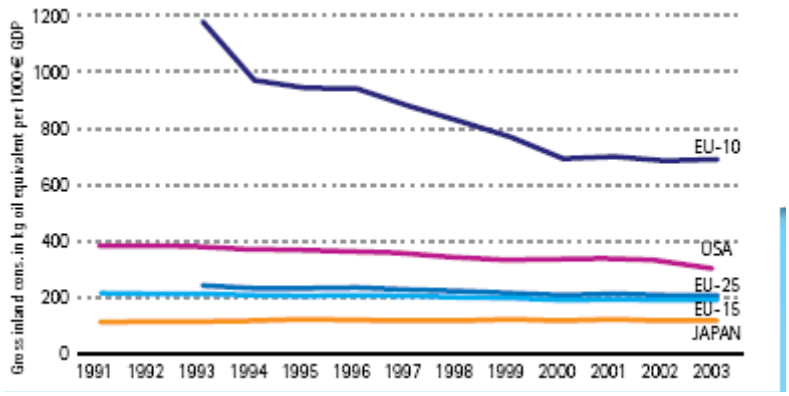
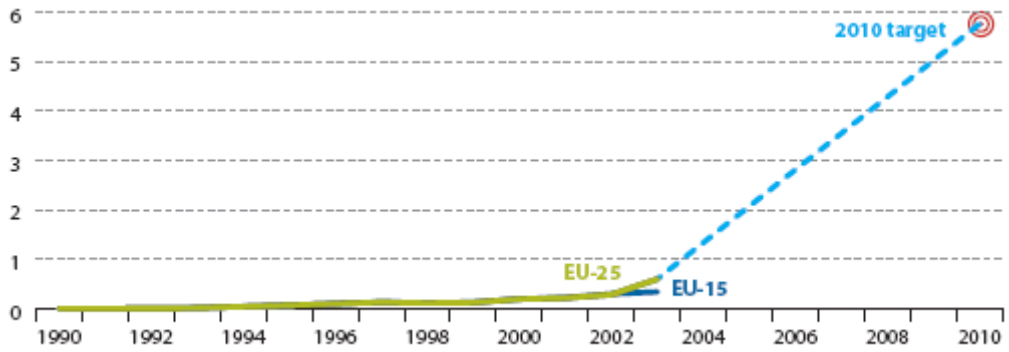


Table: Gross inland consumption of energy in kg oil equivalent per €1000 GDP. Source: European Commission EU environmental-related indicators 2006[60]

The transport sector accounts for more than 30% of final energy consumption in the EU. Transport policy is closely linked to energy policy, the two sharing connected objectives: e.g. lowering CO2 emissions and reducing EU dependency on imported fossil fuels[61]. The transport sector is responsible for 19% of the total greenhouse gas emissions in the EU-25 in 2003. Road transport accounts for 84% of the transport-related CO2 emissions. One measure to reduce the greenhouse gas emissions from transport is the promotion of a wider use of cleaner and/or alternative fuels, such as biofuels. The share of biofuels in the EU-25 was less than 0.6% in 2003. The graph below shows the share of biofuels in overall fuel consumption.



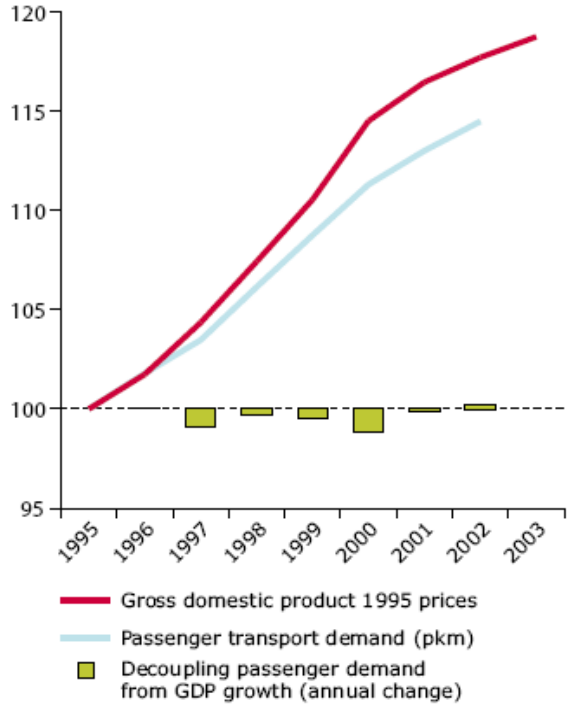
59 Absolute decoupling occurs when energy consumption is stable or decreasing while GDP is growing. Relative decoupling occurs when the energy consumption is growing but less than the GDP growth; EUROSTAT 2005, p. 91.

60 http://ec.europa.eu/environment/statistics/pdf/leaflet_env_indic_2006.pdf

61 European Council 23-24 March 2006.

Table: Share of biofuels in total fuel consumption of transport. Source: EUROSTAT 2005[62]

The 6th EAP requires action to be taken to decouple economic growth and the transport demand[63]. The graphs below show that both passenger and freight transport have grown over the past years almost in parallel with GDP[64].



62 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 97.

63 See Article 5(2)(ii)(h) of the 6th EAP.

64 European Commission, EU environment related indicators 2005 leaflet.

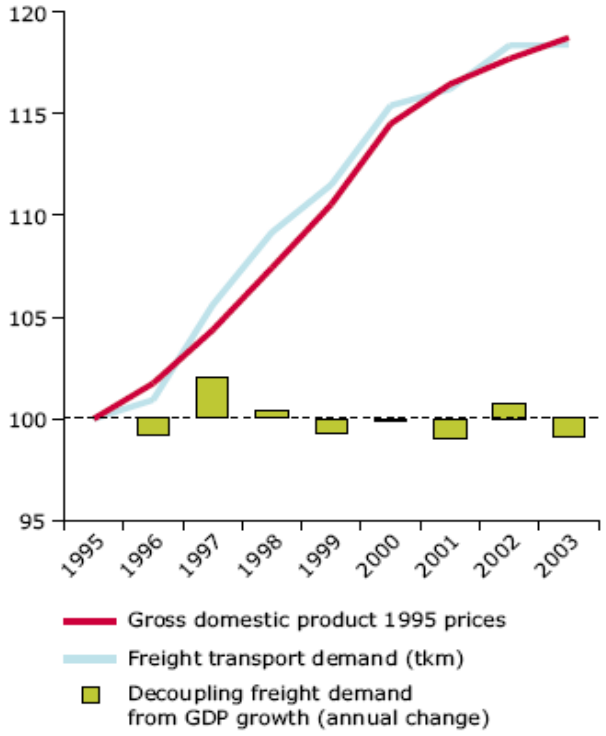


Table: Volume of passenger and freight transport (in tonne-km) and GDP (constant in 1995 euro) for the EU-25 (index 1995=100). Source: EEA 2005[65].

Given that the demand for transport services is unlikely to fall in the foreseeable future, continued improvements in the efficiency of transport will be needed to decouple energy consumption by transport from economic growth. The graph below shows that currently, both the energy consumption of transport and economic growth grow approximately at the same rate.

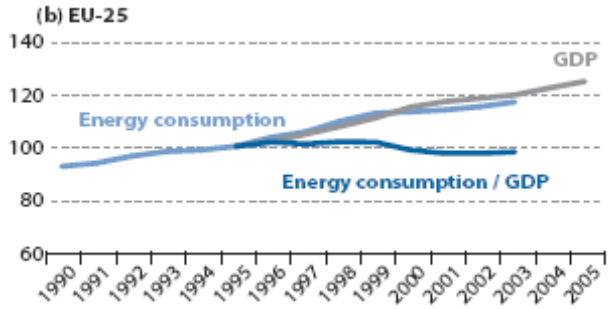


Table: Energy consumption of transport and GDP in the EU-25 (index 1995=100). Source: EUROSTAT 2005[66]

[65] EEA SOER 2005, p. 393 and 397.

[66] Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 159

2.2. Illustrative examples of actions taken so far

6th EAP's priority actions:

- Implementing international climate change commitments in the EU, notably under the Kyoto Protocol;
- Reducing greenhouse gas emissions in the energy sector, including promoting energy efficiency;
- Reducing greenhouse gas emissions in the transport sector, including the reduction of greenhouse gas emissions from motor vehicles;
- Reducing greenhouse gas emissions in industrial production, including the promotion of eco-innovation and assistance to small and medium-size enterprises;
- Reducing greenhouse gas emissions in other sectors, including promoting energy efficiency in buildings;
- Using other appropriate mitigation instruments, including the promotion of fiscal measures;
- Integrating climate change measures in EU external relations policies.

International Climate Change Commitments

During the past four years, the EU has made significant progress in its efforts to address climate change, being responsible for 14% of the global greenhouse gas emissions. The **Kyoto Protocol**[67] entered into force in 2005 setting out targets to be achieved in the period 2008-2012. Under the Kyoto Protocol, EU-15 Member States accepted an 8% reduction target at Kyoto and have agreed to a burden-sharing agreement among themselves. All new EU-10 have ratified the Kyoto Protocol[68] and 8 have committed to reduce their emissions by 6-8%. The EU established a monitoring system of greenhouse gas emissions[69]. At international level, EU's has been one of the leading forces that ensured that the Kyoto Protocol did enter into force.

The EU's main cross-cutting measure for reducing greenhouse gases is the **emissions trading system**, the first international trading system for greenhouse gas emissions which began operating on 1 January 2005 and regulates the emissions of CO_2 of most large point sources in the EU[70]. At national level, Member States have established national allocation plans for the period 2005-2007 which gives each installation in the scheme permission to emit a number of

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67 The Kyoto Protocol, currently ratified by 163 states and the European Community , sets targets for the reduction of the emissions of six greenhouse gases (carbon dioxide, methane, nitrous oxide and three groups of fluorinated gases – perfluorocarbons, chlorofluorocarbons and sulphur hexaflourane), to be achieved during the period 2008-2012.

68 Cyprus and Malta do not have emission reduction commitments under the Kyoto Protocol.

69 Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments there under, Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol Commission Decision 2005/166/EC of 10 February 2005 laying down rules implementing Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.

70 The scheme is based on Directive 2003/87/EC, which entered into force on 25 October 2003.

CO^2 that corresponds to the number of allowances received. In 2006 Member States established the National Allocation Plans for the period 2008-2012 and could apply to include emissions of other types of greenhouse gasses. Also in 2006 a revision process started to ensure that the emission trading system is ready as a future policy instrument for the period when the actual reduction commitments under the first commitment period of the Kyoto Protocol end, i.e. 2012. Following an invitation of the European Council, the Commission will consider a possible extension of the ETS to land use, land use change, forestry and surface transport.

In 2005, the Commission reported on the measures taken under the **first European Climate Change Programme** (ECCP) which started in 2000. The report covered Directives on emissions trading, the promotion of biofuels, renewable energy, energy performance of buildings, co-generation, landfill of waste and a Communication regarding vehicle taxation. It noted that 35 measures were already in force and that others were in the pipeline. It concluded that the EU has made "good progress" and that further progress depended on the "speed and thoroughness of the implementation by Member States of Community measures and domestic measures"[71].

The **Second Phase of the European Climate Change Programme** was launched in 2005 to prepare future policy actions, with 5 working groups: ECCP review, Impact and Adaptation, Carbon Capture and Storage, Aviation, CO2 and cars. The Communication, "Winning the Battle Against Climate Change", inter alia, outlined key elements for the EU's post-2012 strategy. It highlighted the need for broader participation by countries and sectors not already subject to emissions reductions, the development of low-carbon technologies, the continued and expanded use of market mechanisms, and the need to adapt to the expected impacts of climate change.

Reducing greenhouse gas emissions in the energy sector

In 2004, the Commission presented a Communication on the share of **renewable energy** in the EU[72], following the requirements of the Directive on renewable energy sources for electricity production ('RES-E Directive')[73]. It concluded that the 2010 target to generate 21% of electricity from renewable energy by 2010 will only be met by full implementation of the legal framework by Member States together with complementary measures geared to national conditions. An EU Action Plan to promote all forms of biomass was launched in December 2005[74].

In 2007, the Commission presented a comprehensive package of measures to establish a **new Energy Policy for Europe** to combat climate change and boost the EU's energy security and competitiveness. The package of proposals set a series of ambitious targets on greenhouse gas emissions renewable energy (including biofuels), and energy efficiency and aims to create a true internal market for energy and strengthen effective regulation. The Commission believes that when an international agreement is reached on the post-2012 framework this should lead to a 30% cut in emissions from developed countries by 2020. To further underline its commitment the Commission proposed that the European Union commits now to cut greenhouse gas emissions by at least 20% by 2020, in particular through energy measures.

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71 COM(2005) 615.
72 COM(2004) 366.
73 Directive 2001/77/EC.
74 COM(2005) 628.

This approach was supported by the meeting of the European Council at its meeting on 9 March 2007.

Furthermore, the Commission presented an EU strategy for **biofuels**, proposing policies beyond 2010, in early 2006[75]. So far, no specific action has been taken to prevent and reduce methane emissions from energy production and distribution.

On **subsidies**, the Commission has published a staff working paper, identifying public aid granted to different energy production sources[76]. In addition, the Commission is reviewing the state aid guidelines for environmental purposes.

On the promotion of **energy efficiency**, the EU has adopted three recent Directives to promote more efficient energy consumption[77]. The Green Paper on energy efficiency or "Doing more with less"[78] the Green Paper "A European Strategy for Sustainable, Competitive and Secure Energy"[79] and the Communication and Action Plan for energy efficiency[80] are the main policy drivers in this field for the future.

The **Intelligent Energy – Europe** (IEE) Programme, which entered into force on 3 July 2002 is the most important framework at EU level for co-financing EU renewable energy projects and the setting up of local and regional energy agencies, with a total budget of €250 million (2003-2006). For 2007-2013, the Commission decided to make it part of the new Competitiveness and Innovation Programme and to almost double the budget to €780 million.

The EU **Environmental Technology Action Plan** (ETAP), launched in January 2004 to foster the market for clean technologies, covers a spectrum of actions to promote eco-innovation, take-up of environmental technologies and their deployment in the service of better environmental performance. Almost all Member States have submitted national ETAP *road-maps*.

Implementation of ETAP will also be supported by new money under the EU's 2007-2013 budget. Under the Competitiveness and Innovation Programme €520 million has been earmarked for eco-innovation.

R&D and demonstration activities for Sustainable energy accounted for 810 M Euros in the sixth framework Programme for RTD. In the new Framework Programme, environment has been created as a separate heading and the Commission has proposed a 90% increase in funding available for environmental research (over €2.5 billion for the period 2007 to 2013). Similarly the Energy part has a budget of 2.3 billion euros to support the transition to a sustainable energy system

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75 COM(2006) 34. The share of biofuels in the EU-25 is less than 0.4%. However, following the adoption of the Biofuels directive in 2003, national initiatives are rapidly changing the situation (source: EEA). The Biofuel Progress report of the Environment Package quotes a figure of 1% for bio fuel penetration.

76 SEC(2002) 1275.

77 Directive 2002 /91/EC on energy performance in buildings, Directive 2005/32/EC on eco-design and Directive 2006/32/EC on energy efficiency and services.

78 COM(2005) 265, 22.6.2005.

79 COM(2006) 105, 8.3.2006.

80 COM(2006) 545, 19.10.2006

Reducing greenhouse gas emissions in the transport sector

In 2003, a Directive on the promotion of the use of **biofuels** or other renewable fuels for transport was adopted[81].

On 27 September 2005, the Commission adopted a Communication outlining plans to reduce the impact of **aviation** on climate change. The Communication recommends that aviation emissions should be included in the EU Emissions Trading Scheme and work on this has begun[82]. This is part of a comprehensive approach which includes research into cleaner air transport, better air traffic management and the removal of legal barriers to taxing aircraft fuel. With respect to the **maritime sector**, the Commission is preparing specific actions with respect to reducing greenhouse gases[83].

In order to reduce greenhouse gas emissions from **motor vehicles**, the Commission has adopted a strategy to achieve by 2010 at the latest - an average CO_2 emission figure of 120 g/km for all new passenger cars marketed in the Union. The main element is a 'voluntary agreement' by car producers to limit the average CO_2 emissions from new cars to 140 g/km by 2008-2009. At present, this target seems unlikely to be met and alterative strategies to meet the same targets are under consideration. Secondly, EU legislation requires mandatory labelling and provision of consumer information at the point of sale about each car's fuel economy and CO_2 emissions. As a third element, the Commission has 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 CO_2 emissions[84]. The proposed Directive on green public procurement may also affect public sector demand for cleaner transport[85].

Other cross-cutting instruments

Council Directive 2003/96/EC restructuring the Community framework for the **taxation** of energy products and electricity sets out a framework for setting minimum rates of duty for the various energy products covered.

Council Directive 2003/96/EC restructuring the Community framework for the **taxation** of energy products and electricity extended the scope of Community excise legislation from mineral oils to almost all energy products (in particular coal, natural gas) and to electricity, thus creating a framework for efficient energy consumption across the economy, including many of the production processes, households and transport sectors. By taxing hydrocarbons, the Directive creates a rather comprehensive incentive framework for renewables in heating. Up to know, the Directive has served as the key instrument of national efforts to support take up of biofuels in transport.

There are several environmental directives that have an effect on the greenhouse gas emissions from agriculture, which have been significantly reduced between 1990 and 2004,

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81 Directive 2003/30/EC of 8 May 2003.

82 The 6thEAP calls for specific actions to reduce greenhouse gas emissions from aviation by 2002, if no such action is agreed within the International Civil Aviation Organisation by 2002.

83 The 6th EAP calls for specific actions to reduce greenhouse gases from marine shipping of no such action is agreed within the International Maritime Organisation by 2003.

84 COM(2005) 261.

85 COM(2005) 634.

by 13%. The main environmental initiatives relevant for climate change mitigation are the Nitrates Directive, the Soil Framework Directive, the Integrated Pollution Prevention and Control Directive and the National Emission Ceiling Directive. The link is mainly due to a more appropriate handling and use of chemical fertilisers and animal manure as well as farming practices increasing the carbon storage in the soil. In addition, the successive CAP reforms since 1990 have also contributed to this trend by the introduction of set-aside, agri-environmental programmes aiming at extensification and cross-compliance (compulsory requirements on which farm payments are conditioned).

3. NATURE AND BIODIVERSITY

6th EAP's overall aim:

"…protecting, conserving, restoring and developing the functioning of natural systems, natural habitats, wild flora and fauna with the aim of halting desertification and the loss of biodiversity, including diversity of genetic resources, both in the European Union and on a global scale".

6th EAP's objectives:

- "…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".

3.1. Illustrative trends and prospects

The 6th EAP calls for halting of the loss of biodiversity in the EU by 2010, which means that loss of habitats (and of genetic diversity within species) must be curtailed and that threatened species should obtain a more secure survival status[86].

Worldwide, biodiversity loss is continuing at an unprecedented rate. Since the late 1970s, an area of tropical rain forest larger than the EU has been destroyed, mainly replaced by cash-crops such as palm oil and soy-bean plantations and for cattle ranching. With their habitats gone, there has been a commensurate loss of forest-dwelling biodiversity. Other diverse ecosystems, such as wetlands, islands, temperate forests, mangroves and coral reefs are under frequent and continuous threat. Import of resources to Europe and tourism of Europeans have contributed to these problems

The second Global Biodiversity Outlook demonstrated that an unprecedented effort would be

[86] EEA, SOER 2005, p. 282.

needed to achieve the global target to significantly reduce the rate of biodiversity loss by 2010.

Table 1. Status and trends of biodiversity related parameters according to the 2010 indicators.

Based on the assessment presented in chapter 2 of the Global Biodiversity Outlook. Arrows indic direction of trends. (Broad arrows indicate a high level of confidence about the trend; narrow arrows indic confidence; Dark arrows indicate a trend that is negative for biodiversity; pale arrows indicate a trend that is posi biodiversity). The quality of the data and indicators are shown by the stars at the right-hand side:

***** =good indicator methodology with globally consistent time course data**

**** =good indicator, but no time course data**

*** = indicator requires further development and/or limited data.**

FOCAL AREA: Status and trends of the components of biological diversity		
↘	Trends in extent of selected biomes, ecosystems, and habitats	★★★[1]
↘	Trends in abundance and distribution of selected species	★★★
↘	Change in status of threatened species	★★★
↘	Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socio-economic importance	★
↗	Coverage of protected areas	★★★
FOCAL AREA: Ecosystem integrity and ecosystem goods and services		
↘	Marine Trophic Index	★★★
↘	Connectivity – fragmentation of ecosystems	★★
↓ ↑	Water quality of aquatic ecosystems	★★★
FOCAL AREA: Threats to biodiversity		
↗	Nitrogen deposition	★★★
↗	Trends in invasive alien species	★
FOCAL AREA: Sustainable use		
↘	Area of forest, agricultural and aquaculture ecosystems under sustainable management	★
↗	Ecological footprint and related concepts	★★★
FOCAL AREA: Status of traditional knowledge, innovations and practices		
↘	Status and trends of linguistic diversity and numbers of speakers of indigenous languages	★
FOCAL AREA: Status of access and benefit sharing		
?	Indicator of access and benefit-sharing to be developed	
FOCAL AREA: Status of resources transfers		
↘	Official development assistance (ODA) provided in support of the Convention	★

1. for forests; data not available globally for all biomes, ecosystems and habitats

The preceding table gives an overview of the state of indicator development and data. Several indicators have sufficient resolution to determine a change in the rate of biodiversity loss by 2010 including habitat change in certain types of ecosystems, trends in abundance and distribution of selected species, the status of threatened species, the Marine Trophic Index and nitrogen deposition. Others may be developed for use by 2010. Source: COP Convention on Biological Diversity, UNEP Summary of the Second Global Biodiversity Outlook, March 2006.

Annexes to the EU Birds and Habitat Directives and the Bern Convention contains lists of globally threatened species. According to the International Union for the Conservation of Nature, 147 vertebrate (mammals, birds, reptiles, amphibians and fish), and 310 invertebrate species (crustaceans, insects and molluscs) in the EU-25 are considered to be globally

threatened. The following indicator gives the percentage of IUCN threatened species not protected at EU level. It shows that most of the threatened bird species, mammals and reptiles are protected by EU instruments whereas invertebrate species – amphibians and fish – are not.

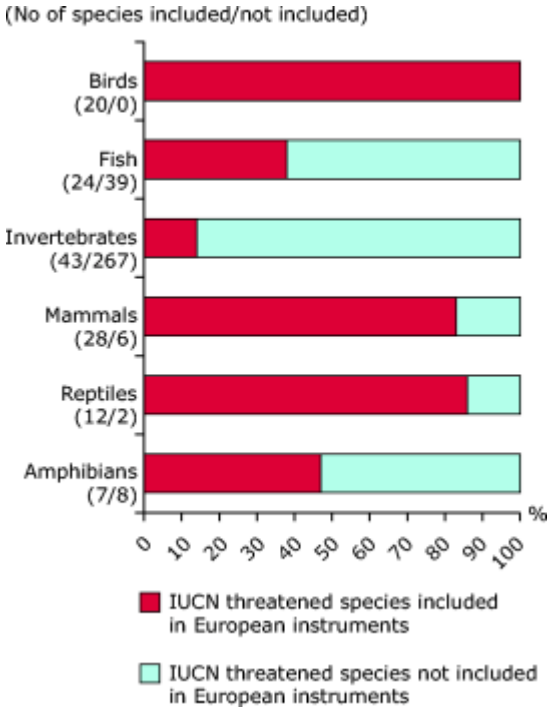

Table: Percentage of inclusion of globally threatened species occurring in the EU-25 in protected species lists of EU Directives and the Bern Convention. Source: EEA 2005[87]

The trend in farmland bird species dependent on agricultural land for nesting or feeding is considered a good indicator of trends in farmland biodiversity.[88]. 2003 figures show an increase in populations, but the overall trend remains negative.

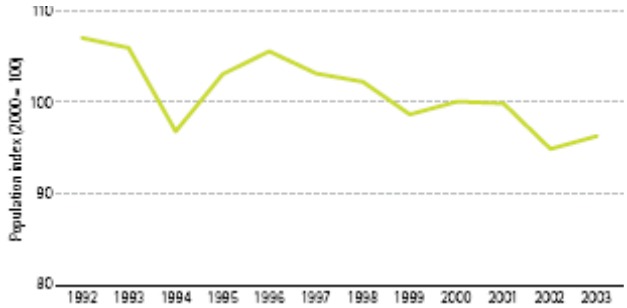

Table: Population trends of selected farmland bird species (index 2000=100). Source: European Commission EU environmental-related indicators 2006[89]

The environmental pressures related to land use are almost always irreversible and include the sealing of land and fragmentation of habitats. The 6th EAP encourages and promotes

87 EEA, SOER 2005, p. 281. Copyright EEA Copenhagen (2005).

88 This indicator is used as a proxy for a general biodiversity index which is not yet available.

89 http://ec.europa.eu/environment/statistics/pdf/leaflet_env_indic_2006.pdf

sustainable land-use planning with a particular emphasis on Integrated Coastal Zone Management[90]. The following graph shows that in most EU countries, the built-up areas expressed as percentage of the total land area, have increased. Built-up areas imply urbanisation, transport infrastructure and industrial premises and to a lesser extent tourism, in certain countries.

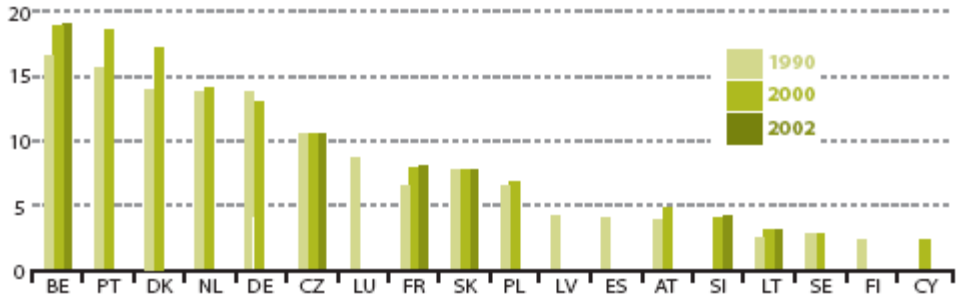

Table: Built-up areas as a percentage of total land use. Source: EUROSTAT 2005[91]

The 6th EAP calls for implementing and further developing strategies and measures on forests, taking into account biodiversity considerations[92]. The quality of the EU forests can be measured on the basis of defoliation, which is the needle or leaf loss in the assessable crown of a tree, as compared with a reference tree. The following graph shows the percentage of forest trees damaged by defoliation in the EU-25.

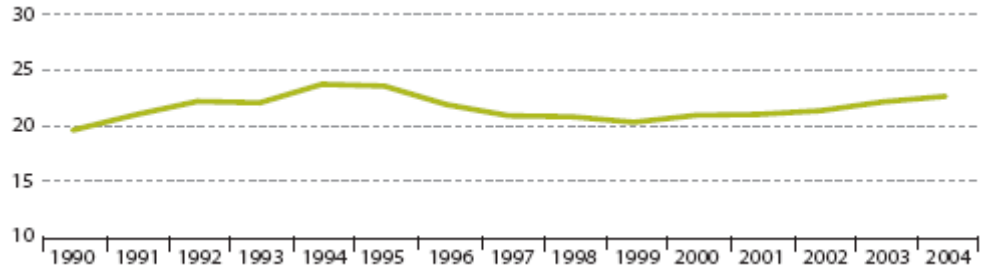

Table: EU-25 evolution of forest trees damaged by defoliation. Source: EUROSTAT 2005[93]

Forest certification is a measure to help ensure sustainable forest management. The following graph indicates the percentage of certified forest area compared with the total forest area:

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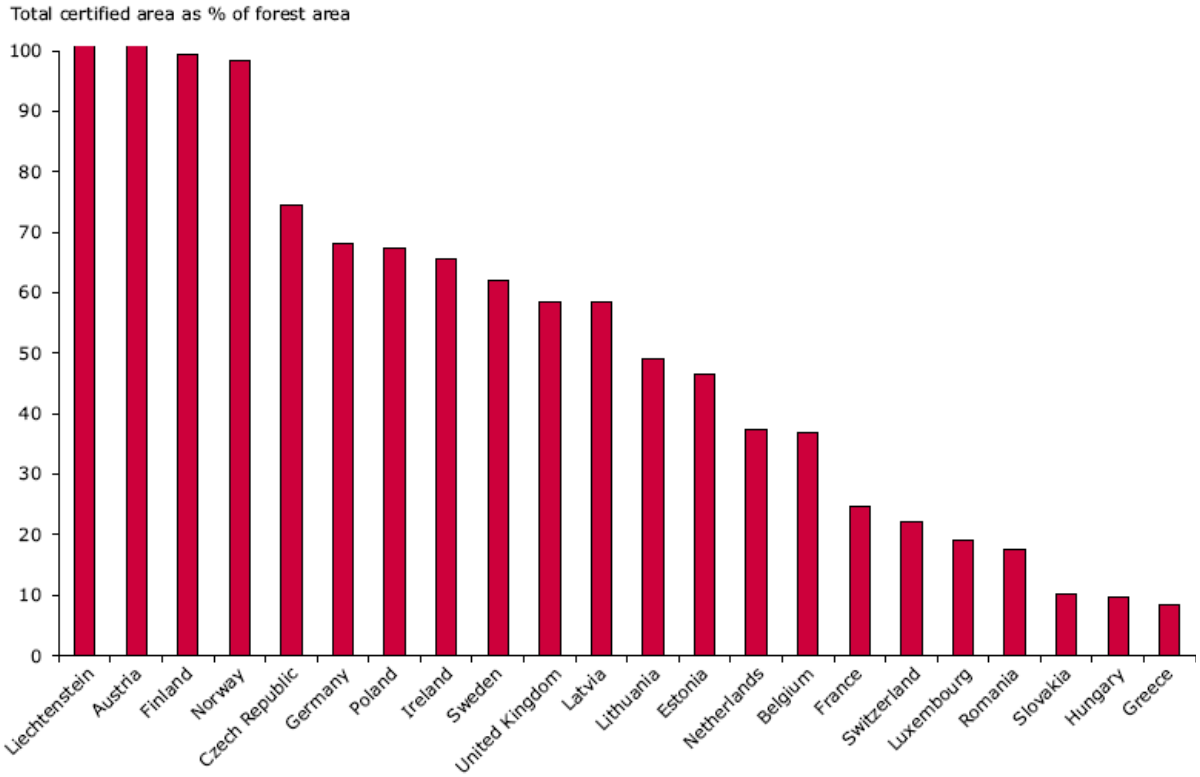
90 See Article 3(10) and Article 6(2)(g) of the 6th EAP.

91 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 147.

92 See Article 6(2)(h) of the 6th EAP.

93 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 149.



Source: EEA 2006 [94]

Biodiversity and climate change are closely linked. Although threatened by other external factors, such as habitat fragmentation, over fishing, land-use, etc, biodiversity loss is being exacerbated by climate change. Variations in temperature both on land and in the sea, rising sea-levels, precipitation levels and extreme weather events including forest fires are all key factors which will further contribute to damaging a vulnerable sector. Some species will migrate to higher altitudes and latitudes, whereas many creatures in extreme habitats could face extinction, such as polar bears. Habitats may be lost altogether. Variation in precipitation patterns will have consequences for agriculture in Europe, leading to a change in the characteristic biodiversity of associated habitats. A noticeable shift in the distribution of marine species (such as planktonic species) has been observed as a consequence of the increase of sea-temperatures, thus jeopardising the equilibrium of the food chain. Ocean acidification, brought on by an increasing amount of carbon dioxide absorbed by the oceans, has direct consequences on the process of calcification of marine life. The following listing summarises the impact climate change can have on biodiversity.

[94] EEA Report 5/2006 "Progress towards halting biodiversity by 2010", http://reports.eea.europa.eu/eea_report_2006_5/en/eea_report_5_2006.pdf. Copyright EEA Copenhagen (2005).

Phenology
Changes in plant phenology (timing of flowering, fruit ripening, leaf unfolding, leaf colouring, length of growing season)
Changes in animal phenology (changing migration departure and arrival times and breeding times)
Disturbances in plant-animal synchrony
Changes in species behavioural pattern
Impacts on plant physiology, including responses to drought/ floods
Changes in migration routes (birds, butterflies, fish)
Changes in extent/population of wintering, breeding and migration areas (birds)
Changes in altitude migration (butterflies)
Changes in ecosystems
Depletion of species which cannot move
Changes in biomass productivity
Changes in species composition, including spreading of pests
Changes in permafrost distribution and rate
CO_2-related
Contribution of ecosystems to CO_2 sequestration
Conversion from high nature value ecosystem to areas for carbon sink purposes

Source: EEA 2006 [95]

[95] EEA Report 5/2006 "Progress towards halting biodiversity by 2010", http://reports.eea.europa.eu/eea_report_2006_5/en/eea_report_5_2006.pdf, p. 87. Copyright EEA Copenhagen (2005).

6th EAP's priority actions:

- Actions on biodiversity, including the adoption by the Commission of the Biodiversity Action Plan and establishment of the Natura 2000 network;
- Actions on accidents and disasters, including Community co-ordination of Member State actions related to accidents and natural disasters;
- A Thematic Strategy on soil protection;
- Promoting sustainable management of extractive industries;
- Promoting the integration of conservation and restoration of the landscape values into other policies;
- Promoting the integration of biodiversity considerations in agricultural policies and encouraging sustainable rural development, multifunctional and sustainable agriculture;
- Promoting sustainable use of the seas and conservation of marine ecosystems, including the development of a Thematic Strategy on the marine environment;
- Implementing and further developing strategies and measures on forests;
- Actions on genetically modified organisms (GMOs), including ratification and implementation of the Cartagena Protocol on biosafety.

3.2 Illustrative examples of actions taken so far

Actions on Biodiversity

EU biodiversity policy is based on two main pieces of legislation, the 1979 Birds Directive and the 1992 Habitats Directive. Both benefit (until December 2006) from a specific financial instrument, the *Life-Nature* Fund. Its priorities are to offer financial support for the creation of an EU ecological network of special areas of conservation: Natura 2000.

Completion of the **Natura 2000** network[96] for the EU-25 has progressed substantially over the past four years, following 15 years of development, and the designation of the Natura sites was completed in spring 2006. The Commission established guidance documents in order to facilitate implementation of Natura 2000 at Member State level. Work has begun to extend the network to the marine environment.

The hunting and bird conservation communities co-signed a sustainable hunting agreement brokered by the Commission in 2004, a supporting element in the establishment of the Natura 2000 network.

A set of **biodiversity indicators** is under development. The European Environment Agency is co-operating with the Commission, working on streamlining biodiversity indicators under the SEBI-2010 project. These indicators will be a vital element in helping to determine the viability of species.

[96] The Natura 2000 network comprises of 4169 special protection areas covering nearly 382000 square kilometres to conserve 194 bird species and subspecies and 19516 sites of Community interest, covering nearly 523000 square metres across the whole of the EU-25, covering almost 14% of its land area and 65000 square kilometres of marine area. Furthermore, special areas of conservation conserve the 273 habitat types, 200 animal species and 724 plant species listed under the Habitats Directive.

A review of the 1998 Biodiversity Strategy and Action Plans was carried out in 2003-2004 and the results were presented during the 2004 Malahide and Bergen op Zoom conferences. In 2006 a new **Communication on Biodiversity** was adopted. It identifies key challenges and priorities up to 2010 and beyond. It highlights two particular threats which will need to shape implementation priorities over the coming years: land use and development; and the increasing impact of climate change on biodiversity.

The Biodiversity strategy is linked with three thematic strategies: on sustainable use of resources (already adopted); pesticides – the latter expected to be adopted soon, following a hiatus to ensure coherence with the revision of Directive 91/414/EEC[97]; and soil which was adopted by the Commission on 22nd September 2006.In 2003, the Commission presented a Communication on the implementation of the Bonn Guidelines on Access to Genetic Resources and the fair and equitable sharing of benefits arising out of their utilisation ('benefit sharing'), under the UN Convention on Biological Diversity (CBD)[98].

On the prevention and control of invasive alien species, the Commission presented a proposal for a Regulation on the use of non-native and locally absent species in aquaculture[99].

The **Thematic Strategy on pesticides**, adopted in July 2006, aims at improving the way pesticides are used across the EU. It complements existing EU legislation controlling which pesticides can actually be placed on the market. The **Thematic Strategy on soil protection**, adopted in September 2006, sets a common EU framework for action to preserve, protect and restore soils, but leaves Member States flexibility to implement it in a way which fits local situations best (see below).

Actions on Accidents and Disasters

The Community Action Programme for Civil Protection 2000/2006 supports and supplements Member State's action at national level. In 2001, the Commission established the **Civil Protection Monitoring and Information Centre** – the 'MIC' – which is manned 24 hours a day, 365 days a year and responds regularly to calls to co-ordinate intervention in case of disaster beyond the resources of individual countries' capacity to cope. The MIC is now regarded as a well-established element of EU civil protection activity[100].

Reinforcing the Community Civil Protection Mechanism has acquired a new urgency in the light of major natural disasters, such as the tsunami in South Asia, forest fires and floods in large parts of Europe (also landslides, which resonate especially with the Soil Thematic Strategy), terrorist attacks in Madrid and London. Consideration is currently underway at political level to ensure that current emergency capacities managed at the EU level are sufficient overall to meet demand effectively and efficiently.

At present, the instruments developed and managed in the framework of civil protection focus on the management of the consequences of major disasters. There is both an economic

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97 Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market (OJ L 230, 19.8.1991, p. 1).

98 COM(2003) 821.

99 COM(2006)154.

100 Examples of MIC intervention: the floods in Germany, Austria and the Czech Republic (2002), earthquake in Algeria and Iran (2003), the forest fire in France (2003) and Portugal (2004/2005), earthquake in Morocco (2004), the Asian Tsunami (2004), Hurricane Katrina (2005), the earthquake in Pakistan (2005).

incentive and a strong political need to include also preventive elements in this work, focusing in particular on reducing risks and vulnerabilities across Europe.

An exploratory work should therefore be undertaken to evaluate the need for any Community action in the field of prevention. This approach should encompass a wide range of activities – including infrastructural measures, land-use planning, public information and risk mapping – and address these in a systematic and horizontal way. While leaving sufficient scope for sector specific measures, it will meet the political demand for improved consistency and comprehensiveness in EU disaster management. Combined with further work on risk assessment, it should allow the Commission to significantly enhance preventive measures and reduce the vulnerability of European communities.

In light of the consequences of industrial accidents (e.g. Toulouse, Baie Mare and Enschede) and recent studies on carcinogens and environmentally dangerous substances, the **Seveso II Directive** has been revised and extended to also cover risks arising from storage and processing activities. This includes activities such as mining, activities involving the use of pyrotechnic and explosive substances and those associated with the storage of ammonium nitrate based fertilizers. Operators need to adopt control measures in order to prevent and/or limit the consequences of major accidents and to minimise the impacts thereof on people and the environment.

A Thematic Strategy on Soil Protection

The **Soil Thematic Strategy**[101] defines common principles to limit the major threats to European soils (erosion, organic matter decline, compaction, landslides, salinisation, sealing and contamination) and outlines measures to halt soil degradation. Within the strategy, a proposal for a Soil Framework Directive sets out common principles, objectives and actions. It requires Member States to adopt a systematic approach to identifying and combating soil degradation, tackling precautionary measures and integrating soils protection into other policies. But is allows for flexibility - it is for the Member States to decide the level of ambition, specific targets and the measures to reach those. In particular, Member States are required to identify areas where there is a risk of erosion, organic matter decline, compaction, salinisation and landslides. They must set risk reduction targets for those areas and establish programmes of measures to achieve them. They will also have to prevent further contamination, establish an inventory of contaminated sites on their territory and draw up national remediation strategies. Finally, the Member States are required to limit or mitigate the effects of sealing, for instance by rehabilitating brownfield sites. The Strategy has been adopted on 22 September 2006.

Sustainable management of extractive industries

In 2003, the Commission proposed a **Directive on the management of waste from the extractive industries** aiming at preventing or reducing chronic or accidental environmental effects from mining waste. This Directive entered into force in 2006. The implementation of this Directive will be supported by a reference document on "best available techniques for the management of tailing and waste-rock, which was finalised n 2004. These measures, together with the extension of the Seveso II Directive to the extractive industry provide the framework of the sustainable management of extractive industries in the EU.

[101] COM(2006) 231

Integration of conservation and restoration of the landscape values into other policies

The Soil Thematic Strategy, by providing for a more sustainable use of soil and land, will contribute and a have positive impact on landscape preservation. Landscape initiatives will be co-ordinated under the new financial instrument LIFE+ from 2007. Information gathering on environmental impacts of land use will be strengthened through the International Panel on the Sustainable Use of Resources, established by the Thematic Strategy on the Sustainable Use of Natural Resources. At international level, the Council of Europe's European Landscape Convention came into force in March 2004 and has been ratified by most Member States.

Integration of biodiversity considerations in agricultural policies

During the past four years, biodiversity concerns have been increasingly integrated into the implementation of the reformed **common agricultural policy** (CAP) in 2003[102] and further with the creation of the European Agricultural Fund for Rural Development (in 2005[103]. Key components are the decoupling of direct payments from production; and cross-compliance as a condition for payments to farmers. The 2003 CAP reform also sets economic incentives to reduce animal numbers and reduce fertiliser use and promotes rural development strategies in the Member States – thereby reducing GHG (N_2O and Methane) emissions.

Council Regulation (EC) No 1698/2005 on support for **rural development** by the agricultural European Agricultural Fund for Rural Development[104] includes an obligation to allocate a minimum of 25% of the budget to land management and environment measures, and also includes a range of measures to encourage environmental integration.

Organic farming continues to grow, albeit at a gentler pace, in response to increased consumer awareness about the effect of intensive farming on the natural environment[105]. In this field, the Commission published an Action Plan for Organic Farming in 2004[106] followed by proposals for revised rules on organic farming and labelling in December 2005[107].

The Council adopted a Regulation establishing a new Community programme on the conservation, characterisation, collection and utilisation of genetic resources in agriculture (Council Regulation (EC) No 870/2004). This programme will promote genetic diversity and the exchange of information including close co-ordination between Member States and between the Member States and the European Commission for the conservation and sustainable use of genetic resources in agriculture. It will also facilitate co-ordination in the field of international undertakings on genetic resources. The budget allocated to this programme amounts to EUR 10 million. Two calls for proposals were launched, the first one in 2005 and the second one in 2006.

The **IRENA project** (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy) launched in 2002, has produced a set of 35 agri-environment indicators. This initiative was followed-up by the publication of Commission Communication on the development of agri-environmental indicators for monitoring the integration of environmental

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102 Regulation (EC) No 1782/2003.

103 Regulation (EC) No 1698/2005.

104 COM(2004) 490, 14.7.2004.

105 2006 EU environment-related indicators. In 2003 organic farming represented 4% of the total farmed area in the EU-15, a doubling in 5 years. In the new EU-10, the proportion remains below 1%.

106 COM(2004) 415.

107 COM(2005) 671.

concerns into the common agricultural policy (COM(2006)508 final). It reported on the work undertaken with regard to the development of agri-environment indicators, and in particular on the results of the IRENA operation.

Sustainable use of seas and conservation of the marine ecosystems

The reform of the **Common Fisheries Policy** (CFP) of 2002[108] aims, *inter alia*, to reduce the size of the EU fishing fleet to a level commensurate with maintaining fish stocks at a sustainable level and to promote environment-friendly fishing methods. As part of the CFP reform process, the Commission adopted a Community Action Plan to integrate environmental protection requirements into the CFP, setting out 20 targets with time-tables[109]. Over-fishing remains a problem[110] and recovery of some stocks is proving more difficult than expected.

The **Thematic Strategy on the marine environment**[111] aims to achieve "good environmental status" for Europe's seas and oceans by 2021 at the latest. It is linked to the review of the river basin management plans under the Water Framework Directive and thus bridges the gap between environmental protection of inland waters and the open seas. The strategy delivers the environmental pillar of the future EU Maritime Strategy, a priority of the Commission.

To achieve its objectives, the Marine Thematic Strategy proposes a Framework Directive which requires Member States to draw up and implement national programmes in co-ordination with other nations which share the same waters. Under the draft Framework Directive, national programmes would need to be approved by the Commission while co-operation with countries outside the EU would be encouraged within the framework of existing conventions.

In May 2002, a Recommendation on the implementation of **integrated coastal zone management** in Europe was adopted[112].

Strategies and measures related to Forests

In 2003, the European Parliament and the Council adopted Regulation (EC)2152/2003 establishing a new Community scheme on monitoring of forests and environmental interactions to protect the Community's forests. The scheme builds on the achievements of two Council regulations for monitoring the impacts of atmospheric pollution (Council Regulation (EEC)3528/86) and of fires (Council Regulation (EEC)2158/92) on forest ecosystems. Since Regulation (EC) 2152/2003 concerning monitoring of forests and environmental interactions in the Community (**Forest Focus**) expired in 2006, the monitoring needs to find a new structure. The draft Regulation concerning the Financial Instrument for the Environment (the so-called LIFE+, which will run from 2007 to 2013) intends to add a European added value to Forest Focus by shifting from the health monitoring to parameters which are needed in other policy areas, such as climate change, biodiversity, soil or water.

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108 Regulation (EC) No 2371/2002.

109 COM(2002) 186.

110 In 2003, 22% of total catches were outside safe biological limits, marking a substantial worsening compared to 2002 (8%), 2006 EU environment-related indicators.

111 COM(2005) 504, 24.10.2005.

112 Recommendation 2002/413/EC.

In 2005, the Commission prepared a report on the 1998 EU Forest Strategy. It identified the need to expand climate change policies to include more focus on forestry. An EU **Forestry Action Plan** was presented on 15 June 2006, *inter alia* linking the management of forests with biodiversity and climate change goals. The Handbook on environmental public procurement (2004) provides incentives for establishing forest certification schemes, an issue under regular discussion.

The serious environmental impact of illegal logging is one of the main reasons why the Commission put forward a **FLEGT Action Plan** in 2003. The Action Plan outlines a series of measures to address illegal logging both in the countries concerned and within the EU as a timber importer. In 2004 the Commission put forward a proposal for a Regulation and for a negotiating mandate for FLEGT Partnerships which would allow the exclusion of illegal timber from countries with which the EU would sign voluntary bilateral partnership agreements. The proposals have been discussed in Council during 2004 and 2005.

Funding for FLEGT-related projects has been provided through the Tropical Forest budget line and other development cooperation instruments. Furthermore, the Commission has participated in regional FLEG processes in East Asia, Africa and Europe and North Asia. These processes aim to draw political attention to the issue of forest law and governance and the fight against illegal logging. The World Bank has played an important role in facilitating these processes and their follow up, and has received grant support for this from the Commission

Actions on Genetically Modified Organisms (GMOs)

During the last four years, progress was made with the implementation of the **Cartagena Protocol on Biosafety** seeking to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology, which entered into force in 2003.

In the light of new scientific and social developments, the EU has created a **new legal framework**, which entered into force in 2004. This new legal framework includes rules on the traceability, labelling and trans-boundary movements of GMOs[113]. In June 2005, the Commission created a network for the exchange and co-ordination of information concerning co-existence between GMO-crops and conventional / organically-farmed crops.

[113] See Regulations (EC) No 1829/2003, (EC) No 1830/2003, (EC) No 1946/2003.

4. ENVIRONMENT, HEALTH AND THE QUALITY OF LIFE

4.1. Illustrative trends and prospects

6th EAP's overall aim:

"…contributing to a high level of quality of life and social well being for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment and by encouraging a sustainable urban development".

6th EAP's objectives:

- "..achieving better understanding of the threats to environment and human health in order to take action to prevent and reduce these threats";
- "..contributing to a better quality of life through an integrated approach concentrating on urban areas";
- "..aiming to achieve within one generation (2020) that chemicals are only produced and used in ways that do not lead to a significant negative impact on health and the environment, recognising that the present gaps of knowledge on the properties, use, disposal and exposure of chemicals need to be overcome";
- "..chemicals that are dangerous should be substituted by safer chemicals or safer alternative technologies not entailing the use of chemicals, with the aim of reducing risks to man and the environment";
- "..reducing 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";
- "..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";
- "..achieving levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment";
- "..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".

One of the objectives of the 6th EAP is to achieve within one generation (i.e. by 2020) that chemicals are only produced and used in ways that do not lead to significant negative impacts on health and the environment; and that chemicals that are dangerous should be substituted by safer chemicals or safer alternative technologies not entailing the use of chemicals[114]. There are about 30.000 man-made chemicals in use in the EU, which are produced in the EU or imported in quantities of more than 1 tonne per year.

Eurostat has developed an indicator presenting trends in the production of toxic chemicals in the EU-15 and EU-25. The toxic chemicals are divided into five toxicity classes. The most dangerous ones are the CMR chemicals (carcinogenic, mutagenic and reprotoxic), followed by chronic toxic chemicals, very toxic chemicals, toxic chemicals and harmful chemicals.

[114] See Article 7(1) of the 6th EAP.

The following graph shows that between 1995 and 2005 the production of toxic chemicals increased by 23,5%, with a 25% growth of the most dangerous group (Carcinogenic, mutagenic and reprotoxic chemicals: shown as 'CMR-chemicals').

The relatively high growth of CMR chemicals within the group of toxic chemicals represents a worrying trend if continued. The coming years will have to show whether a decoupling of the production of toxic chemicals from the total production could be achieved."

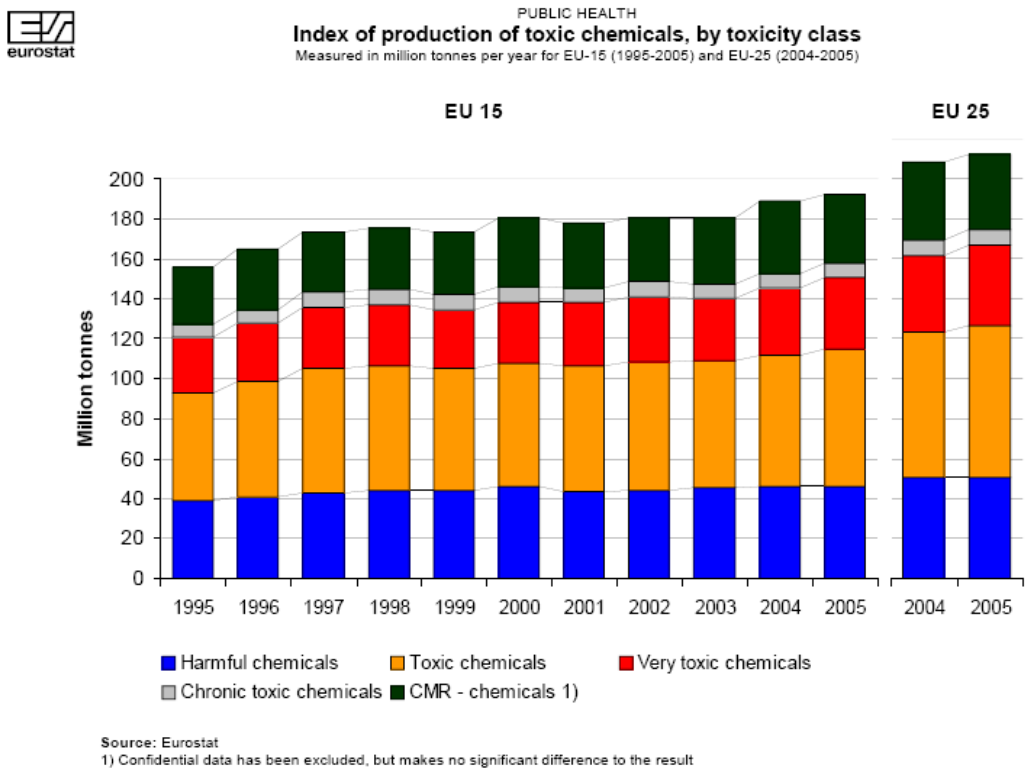
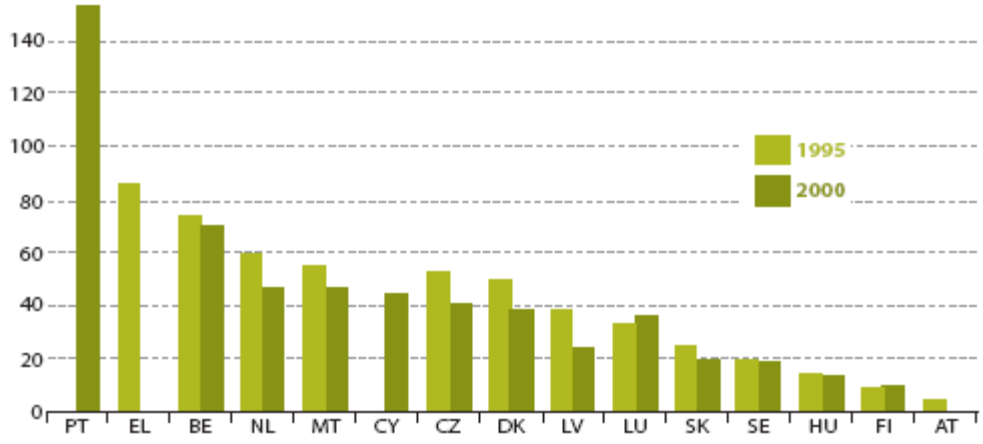


Table: Evolution of EU-15 production of toxic chemicals by toxicity class (millions of tonnes per year. Source: Eurostat 2005[115].

The 6th EAP requires that extraction of water resources should be sustainable over the long term[116]. The graph below expresses groundwater abstraction as a percentage of available groundwater resources. It shows that water abstraction decreased in more than two-thirds of the EU countries for which data was available, but abstraction levels in Southern EU remain a cause of concern.

115 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p.73.

116 See Article 7(1) of the 6th EAP.



Source: EUROSTAT 2005[117]

The 6th EAP also call for high water quality, i.e. water that does not give rise to significant impacts on and risks to human health and the environment[118]. This objective is pursued by implementation of the Water Framework Directive[119], the Nitrates Directive[120] and will be pursued by the Thematic Strategy on the Use of Pesticides[121]. Agricultural pressures on water quality can be assessed by looking at the gross nutrient balance for nitrogen, since this provides an indication of the risk of nitrates leaching into groundwater. It follows from the graph below that the gross nitrogen balances are particularly high – and therefore worrying – in the Netherlands, Belgium, Luxembourg and Germany.

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117 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 147.

118 See Article7(1) and (2)(e) of the 6th EAP.

119 Directive 2000/60/EC of 23 October 2000 (OJ L 327, 22.12.2000, p. 1).

120 Directive 91/676/EC.

121 Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: A Thematic Strategy on the Sustainable Use of Pesticides" - COM(2006) 372 and COM(2006) 373, 12.7.2006.

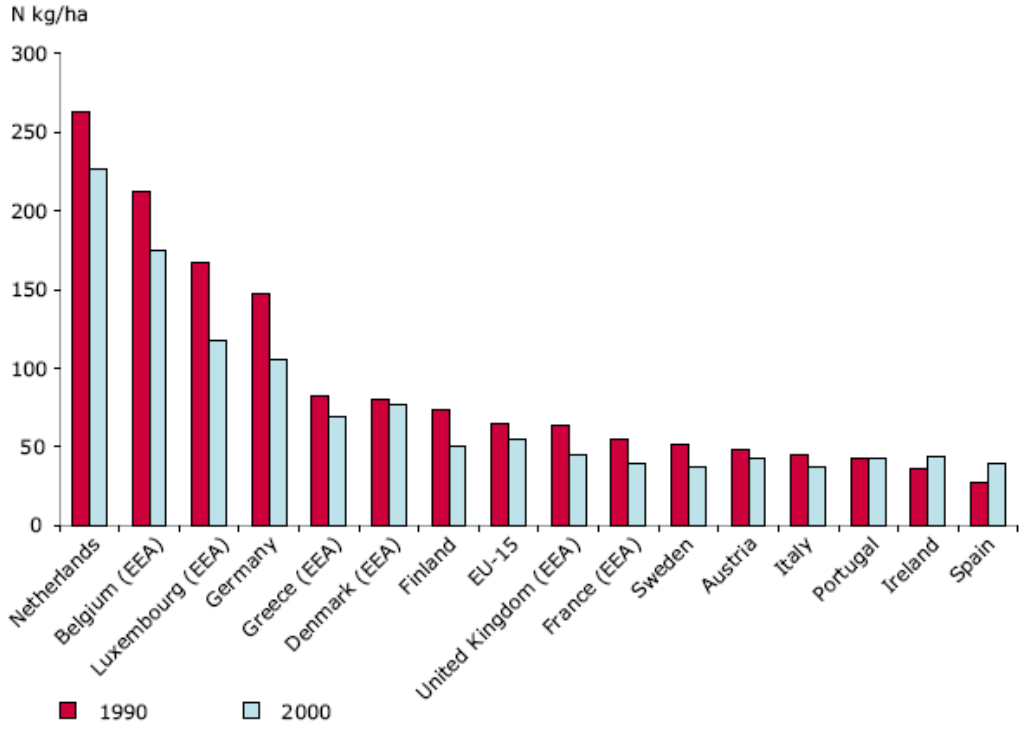
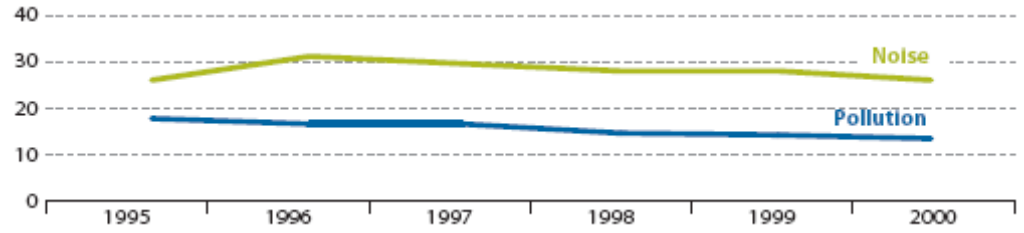


Table: Gross nutrient balance at national level. Source: EEA 2005[122]

The 6th EAP calls for a substantial reduction of the number of people regularly affected by long-term average levels of noise, in particular from traffic, which according to scientific studies causes detrimental effects on human health, with concomitant effects on the economy[123].

Environmental *noise* causes health risks characterised by, interference with social behaviour and speech communication, sleep disturbance, poor performance at work or school and simply annoyance that disrupts normal sociability, notably in the urban setting. While standards for restricting individual vehicle noise have been moderately effective, increased traffic volumes have meant that noise is present for longer periods than before. Disrupted sleep from night flights carrying freight is a typical example.

Due to the implementation of EU legislation on emissions from industrial plants and motor vehicles and noise, there has been a decrease in the number of people living in households affected by pollution and noise between 1996 and 2000. However, more than 25% of the EU-15 population, i.e. more than 95 million people, still suffer from high exposure levels to noise.



122 EEA State and Outlook 2005, p. 353. Copyright EEA Copenhagen (2005).

123 See Article 7(1) of the 6th EAP.

Table: EU-15 proportion of population living in households suffering from noise and pollution in %. Source: Eurostat 2005[124].

The 6th EAP aims to achieve levels of air quality that do not give rise to significant negative impacts on and risks to human health and to the environment[125]. A 2004 WHO evaluation found that air pollution contributed to 100,000 premature deaths and 725,000 working days lost annually in Europe.

The Air Quality Framework Directive (92/62/EC) defines basic criteria and strategies for air quality management and assessment for a set of health-relevant pollutants. Four "daughter" Directives establish the EU framework of limit values for air pollutants. Directive 2001/81/EC on National Emission Ceilings for certain pollutants (NECs) sets upper limits for each Member State for the total emissions in 2010 of the four pollutants responsible for acidification, eutrophication and ground-level ozone pollution (sulphur dioxide (SO2), nitrogen oxides (NOx), volatile organic compounds (VOCs) and ammonia (NH3)).

Since 1990, emissions from acidifying pollutants has significantly decreased in the EU-25 by 5.8% on an average annual basis between 1990 and 2000, with a slow-down to an average annual decrease of 2.2% between 2000 and 2002. Emissions come mainly from the energy sector, followed by agriculture and transport[126]. Similarly, total emissions from ozone-forming gases (ground-level ozone precursors) decreased by 3.7% on average annual basis between 1999 and 2000. Between 2000 and 2002 the average annual reduction was 3.3%, mainly as a result of the introduction of catalysts in cars[127].

The graph below specifies that since 1990, the EU-25 has reduced its SO_2 emissions by 66.9%, its NOx emissions by 32.2%, its VOC emissions by 41.5% and NH_3 emissions by 17.4%.

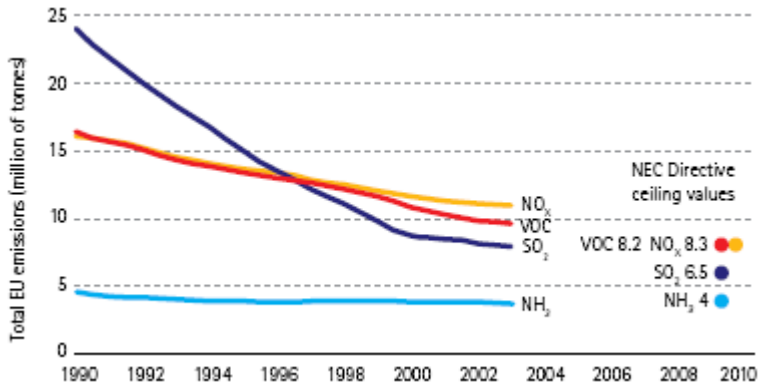


Table: NECs air emissions in million of tonnes in the EU-25. Source: European Commission Environment-related indicators 2006.

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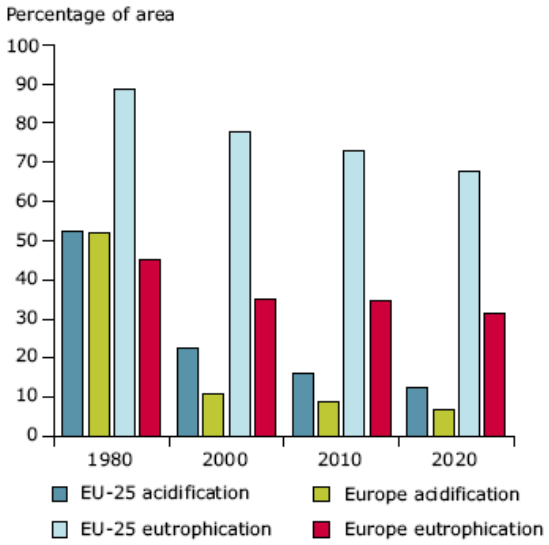
124 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 75

125 See Article 7(1) of the 6th EAP.

126 Eurostat 2005 "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p 110.

127 EEA SOER 2005, p. 206. Copyright EEA Copenhagen (2005).

Despite this progress, further action is needed to ensure that the 2010 targets are achieved. Indeed, on the basis of existing measures in place, further progress in reducing acidification and eutrophication and ozone exposure is expected to be limited. The following graphs show the percentage of the ecosystem or crop areas which are subject to concentrations of air pollutants in excess of the so-called 'critical load', which is level above which exposures to air pollutants is expected to have significant harmful effects.



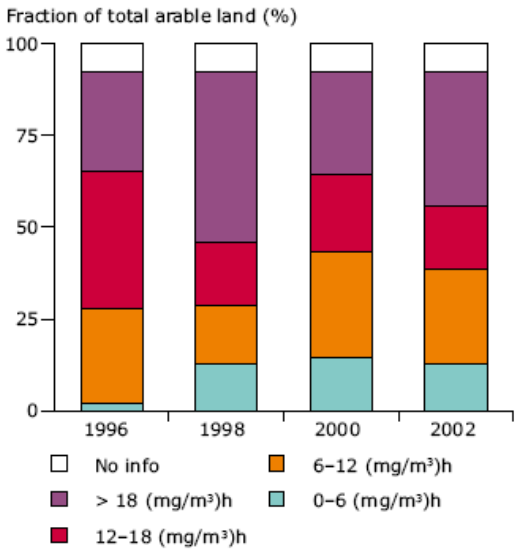
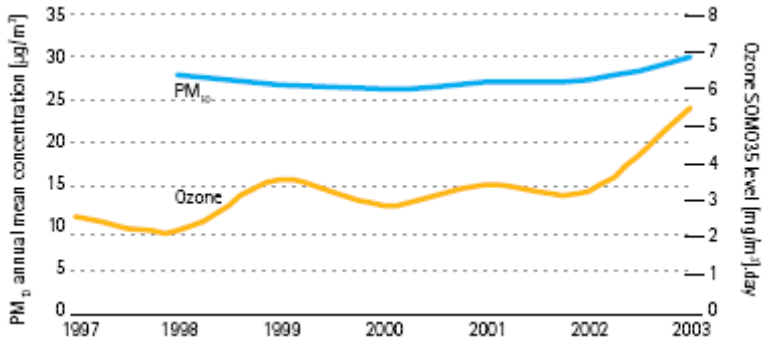


Table: EU-25 and Europe-wide ecosystem damage area (average accumulated exceedance or critical loads, 1980-2020; Exposure of crops to ozone (exposure expressed in mg/m3 in the European Economic Area, 1996-2000. Source: EEA 2005[128].

The 6th EAP calls for improving the quality of life in urban areas through an integrated approach[129]. Air pollution is a particular environmental problem for the urban population as they are exposed to concentration of air pollutants in excess of the health-related limit values set by the EU legislative framework. Only the exposure to SOx shows a downwards trend. The most worrying trend is the exposure to PM_{10}, which is a pan-European air quality issue. In every country, the background concentration levels are exceeded. Ozone is also a widespread problem, even though the health-related values are less frequently exceeded in Southern Europe. NO_2 limit values are most frequently exceeded in densely populated areas in Europe[130].



128 EEA SOER 2005, p. 273. Copyright EEA Copenhagen (2005).
129 See Article 7(1) of the 6th EAP.
130 EEA SOER 2005, p. 268. Copyright EEA Copenhagen (2005).

Table: Annual mean concentration of PM10 and ozone level (mg/m3) day, 1997-2003. Source: European Commission Environment-related indicators 2006.

4.2. Illustrative examples of actions taken so far

EU Environment and Health Strategy

In June 2003 the Commission adopted the European Environment and Health Strategy[131] to announce a new vision to environmental policy making by improving the risk assessment and health impact rather than looking merely at sources of environmental pollution.

A year later, the Commission adopted the European Environment and Health Action Plan 2004-2010[132] identifying thirteen actions with a focus on:

- improving the information chain by developing integrated environment and health information;
- filling the knowledge gap by strengthening research on environment and health and identifying emerging issues;
- reviewing and adjusting risk reduction policy and improving communication.

A number of actions are being implemented these actions have been summarized in the mid-term review of the Action Plan on Environment and Health 2004 - 2010, currently under preparation. This document will also indicate possible follow-up for the period 2007-2010.

6th EAP's priority actions:

- Reinforcement of the Community research programmes and scientific expertise and encouragement to the international coordination of national research programmes;
- Actions on chemicals and pesticides, including on assessing the risks of the use of chemicals and the (imminent) adoption of the Thematic Strategy on pesticides.
- Actions on the sustainable use and high quality of water, including ensuring full implementation of the Water Framework Directive;
- Actions on air quality, including the adoption of the Thematic Strategy on Air Quality;
- Actions on noise, including developing and implementing instruments to mitigate traffic noise;
- Action on urban environment, including the adoption and implementation of the Thematic Strategy on the urban environment.

Reinforcement of Community research programmes

In the Fifth Framework Programme for RTD (FP5 - 1998-2002), a dedicated EU-funded Key-action called Environment and Health provided funding for 183 projects with an annual

[131] Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee on the European Environment and Health Strategy - COM(2003) 338, 11.6.2003.

[132] Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee on the European Environment and Health Action Plan 2004-2010 - COM(2004) 416, 9.6.2004.

budget of around €40M. In addition, the programme Energy, Environment and Sustainable Development funded a project on the impact of global change on human and wild-life health. The project results are now becoming available. The main funding was allocated to projects dealing with the impact of chemicals, air pollution and electromagnetic fields on health, respectively. A particular issue that received sizable funding was the mechanisms and health issues related to endocrine disruption. Results of these projects have been published in a catalogue[133] and on a dedicated research website[134]. Information related to projects focused on health impacts of exposure to electromagnetic fields[135] has been published. The final reports or summaries of all other FP5 environment and health projects have been posted on the Environment and Health key action website[136] and a website is to go on-line in the beginning of 2007. During the first months of 2007, a publication called 'Community research in action: results from environment and health projects funded by the Fifth Framework Programme for RTD' will be produced, highlighting the main outcome of FP5 environment and health projects. In addition, a comprehensive DG Research E&H research portal, through which all E&H-related projects funded in the past and currently can be accessed, will become available. Project results, where appropriate, have been disseminated directly to policy makers, e.g., through a number of dedicated workshops. For example, the results of projects dealing with endocrine disrupting chemicals have contributed to the goals of the Community Strategy for Endocrine Disrupters and those on ambient air pollution to the CAFÉ process, whilst the projects on noise will contribute to the updating of EU noise directives, and the results of projects on electromagnetic fields have been taken into account when the Scientific Committee on Emerging Health Risks of Health and Consumer Protection DG (SCENHIR) redrafted the opinion on Possible effects of Electromagnetic Fields (EMF) on Human Health in 2006/2007.

Four projects deserve particular mention: PINCHE, AIR-NET, NANODERM and NANOPATHOLOGY. The PINCHE Thematic Network[137] analysed studies related to children's health and environment in FP4 and FP5 projects as well as nationally funded studies and made policy-relevant recommendations. The project also identified research gaps. The focus of the project was on air pollution, cancer, neuro-toxicity, and noise. The AIRNET project (http://airnet.iras.uu.nl) had similar objectives, but focused solely on air quality issues. NANODERM[138] and NANOPATHOLOGY[139] were the first projects funded by the EU on health impacts of nanoparticles.

Research efforts are also covered in line with priorities identified in the Environment and Health Action Plan for 2004-2010, trough the Programme of Community Action in the field of Public Health (2002-2008) and the Community Research framework Programmes.

The Fifth Framework Programme of Research of the EU a dedicated Key-action called Environment and Health provided funding for 183 projects with an annual budget of around €40M.

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133 *Commission research in action: tackling the hormone disrupting chemicals issue - http://ec.europa.eu/research/environment/pdf/hormone_disrupting_chemicals_issue.pdf*

134 *http://ec.europa.eu/research/endocrine/index_en.html*

135 *ftp://ftp.cordis.europa.eu/pub/life/docs/emf_brochure_sheets.pdf*

136 *http://ec.europa.eu/research/quality-of-life/ka4/index_en.html. Summaries of allergy/asthma related projects are also available at ftp://ftp.cordis.europa.eu/pub/life/docs/allergy_asthma_catalogue.pdf*

137 *www.pinche.hydgm.nl*

138 *http://www.uni-leipzig.de/~nanoderm/*

139 *http://ec.europa.eu/research/quality-of-life/ka4/pdf/report_nanopathology_en.pdf*

Sixth Framework Programme of Research of the EU the Scientific Support to Policies programme (so-called 'Priority 8') in particular has funded projects, the aim of which is to carry out a detailed analysis of research activities undertaken in the past, including those funded by FP5 and national programmes. Four domains have been covered: indoor air pollution (EnVIE) ambient air pollution (CAIR4HEALTH), electromagnetic fields (EMF-NET and COST281) and the four priority diseases/disorders identified in Action 6 of EHAP (HENVINET). Overall the implementation of the research actions 5 to 8 of the Action Plan on Environment and Health 2004-2010 has resulted in the funding of 38 large scale EU-wide projects with a cumulative budget of over €200M, funded by FP6.

In the 7th Framework programme of Research (2007-2013), a dedicated Environment and Health activity within the Environment theme will continue funding of research related to health impacts of environmental stressors such as industrial chemicals, noise, electromagnetic fields or air pollutants.

Other topics which may require further research are

- **Cocktail effect of chemicals**, i.e. the interactions between and the total effect of the multitude of chemicals that humans and the environment are exposed to. An accent on research into the various effects and toxicity of cocktails of substances in humans should deliver a scientific basis from which to evaluate the need for future legislative or other measures.

- **Endocrine disrupters**, substances which affect the hormonal system in the body and may cause infertility and other problems in the reproductive system. The Commission will continue the work to identify them, assess their risks and ensure that where their use is essential it is carried out in a way which minimises risk for human health and the environment.

- **Manufactured nanomaterials**. Through the development of nanotechnology it is possible to produce and use particles in the size to billionths of a meter. In this size range materials behave in new ways compared to the bulk chemicals, and may have different, not yet known effects on human health and the environment. Nanotechnology will have extensive applications in many fields in a few years time. Policy to protect the environment and human health will need to be in line with the Commission's Nanotechnology Action Plan 2005 – 2009[140], so that the EU can benefit from the positive side of nanotechnology, while the environment and human health are safeguarded from any negative effects. Research is needed to develop test methods, risk assessment and risk management tools, as well as work to assess the applicability of existing legislative frameworks to identify any need for further regulatory action (e.g. development of implementing guidelines, amendments to legislation etc.).

- The consequences of climate change and environmental integrity on human health and well-being.

[140] COM(2005) 243, 7.6.2005.

The **EU Environment and Health Strategy** was launched in 2003 and concrete actions were defined in the Environment and Health Action Plan for 2004-2010. One of the main themes of the Action Plan is the environment and health information including Human Biomonitoring, and how best to improve its relevance for policy development and evaluation. *The* implementation of the research actions 5 to 8 of the Action Plan has resulted in the funding of 38 large scale EU-wide projects with a cumulative budget of over €200M, funded by FP6. The projects deal with numerous topics including networking in the allergy and asthma field[141] or looking at risk of cancer in children due to exposure to environmental toxicants[142], a dedicated Environment and Health activity within the Environment theme will continue funding of research related to health impacts of environmental stressors such as industrial chemicals, noise, electromagnetic fields or air pollutants."

Chemicals and pesticides

Building on experience with existing Community legislation on chemicals[143] the main policy driver on chemicals will be the **REACH Regulation**[144]. The aims of the Regulations are to ensure a high level of protection of human health and the environment, including the promotion of alternative methods for assessment of hazards of substances, as well as the free circulation of substances on the internal market while enhancing competitiveness and innovation. It will improve the protection of human health and the environment through better and earlier identification of the properties of chemical substances and the identification and application of appropriate risk management measures. In addition, REACH will allow the further evaluation of such substances where there are grounds of suspicion of risks. The principle of manufacturers' responsibility is a central element in the REACH Regulation. The new European Chemicals Agency will play a major role in the implementation of REACH. Non-confidential data on substances that are registered under REACH will be made publicly accessible via a database managed by the Agency.

On **pesticides**, the Commission will complete a review of all active substances used in plant protection products within the EU by 2008. The main policy driver in this area is the Thematic Strategy on sustainable use of pesticides. The **Thematic Strategy on pesticides**[145] aims to reducing risks to human health and the environment while at the same time allowing necessary crop protection. The Strategy builds on existing Community law, which already covers pre-market authorisation and residue monitoring, to deal with how risks can be reduced in the use phase. Measures will enable pesticides users to use pesticides more efficiently and to avoid over-use and unnecessary pollution of the environment, without reducing their effectiveness. In addition to this Thematic Strategy, Directive91/414/EEC and the pesticides residues Regulation are the main policy drivers in the area of pesticides.

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141 *the Gal2en Network of Excellence - http://www.ga2len.com/*

142 *Newgeneris - http://www.newgeneris.org/). In the 7th Research Framework programme (2007-2013*

143 Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances (OJ 196, 16.8.1967, p. 1).

144 (**R**egistration, **E**valuation and **A**uthorisation of **Ch**emicals) Regulation (EC) No 1907/2006 - COM(2003) 644.

145 Communication on the Thematic Strategy on the sustainable use of pesticides and Draft Directive establishing a framework for Community action to achieve a sustainable use of pesticides - COM(2006) 372 and COM(2006) 373.

At **international level**, the Stockholm Convention on Persistent Organic Pollutants (POPs) and the Rotterdam Convention on Prior Informed Consent (PIC) Procedure – for both of which the EU played a leading role – entered into force in 2004. The EU has proposed inclusion of further substances under both Conventions.

Sustainable use of Water

The **Water Framework Directive**[146] is the key piece of legislation in the field of sustainable EU water policy. During the past four years, good progress has been made with the implementation of this Directive[147], following the Common Implementing Strategy agreed upon in 2001[148]. The Commission has adopted a series of guidance documents to further facilitate the implementation of the Water Framework Directive at national level.

The preparation of the River Basin Management Plans in 2009 will be the key instrument for the sustainable development and protection of EU aquatic resources.

New legislative initiatives, such as the proposed Directive on the assessment and management of floods[149], the proposed Directive to implement the Marine Thematic Strategy and the new Bathing Water Directive, as well as a future Communication on Drought and Water Scarcity, all represent elements implementing the Water Framework Directive.

Actions on Air Quality

On air quality, a number of legislative proposals addressing the ambient air pollution have been adopted over the past four years[150]. The main policy driver in this area is the **Thematic Strategy on air pollution**, which is accompanied by a proposal for a new Framework Directive on Air. The Thematic Strategy on air pollution[151] sets health and environment objectives and emission reduction targets for the main pollutants to be achieved by 2020[152]. The level of ambition chosen was found to be the most cost-effective, and they align with the Community's Lisbon Agenda and the renewed EU Sustainable Development Strategy.

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146 Directive 2000/60/EC (OJ L 327, 22.12.2000, p. 1).

147 For instance, the Article 5 reports, which were required by 2004 have been submitted by almost all Member States in time.

148 On 12 December 2006 a daughter Directive on Groundwater was adopted (2006/118/EC). The Commission has presented a proposal for a daughter Directive on quality standards for priority substances in 2006 - COM(2006) 397 and COM(2006) 398. Furthermore, the Bathing Water Directive has been revised, as requested by the 6EAP (Directive 2006/7/EC).

149 COM(2006) 15.

150 Directive 2004/26/EC on emissions from engines in non-road mobile machinery, Directive 2004/42/EC on limiting emissions of volatile organic compounds from paints and varnishes, Directive 2005/33/EC on the sulphur content of marine fuels and Directive 2004/107/EC, fourth air quality daughter directive.

151 COM(2005) 446, 21.9.2005.

152 The following pollutants are targeted: (1) Particulate Matter (PM), these fine dust particles are either emitted directly, (e.g. by cars, diesel especially) or formed by a chemical reaction of other 'primary' pollutants (SO_2, NOx, NH_3). Particulates with a diameter of less than 2.5 micrometer (PM 2.5) are focussing most of the attention but PM 10 (diameter of less than 10 micrometer) will also be targeted, (2) Ground level ozone, formed by Nitrogen Oxide (NOx) and Volatile Organic Components (VOCs) which can be lethal to human health and cause heavy pollution in forests and agriculture, (3) Ammonia (NH3) emitted mainly from animal wastes and fertilisers, (4) Nitrogen oxides (NOx), which causes acid rains, eutrophication (algae excess in lakes and ponds) and ground-level ozone, (5) Sulphur dioxide (SO2), mainly formed by the combustion of coal and oil and creates acid deposits, (6) Volatile Organic Compounds (VOCs), emitted by paints, varnishes, solvents, transport fuels and are a key component in formation of ground-level ozone.

In order to achieve its objectives, the Air Strategy proposes extending existing legislation to other sectors and to take account of new evidence on emerging health threats. It proposes to strengthen implementation, to modernise monitoring and reporting and to do more to integrate environmental concerns into other EU policies and (international) programmes. The Strategy is accompanied by an Ambient Air Quality Directive, merging existing air quality legislation into a single legal instrument.

At **international level**, the Commission initiated the creation of the Task Force on Hemispheric Transport of Air Pollution under the UN Convention on Long-range Transboundary Air Pollution.

In the related area of **indoor air**, Action 12 of the Action Plan on Environment and Health deals with improving indoor air quality, including tackling tobacco smoke. A Green Paper, Towards a Europe free from tobacco smoke: policy options at EU level, has been launched in 2007. The aim of this Green Paper is to launch a broad consultation process and an open public debate, involving the EU institutions, Member States and the civil society, on the best way forward to tackle passive smoking in the EU. The Commission will analyse thoroughly the comments received in response to this Green Paper and on that basis decide on possible further action.

In 2006, the Commission launched a review process of the **IPPC Directive** (Integrated Pollution Prevention and Control) and related legislation on industrial emissions. While not altering its main underlying principles and level of ambition, the review will evaluate the scope to improve the functioning of the Directive its coherence and complementarity with other industrial emissions-related legislation and the effectiveness of market-based-instruments in this context.

Actions on Noise

The implementation of the **Noise Directive** (2002)[153] is the main instrument for reaching the 6EAP noise objectives. In 2004, the Commission published a report assessing the existing Community framework on noise and the need for future actions taking into account recent scientific and technical evidence.

Actions on the Urban Environment

The **Thematic Strategy on the urban environment**[154] aims at contributing to a better implementation of existing EU environment policies and legislation at the local level by supporting and encouraging local authorities to adopt a more integrated approach to urban management and by inviting Member States to support this process and exploit opportunities at EU level. The Urban Strategy underlines the importance of Structural and Cohesion Funds to support investments that improve the quality of the urban environment. The Commission will also support dissemination of best practices and will use EU financial instruments to support capacity building.

Since the objectives related to improving the quality of the urban environment can be best achieved at national or regional level, no mandatory Community measures have been proposed.

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153 Directive 2002/49/EC (OJ L 189, 18.7.2002, p. 12).

154 COM(2005) 718, 11.1.2006.

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5. NATURAL RESOURCES AND WASTES

6th EAP's overall aim:

"..better resource efficiency and resource and waste management to bring about more sustainable production and consumption patterns, thereby decoupling the use of resources and the generation of waste from the rate of economic growth and aiming to ensure that the consumption of renewable and non-renewable resources does not exceed the carrying capacity of the environment.

6th EAP's objectives:

- ..aiming at ensuring 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. In this context the indicative target to achieve a percentage of 22 % of the electricity production from renewable energies by 2010 in the Community is recalled with a view to increasing drastically resource and energy efficiency;
- ..achieving 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;
- ..a significant reduction in the quantity of waste going to disposal and the volumes of hazardous waste produced while avoiding an increase of emissions to air, water and soil;
- ..encouraging 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; the quantity of waste for disposal should be minimised and should be safely disposed of; waste intended for disposal should be treated as closely as possible to the place of its generation, to the extent that this does not lead to a decrease in the efficiency in waste treatment operations.
- To encourage and promote effective and sustainable use and management of land and sea taking account of environmental concerns.

5.1. Illustrative Trends and prospects

The 6th EAP aims at ensuring that the consumption of resources and their associated impacts do not exceed the carrying capacities of the environment[155]. One way of illustrating this is the "ecological footprint", a calculation that estimates the area of Earth's productive land and water required to supply certain resources that an individual or group demands, as well as to absorb certain wastes that the individual or group produces. In 1961, the EU-25's footprint was around 3 hectares/person. By 2001, it had more than doubled (almost exclusively due to increased use of fossil fuels). Assessments show that at present rates of consumption, 1.4 Earths would be needed to ensure that future generations are at least as well off as we are now with regard to the resources considered by the footprint approach[156].

[155] See Article 8(1) of the 6th EAP.

[156] Sustainability Indicator Programme (2005), RProgress, http://www.rprogress.org/newpubs/2006/Footprint%20of%20Nations%202005.pdf

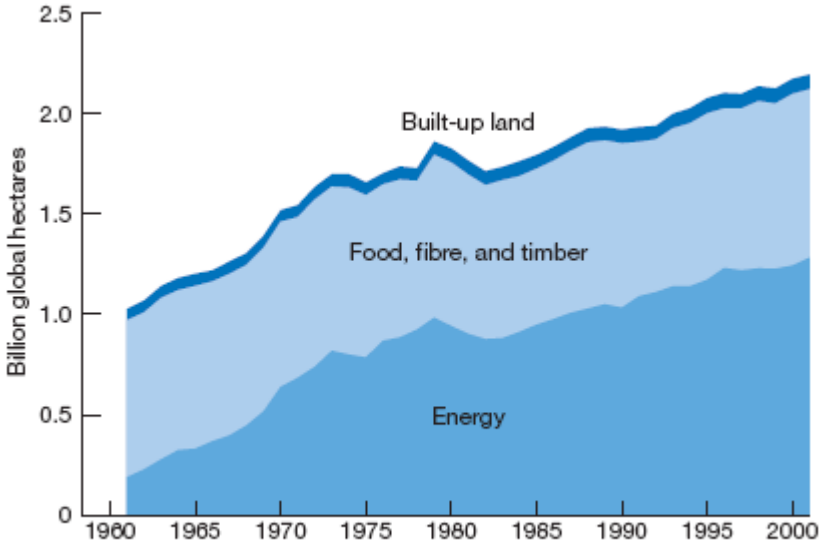


Table: Ecological Footprint of the EU-25. Source: Global Footprint Network (2005)[157].

More specifically, the 6th EAP calls for breaking the linkages between economic growth and resource use ('decoupling')[158]. With regard to material use, 'decoupling' can be measured by comparing GDP with the total weight of materials directly used in the economy ('domestic material consumption')[159]. Between the period 1995 and 2001, the domestic material consumption per capita remained fairly stable whereas GDP grew constantly over time. This indicates a relative decoupling of material use from economic growth. However, this indicator does not reveal whether the environmental impact of resource use is 'decoupled' as well.

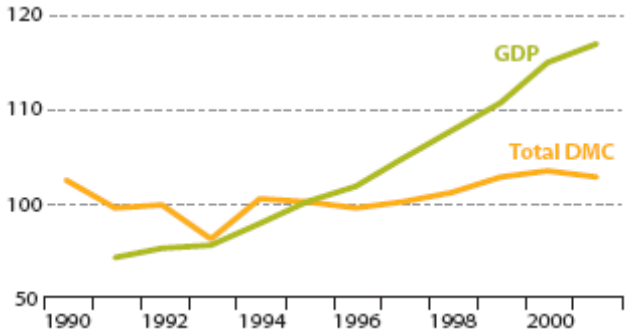


Table: EU-15 domestic material consumption (DMC) vs GDP at constant prices (index: 1995=100). Source: Eurostat 2005[160].

At EU level, the Thematic Strategy on the sustainable use of natural resources paves the way towards decoupling economic growth and the environmental impacts of resource use in terms

157 http://www.footprintnetwork.org/gfn_sub.php?content=books

158 See Article 8(1) of the 6th EAP.

159 Domestic material consumption (DMC) covers domestic material extraction plus imports minus exports.

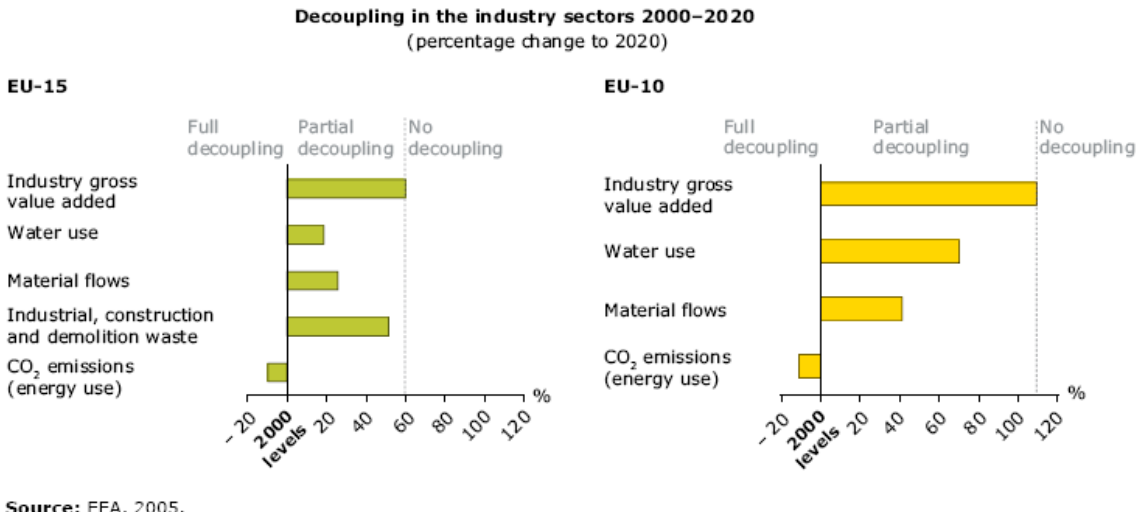
160 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 106.

of supply and impact on eco-systems. At Member State level, several countries have set specific 'decoupling' targets, as illustrated by the following table:

Country	Target	Document	Date
Austria	Increasing resource productivity by Factor 4	Austrian strategy for sustainable development	Endorsed by Austrian Council of Ministers on 30 April 2002
Belgium	Decoupling natural resource use from economic growth	Federal plan for sustainable development 2004–2008	September 2004
Denmark	Limit resource consumption to 25 % of current consumption	Denmark's national strategy for sustainable development: A shared future — balanced development, the Danish government	August 2002
Germany	Double energy and raw material productivity by 2020. In the long term, achieve Factor 4 improvement	German strategy for sustainable development	Passed by the Federal cabinet on 17 April 2002
Ireland	Progressive decoupling of economic activity from environmental degradation	Ireland's strategy for sustainable development: Department of the environment and local government	2002
Italy	Reduce TMR by 25 % by 2010, 75 % by 2030, and 90 % by 2050	Environmental strategy action plan for sustainable development, Ministry of the environment and land protection	Approved by the Inter-ministerial Committee for Economic Planning on 2 August 2002
Netherlands	Dematerialisation by a factor 2 to 4 in year 2030	Fourth national environmental policy plan	October 2001
Poland	Reduce material intensity by 40 % between 1990 and 2010	National environmental policy for 2003–2006	December 2002
Portugal	Reduce resource consumption by a factor of 1.5 in industrial companies	National strategy for sustainable development 2005–2015	July 2004

Source: EEA Report 9/2005[161].

Outlooks to 2020 on decoupling show a partial decoupling of water use, material flows and waste from economic growth in the industry sector. This is expected to be achieved in part by structural changes in the EU economy away from resource intensive industries towards the service sector[162].



[161] EEA Report 9/2005 "Sustainable use and management of natural resources", http://reports.eea.europa.eu/eea_report_2005_9/en/EEA_report_9_2005.pdf, Copyright EEA (Copenhagen) 2005.

[162] EEA SOER 2005, p. 242. Copyright EEA Copenhagen (2005).

Outlooks on decoupling between energy use and economic growth show that substantial improvements in industrial energy intensity could lead to a situation that the energy needed to produce one unit of economic added value in 2030 would be almost 50% less than 1990 levels[163]. Decoupling in the field of water and waste is projected to be only partial.

In the field of waste, the 6th EAP call for a significant overall reduction in the volumes of waste generated as well as a reduction of the amounts of waste going to landfills, encouraging reuse, recycling and recovery of wastes. Landfill is seen as the least environmentally friendly treatment method with potentially harmful effects for air, soil, water, ecosystems and human health as badly managed landfills can lead to leaching of nutrients, heavy metals and other toxic compounds, greenhouse gas emissions, loss of valuable landscape and increased heavy transport.

Trends between 1994 and 2004 show that generation of municipal waste increased by 19.4%. Since nearly all waste is collected, this is an indication of the amount of waste generated.

Waste generation grows more or less in line with GDP growth. Since nearly all waste is collected, this is an indication of the amount of waste generated.

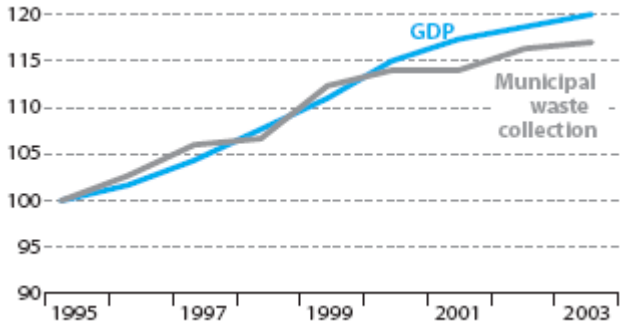


Table: EU-25 municipal waste collection compared to GDP growth (index 1995=100). Source: Eurostat 2005[164].

Since 1995, out of the amounts of waste generated, slightly fewer amounts have been sent to landfills, with an average annual decrease of 0.55% in the EU-25. From 2000 to 2003 the decline has been sharper with an annual decrease of 3% in the EU-25[165]. This decline can be attributed to factors such as the implementation of national landfill taxes and the ban to landfill certain types of wastes. The amount of recycling of municipal wastes has doubled between 1995 and 2004. Between 2000 and 2003, the amount of municipal waste incinerated in the EU-25 increased by 3.1% per year on average[166]. Incineration requires energy but also

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163 EEA SOER 2005, p. 242. Copyright EEA Copenhagen (2005).

164 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 111.

165 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 113.

166 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 114.

offers a source of energy recovery. In 2003, it generated about 8.8 million tonnes oil equivalent of energy.

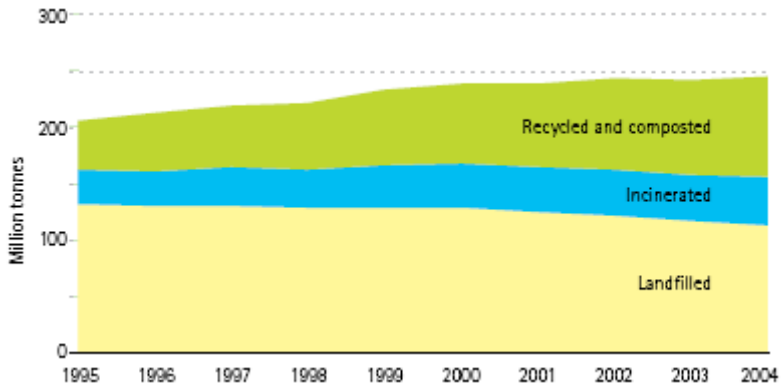

Table: Treatment of collected municipal waste in million of tonnes 1995-2004. Source: European Commission Environment-related indicators 2006.

6th EAP's priority actions:

- Developing a Thematic Strategy on the sustainable use and management of natural resources;
- Developing and implementing measures on waste prevention and management, including developing a set of quantitative and qualitative reduction targets to be achieved at Community level by 2010;
- Developing a Thematic Strategy on waste recycling.
- Developing / revising the legislation on wastes.

6. ILLUSTRATIVE EXAMPLES OF ACTIONS TAKEN SO FAR

Thematic Strategy on Natural resources

Building on the notion of impact during the entire life-cycle of a material, the **Thematic Strategy on the sustainable use of natural resources** contains a long-term objective to achieve a decoupling between economic growth and pressures on the environment and to improve resource efficiency. It proposes: (i) to improve the knowledge about resource use and its negative environmental impacts; (ii) to monitor and report progress; and (iii) to establish several mechanisms, such as a European Data Centre on natural resources, a High Level Forum with Member States and an International Panel in co-operation with the UN Environment Programme.

The Strategy has laid the foundation for setting detailed targets for specific resources in terms of efficiency or diminishing their use, as called for by the 6EAP, enabling the further assessment resource flows for proposing evidence-based and useful targets where appropriate. Clearly, the results will give valuable guidance to future initiatives in the wider production and consumption area, notably actions to be proposed under the forthcoming Sustainable Production and Consumption Action Plan (2007).

Waste prevention and management

During the past four years, several pieces of **product-specific waste legislation** have been revised or will be revised shortly. Landfill acceptance criteria were adopted in December 2002. The Packaging and Packaging Waste Directive was revised in 2004, strengthening the recycling and recovery targets. The Waste Shipment Regulation was revised in 2006, to include more stringent controls and enhanced cooperation between Member States to ensure a safer transfer of wastes in the EU. A new Batteries Directive was adopted in 2006, extending the scope to all batteries and accumulators placed on the Community market and enhancing the collection and recycling rates at national level. A Directive on mining waste was adopted in 2006, aiming for a more sustainable management of waste from the extractive industry. More recently, the EU has been considering further action on ship dismantling, in the light of current unsatisfactory practices, and particularly relating to ships containing hazardous materials.

Thematic Strategy on Waste Prevention and Recycling

The **Thematic Strategy on waste prevention and recycling**[167] sets a long-term goal for the EU to increase recycling efficiency, seeking to avoid waste and promoting waste as a resource. To achieve these objectives, the strategy proposes to modernise the existing legal framework, to promote 'life-cycle thinking', to establish the framework for national prevention programmes, to contribute to setting-up common standards for recycled materials, and to promote the market for recycled and re-usable waste products.

The Waste Strategy is accompanied by a Proposal for a revised EU Waste Framework Directive which merges with the existing Directives on hazardous waste. It also repeals the obsolete Waste Oils Directive.

The Strategy proposes not to set quantitative waste prevention targets at Community level, since such targets can more effectively be fixed at national level, taking into account local circumstances (such as industrial structure, consumption patterns, wealth and the rate of economic development). The related proposal for a revised Waste Framework Directive contains obligations for Member States to draw up waste prevention plans.

Sustainable use and management of land and sea

The most recent reforms of the Common Agricultural Policy have helped integrate environmental considerations better into the agricultural sector and therefore make it more sustainable. The most prominent measures introduced or improved include, inter alia, the decoupling of direct payments from production, cross-compliance, agri-environmental measures, payments for Natura 2000, support for setting up and using farm advisory services.

The Soil Thematic Strategy will take actions on **landscape preservation**. Landscape initiatives will be coordinated under the financial instrument LIFE+. Information gathering on environmental impacts of land use will be strengthened through the International Panel on the Sustainable Use of Resources, established by the Thematic Strategy on the Sustainable Use of Natural Resources. At international level, the Council of Europe's European Landscape Convention came into force in March 2004 and has been ratified by most Member States.

The **Thematic Strategy on the marine environment**[168] aims to achieve "good environmental status" for Europe's seas and oceans by 2021 at the latest. It is linked to the review of the "river basin management plans" under the Water Framework Directive and thus bridges the gap between environmental protection of inland waters and the open seas. The strategy delivers the environmental pillar of the future EU Maritime Strategy, a priority of the Commission, scheduled to be adopted in 2006.

The **integrated coastal zone management** (ICZM) Recommendation was adopted in 2002 and describes how Member States should prepare national strategies. The Commission has also coordinated an expert group to support the Recommendation, as well as initiating a project to examine coastal erosion. As a result, for the first time, a holistic approach is now being taken in Europe’s coastal areas. A survey in 2005 showed that 17 out of 20 coastal Member States are implementing the ICZM Recommendation, although significant variations in the scope of Member State actions are observed.

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167 COM(2005) 670, 21.12.2005.

168 COM(2005) 504, 24.10.2005.

Also for the first time, policy is in place to tackle emissions from ships (which in 2000 totalled more than those from aviation). The extensive maritime safety packages developed in the few years at EU level will also play an essential role to reduce the environmental impact of shipping – these 6th EAP measures should result in significant improvements by 2010.

7. INTERNATIONAL ISSUES

7.1. Illustrative examples of actions taken so far

6th EAP's priority actions:

- Integrating environment protection requirements into the Community's external policies;
- Establishing a coherent set of environment and development targets to be promoted for adoption as part of "a new global deal or pact" at the World Summit on Sustainable Development in 2002
- Work towards strengthening international environmental governance
- Aiming for swift ratification, effective compliance and enforcement of international conventions and agreements relating to the environment where the Community is a Party
- Intensify efforts at the international level to arrive at consensus on methods for the evaluation of risks to health and the environment
- Promoting sustainable environmental practices in foreign investment and export credits
- Achieving mutual supportiveness between trade and the needs for environmental protection
- Further promoting a world trade system that fully recognises Multilateral or Regional Environmental Agreements and the precautionary principle, enhancing opportunities for trade in sustainable and environmentally friendly products and services
- Promoting cross-border environmental cooperation with neighbouring countries and regions;
- Promoting a better policy coherence by linking the work done within the framework of the different conventions.

Integration of environmental requirements into the Community's external policies

The Commission promotes, supports and assists in the implementation of some 40 **Multilateral Environmental Agreements (MEAs) and Conventions** to which the Community is party.

With a view to identifying common problems and common solutions, the Commission maintains regular **bilateral relations** on environment policy with key third countries, such as European Neighbourhood Policy partner countries, China, Japan, India, Brazil, USA, and Canada.

In 2003, the **Green Diplomacy Network** was established. In accordance with the objectives laid down in its action plan and work programme, the informal network of environment and sustainable development experts within foreign affairs ministries of EU Member States works towards the promotion of the integration of environment into external relations both at the EU and national levels.

In January 2006 the Commission produced a Communication[169] on a new **Thematic Programme for Environment and the Sustainable Management of Natural Resources, including Energy** (ENRTP) suggesting how external environmental spending could be brought together to tackle key priorities including mainstreaming environment in policy-making in developing countries, supporting the EU's leading role in international negotiations and funding projects on issues that are crucial to long-term sustainability but are not usually priorities in bilateral aid. The basic act for the ENRTP is the Development Cooperation Instrument (DCI), which was adopted by common position on 12 December 2006. It sets aside an indicative amount of €804 million for the ENRTP for the period 2007-2013.

Mutual supportiveness between trade and the environment

The Commission has enhanced the mutual supportiveness between trade and the environment in a **multilateral context**, for instance in the World Trade Organisation (Doha Development Agenda), Convention on International Trade in Endangered Species (CITES) and as part of **regional/bilateral relations**, for example Regional Free Trade Agreements.

Promoting environment cooperation with acceding, candidate and pre-candidate countries and regions

Over recent years the EU has enhanced its role in pursuit of higher environmental requirements across the wider European region, and globally. The Commission completed its negotiations on the environmental *acquis* with Bulgaria and Romania in 2005, and is currently undertaking the same exercise, albeit over a longer time-scale, with Croatia and Turkey.

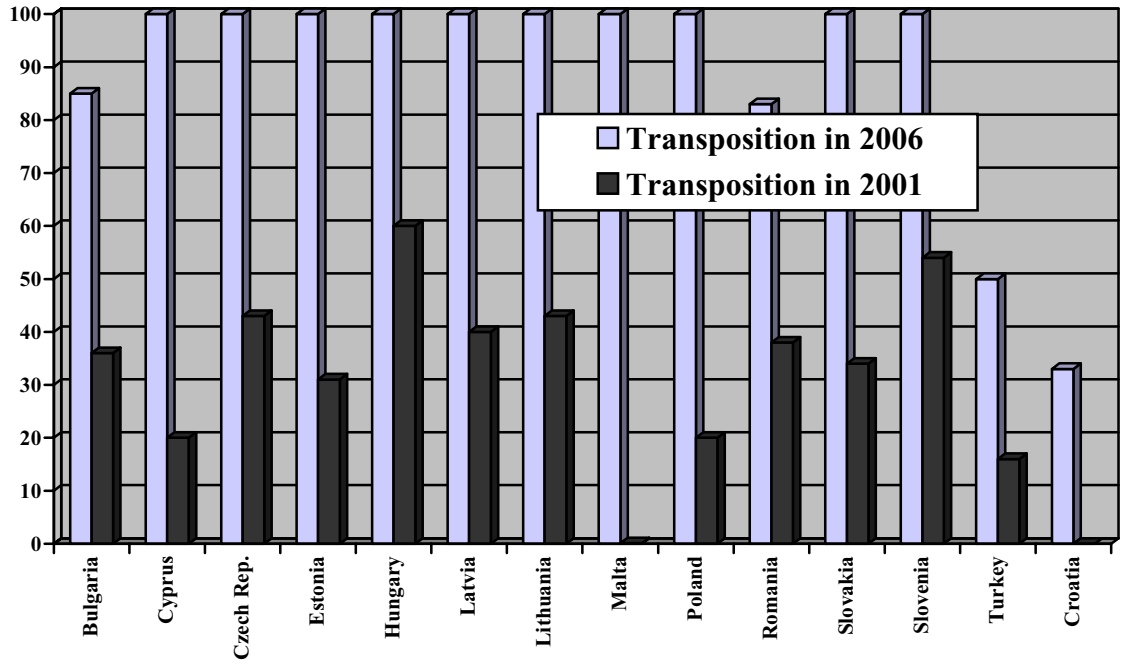

Table: Status of Transposition in 2001 and 2006. Source: DG ENV

[169] COM(2006) 20.

As shown by the graph above, Candidate Countries have made substantial advances in the transposition of the *'acquis communautaire'* between 2001 and 2006[170].

The remaining Candidate Countries are working to align with the environmental norms and standards of the EU, in preparation for membership. In the Balkans the perspective of eventual membership of the Union gives additional momentum and focus and EU environmental legislation provides concrete targets to be achieved.

Promoting environment cooperation with partner countries of the European Neighbourhood Policy

In 2004, the EU developed the **European Neighbourhood Policy** with the aim to strengthen relations between the enlarged Union and its 16 neighbours. ENP Action Plans have so far been agreed with 12 partner countries, all containing specific actions to promote good environmental governance, convergence with EU approaches on environment, mainstreaming of environment into sector policies, as well as enhancing international and regional environment co-operation. A number of environment issues are benefiting from funding under the European Neighbourhood and Partnership Instrument (ENPI) from 2007 onwards.

As regards the Mediterranean region, ENP reinforces the Euro-Mediterranean Partnership[171] reflecting the recent commitment to join in the process of Depolluting the Mediterranean by 2020 (**Horizon 2020**).

The Commission has recently adopted a Communication to strengthen the ENP[172].

Relevant initiatives in the region include the **DABLAS** (Danube and Black Sea) task force and regional conventions such as the **Barcelona Convention** and the **Black Sea Convention**.

Promoting better policy coherence

DG Environment undertakes a number of multilateral activities on environment and sustainable development and **co-operation with international organisations**[173]. These aim to promote co-operation to address global environmental problems; to enhance co-operation in pursuit of agreed international objectives; and to encourage mutual supportiveness between different policy areas, e.g. trade and environment, in particular in the framework of the international trade negotiations within the WTO (World Trade Organisation).

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170 This data do not provide information on the actual degree of conformity or enforcement of the EU legislation.

171 The Euro-Mediterranean Partnership thus now includes 35 members - 25 EU Member States and 10 Mediterranean Partners (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria, Tunisia and Turkey). Libya has observer status since 1999.

172 Strengthening the European Neighbourhood Policy, 4.12.2006 - COM(2006) 726.

173 notably UNEP (United Nations Environment Programme), UN/CSD (United Nations' Commission on Sustainable Development) and OECD (Organisation for Economic Co-operation and Development).

8. STRATEGIC-APPROACHES TO ENVIRONMENTAL POLICY-MAKING

6th EAP's priority actions:

- Development of new Community legislation and amendment of existing legislation, where appropriate;
- Encouraging more effective implementation and enforcement of Community legislation on the environment and without prejudice to the Commission's right to initiate infringement proceedings;
- 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 (..), to internalise the negative as well as the positive impacts on the environment through the use of a blend of instruments, including market based and economic instruments;
- Improving collaboration and partnership with enterprises and their representative bodies and involving the social partners, consumers and their organisations, as appropriate, with a view to improving the environmental performance of enterprises 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 processes and products in terms of their environmental impact with a view to achieving sustainable consumption patterns;
- To support environmental integration in the financial sector;
- To create a Community liability regime;
- To improve collaboration and partnership with consumer groups and NGOs and promote better understanding of and participation in environmental issues amongst European citizens;

8.1. Illustrative examples of actions taken so far

The 6th EAP identifies a number of instruments, or strategic approaches, to meet the environmental aims and objectives set out in the Programme. This includes, among others, the development and revision of Community legislation, the encouragement of more effective and efficient implementation, the promotion of sustainable production and consumption patterns by using market-based and economic instruments, better information to consumers and purchasers – both public and private. The following sub-sections provide data on the development of the use of some of these strategic approaches to the EU environment policy-making.

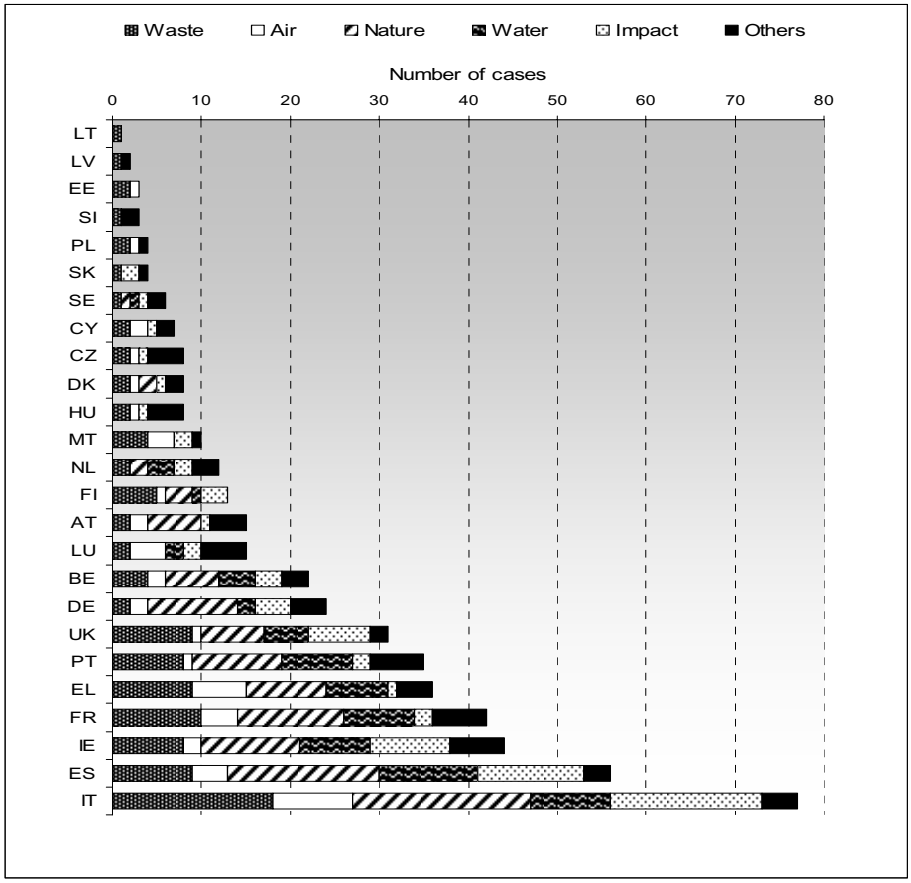
Implementation

Implementation is a challenge that falls primarily to Member States to address. It is multifaceted challenge, with a range of activities required for proper implementation, from the timely adoption of appropriate national legislation, to making sure that the necessary infrastructure (e.g. for waste water treatment) is in place, that regulated activities are properly inspected and action taken against those acting illegally. Despite improvements in

implementation, environment cases continue to account for a third of all Commission's open cases for non-compliance of EU Law.

In 2002, the Commission opened 750 new cases[174]. In 2005 this decreased to 457 new cases. The number of open cases also decreased from 1302 in 2002 to 798 in 2006.

As illustrated by the table below, the main problem areas in terms of infringement cases are nature, water, waste, air (climate change related legislation in particular) and Environmental Impact Assessment.



Open infringement cases in Member States as of 31 December 2005

Source: European Commission[175].

Additional measures are needed to improve observance of Community legislation on the environment and to address infringements of environmental legislation.

During the past four years, implementation of the environmental *acquis* in the new Member States and Candidate Countries has received special attention. The Commission has provided practical assistance and financial support[176].

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174 "New cases" cover new complaints, new own initiative cases and new non-communication cases.

175 Annex to the Environmental Policy Review 2005 - SEC(2006) 218.

176 For environmental investments, EU assistance was available through the Pre-Accession instruments for Bulgaria and Romania. ISPA, the Instrument for Structural Policies for Pre-Accession, together with the 'Phare' and 'Sapard' programmes finance measures supporting investments in environmental and

In 2004, DG Environment introduced a more **strategic review** of the application of environmental legislation across all Member States. In order to address the disproportionate number of issues arising in key policy areas, specific task-forces were created, combining legal and technical knowledge. The result has been a series of actions to deal with complaints and the infringement cases in a way which aims also to address the underlying fundamentals. Where complaints relate to similar cases, and where this represents an efficient and acceptable approach, cases have been regrouped for action and collaboration with Member States has been intensified[177].

During recent years, the **IMPEL**[178] network – an *ad hoc* group of officials from various Member States with experience in policy implementation and enforcement – has focused on information exchange and the development of standards of permitting, inspection, monitoring and enforcement[179].

Early **action to prevent implementation problems** is a key vector for improving the impact of policy on the environment and on human health. Through early action, implementation performance by Member States can be improved. To this end, the Commission has developed Guidance Documents on various topics, which involve Member States and other stakeholders throughout the policy cycle, and particularly in the early phase of the preparation of new legislation.

Effective implementation is also linked to the provision of information. The EU became party to the **Aårhus Convention** in May 2005. This Convention provides for access to environmental information, public participation in environmental decision-making and access to environmental justice. In 2003, the Commission adopted two pieces of legislation concerning the first and second "pillars" of the Aårhus Convention.. On 24 October 2003 the Commission adopted further legislative proposals to align Community legislation with the requirements of the Aårhus Convention, notably with regard to access to justice[180]. Regulation 1367/2006 of 6 September 2006 addresses the “three pillars” of the Aårhus Convention where those are of relevance to Community institutions and bodies and lays down related requirements.

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transport infrastructure, capacity building and in regional and rural development. Separate arrangements exist for Turkey while the so-called Pre-candidate countries, i.e., the Western Balkans are covered by the CARDS Regulation. Already before joining the EU, the candidate countries have to identify and prepare a sufficient number of environment projects to be able to absorb post-accession assistance from EU's Cohesion and Structural Funds. Meanwhile support mechanisms like TACIS and MEDA also offer beneficiary countries the chance to participate in various EU activities and provide a mean to reinforce relations between the EU and these neighbouring partner countries. Recently, the Commission has proposed six new instruments for external assistance in the next Financial Perspective to replace the existing range and to run from 2007 until 2013.

177 Since 2002, ad-hoc meetings on specific issues, "name and shame" events and package meetings regrouping several problematic areas were organised. Furthermore, in many comitology committees implementation issues, as well as an exchange of best practices are a standard agenda point.

178 IMPEL: IMPlementation of Environment Legislation.

179 For example, IMPEL has developed a Guidance Document to support the provision of information from regional and local inspection authorities and to assist Member States in responding to such requests for information in a consistent manner.

180 COM(2003) 624.

The financial burden of implementation is not negligible and Member States need to devote the necessary resources to it. The Community funds needs to be mobilised to ease the burden on the new Member States as part of measures to promote convergence. The proposed package of regulations for **cohesion policy** for the period 2007-2013 includes amongst its suggested priorities environmental investments required under the *acquis*, in particular for urban wastewater treatment, water supply, waste management and Integrated Pollution Prevention and Control, especially in the new Member States.

The Commission efforts on implementation, besides an improved legislative technique, range from an increased use of **pro-active measures** (formal and informal contacts with the authorities of the Member States and NGOs, participation in Seminars on EC Law, etc) and the use, when needed, of **infringement procedures** pursuant to Articles 226 and 228 of the Treaty

In 2006 Council and Parliament reached agreement on the directive creating **INSPIRE** - Infrastructure for spatial information in Europe. INSPIRE will strengthen the knowledge base for environmental policy and make relevant data more accessible to citizens, stakeholders and decision-makers. The directive will cover a very wide range of spatial data ranging from basic mapping information, such as geographical names and administrative units, to key environmental information such as emissions, environmental quality and location of protected sites. At present, this type of data is not always available, nor is it always consistent enough for designing and implementing environmental policy. The new directive sets obligations on what the public authorities of the Member States do with the data they collect.

In 2007, the Commission will develop a **Shared Environment Information System (SEIS),** which will aim to ensure wide availability of the information needed to develop and implement environment policy, while cutting unnecessary administrative burdens on Member State authorities, notably with regard to monitoring and reporting obligations.

Integration

In 2004, the Commission presented a working document taking stock of the **Cardiff process**, which was initiated in 1998 to stimulate sectoral integration at EU level. It assesses how far policy-makers in other areas have taken environmental considerations on board[181]. It highlights that the reform of the Common Agricultural and Fisheries Policy are good examples of environmental integration, but concluded that overall, the integration process has failed in terms of concrete improvements in the environment.

The Commission's **Impact Assessments**, which started in 2002, are part of the 'Better Regulation' approach, can be seen as a concrete measure to formalise the environmental integration requirement within the Commission's policy-making process. In 2003, the Commission presented 21 impact assessments, 33 in 2004 and 41 in 2005. The Commission's nascent Impact Assessment Board will be an important tool for building further improvement in assessing the impact of proposals – including environmental impacts – before they are adopted. The 6th EAP mid-term review revealed repeatedly that environment policies alone would not be enough to reach the level of environmental protection necessary for a

[181] At EU level, environmental integration is enshrined in Article 6 of the EC Treaty and received an institutional impetus in 1998, when the European Council launched the so-called Cardiff process, requiring all other Council formations to set up strategies to ensure environmental integration in different sectors.

sustainable future. Impact assessment offers an essential opportunity to ensure that other policy areas do indeed factor environment into policy-making. It also offers environment policy-makers the chance to offer input that will assist in the achievements of economic and employment goals, where there are direct or indirect links with environment policies.

At national level, the **Environmental Impact Assessment Directive**[182] and **Strategic Environmental Assessment Directive**[183] are key to advancing environmental integration through projects, plans and programmes at national level. The Environmental Impact Assessment Directive was amended in 2003, following the signature of the Aarhus Convention by the Community to align the provisions on public participation in accordance with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters[184]. The Commission presented a third implementation report on the Environmental Impact Assessment Directive in 2003. The Strategic Environmental Assessment Directive entered into force in 2004. In 2006, the Commission published a guidance document clarifying Article 2(3) of the Environmental Impact Assessment Directive in order to facilitate its application at national level.

Integration in the financial sector

Integration requirements are also linked to **financial instruments**. Structural Funds, Cohesion Funds and Common Agricultural Policy are subject to the rule that plans and projects financed by the EU must respect compliance with EU law, including environmental law (conditionality principle). It has been estimated that €43 billion has been made available for direct environmental expenditure through Structural Funds and Cohesion Funds in the period 2000-2006, a 75% increase in environmental expenditure compared to the previous period.

The Commission has provided extensive financial assistance to the EU-10, the current candidate countries and other countries of South-East Europe to assist them in implementing EU environmental legislation. The Commission is also working with the European Investment Bank and the European Bank for Reconstruction and Development to upgrade environmental principles to guide financing activities.

Market-based instruments

The 6th EAP calls for the promotion of more sustainable production and consumption patterns through the internalisation of the negative as well as the positive impacts on the environment using a blend of instruments, including market-based and economic instruments[185]. This requires amongst others promoting and encouraging the use of fiscal measures such as environmental taxes at appropriate national and Community level.

The **EU emission trading system** is the most significant development in terms of market based instruments. It started in 2005 and covers CO_2 emissions of most large point sources within the EU, as such regulating more than 40 % of EU CO_2 emissions. Emission trading is a policy instruments that lets market forces guide where the most cost effective reductions can be achieved. The EU emission trading system is the first cap and trade system in the EU and is the largest in the world.

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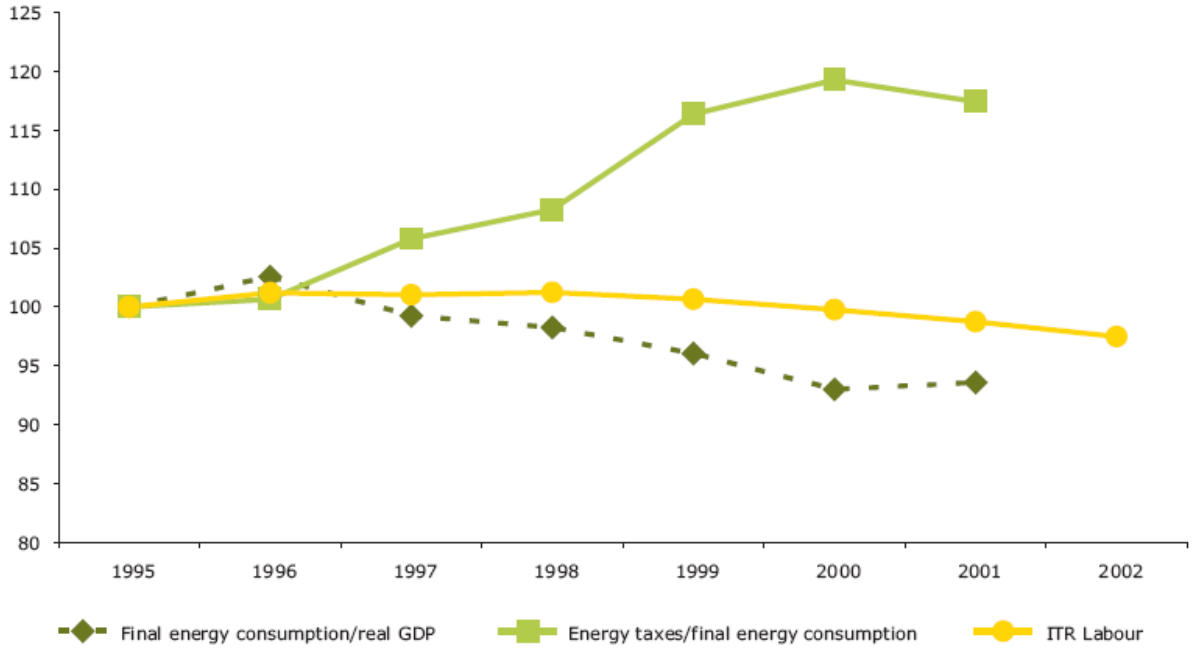
182 Directive 85/337/EEC, as amended.
183 Directive 2001/42/EC.
184 See Directive 2003/35/EC.
185 See Article 3(4) of the 6th EAP.

Another existing market based mechanism is **energy taxation** that can encourage the efficient use of our energy sources. The following table gives an overview of the development of energy tax indices and labour tax indices over the years 1995 to 2002 in the EU-15. It shows a shift of the tax burden from labour to energy. The graph also shows that overall energy efficiency in the EU-15 has improved in parallel with increased energy taxation.



Evolution of energy intensity, implicit tax rate (ITR) on energy and on labour in the EU-15, 1995-2002. Source: Eurostat 2004 and EEA Report 1/2006[186].

The shares of several types of environmentally-related taxes are shown in the table below, confirming the slight increase in the importance of energy taxes.

	1990	1997	2002
As % of total tax revenues			
Energy	4.7	5.2	5.0
Transport	1.3	1.3	1.3
Pollution/resources	0.2	0.3	0.2
Total environmental taxes	6.2	6.7	6.5
Labour taxes	49.7	50.8	51.0

Table: Shares of environmental taxes (on energy, transport and pollution/resources) and labour taxes as % of the total tax revenues in 1990, 1997 and 2002 for EU15. Source: Eurostat 2004 and EEA Report 1/2006[187].

The following table give data for 2004:

[186] EEA Report 1/2006 "Using the market for cost-effective environmental policies", http://reports.eea.europa.eu/eea_report_2006_1/en/EEA_report_1_2006.pdf, p. 30.

[187] EEA Report 1/2006 "Using the market for cost-effective environmental policies", http://reports.eea.europa.eu/eea_report_2006_1/en/EEA_report_1_2006.pdf, p. 31.

EU-15	2004
Energy taxes	4,9
Transport taxes	1,5
Pollution taxes	0,2
Environmental taxes	6,6
Labour taxes	50,4

At EU level, the Emissions Trading Scheme, which took effect on 1 January 2005, is the largest initiative taken in the field of EU-wide market-based instruments during the past four years. A **Green Paper on Market-based Instruments** is to be launched in 2007.

In the field of taxation, a **Directive on taxation of energy products and electricity** was adopted in 2003. In 2005, the Commission made a proposal to introduce a CO2 sensitive element into vehicle taxation. Furthermore, the Commission will propose in 2007 a modification of the Energy Tax Directive concerning special arrangements for commercial diesel. This proposal will both reduce the distortions of competition existing on the haulage sector and the environmental damages those distortions lead to.

Improving collaboration and partnership with enterprises

In order to improve the environmental performance of enterprises, EU Environmental Management and Audit Scheme (**EMAS**) and the **EU Eco-Label Schemes** are currently under review and options are being considered on how they can be made more effective.

In 2003, the Commission adopted a communication on **integrated product policy** to look at all the phases of a product's life cycle to identify the most effective level for action and the best way to get all actors involved to improve the environmental performance of products. Two pilot projects, one of mobile phones and one on teak garden furniture, were launched in 2004. They ended in 2006 and resulted in industry commitments to make 'greener' products.

Eco-innovation is another important tool to improve the environmental performance of enterprises, while at the same time enhancing competitiveness and growth. The EU Environmental Technology Action Plan (**ETAP**), launched in January 2004 to foster the market for clean technologies, covers a spectrum of actions to promote sustainable production through eco-innovation. It has spawned, for example, a Technology Platform on water, bringing together some 170 key players to converge demand for technology with finance and supply of technological answers, in a policy-based setting. Almost all Member States have submitted national ETAP *road-maps*.

Implementation of ETAP will receive new **financial support** under the EU's 2007-2013 budget. Under the Competitiveness and Innovation Programme €430 million has been earmarked for eco-innovation.

EU Research budget for Environment 2002-2006 over €800 million (including direct Scientific Support to Policies); It is estimated that just under 40% of research funding is for 'applied' research and therefore of more direct relevance to policy making.

Evidence of the use of the results of EU funded research in policy preparation came from the impact assessment of the Commission's FP7 proposal - 67 quotations of EU funded RTD projects have been found in environmental policy documents (issued since 2001).

Example of research results directly feeding into policy preparation: The Thematic Strategy for Air Quality builds on economic-environmental models and tools developed using Community RTD funds. (Health valuation from ExternE and NewExt projects; macroeconomic analysis used the general equilibrium model GEM-E3.)

Community liability

In 2004, a **Directive on environmental liability** with regard to the prevention and remedying of environmental damage was adopted[188]. Member States have three years to transpose it into national law. The Commission proposed a **Directive on the protection of the environment through criminal law** in 2006.

Improve collaboration with consumer groups and NGOs

During the past four years, new environmental initiatives, such as the Thematic Strategies, have been developed in close coordination with stakeholders, in line with the Communication on minimum standards for **consultation of interested parties** by the Commission[189].

The Commission provides financial **assistance to NGOs** which are involved in contributing to the development and implementation of EU environmental policy and legislation in different regions in Europe. In 2004, for example, the Community Action Programme promoting NGOs primarily active in the field of environmental protection, provided financial support to 30 NGOs for more than €6 million.

The Commission has been working to improve the capacity and role of civil society actions in candidate and other south-east European countries through meetings of the **NGO Dialogue**, a forum for key NGOs and 'twinning' grants.

Environmental management systems are seen as key tools to fulfil environmental requirements and promote innovation and increase competitiveness. The 6th EAP also calls for improving collaboration and partnership with businesses as a strategic approach to environmental policy-making, in view of improving the business' environmental performance[190].

The EU **EMAS**[191] is a scheme for businesses to evaluate, report on and improve their environmental performance.

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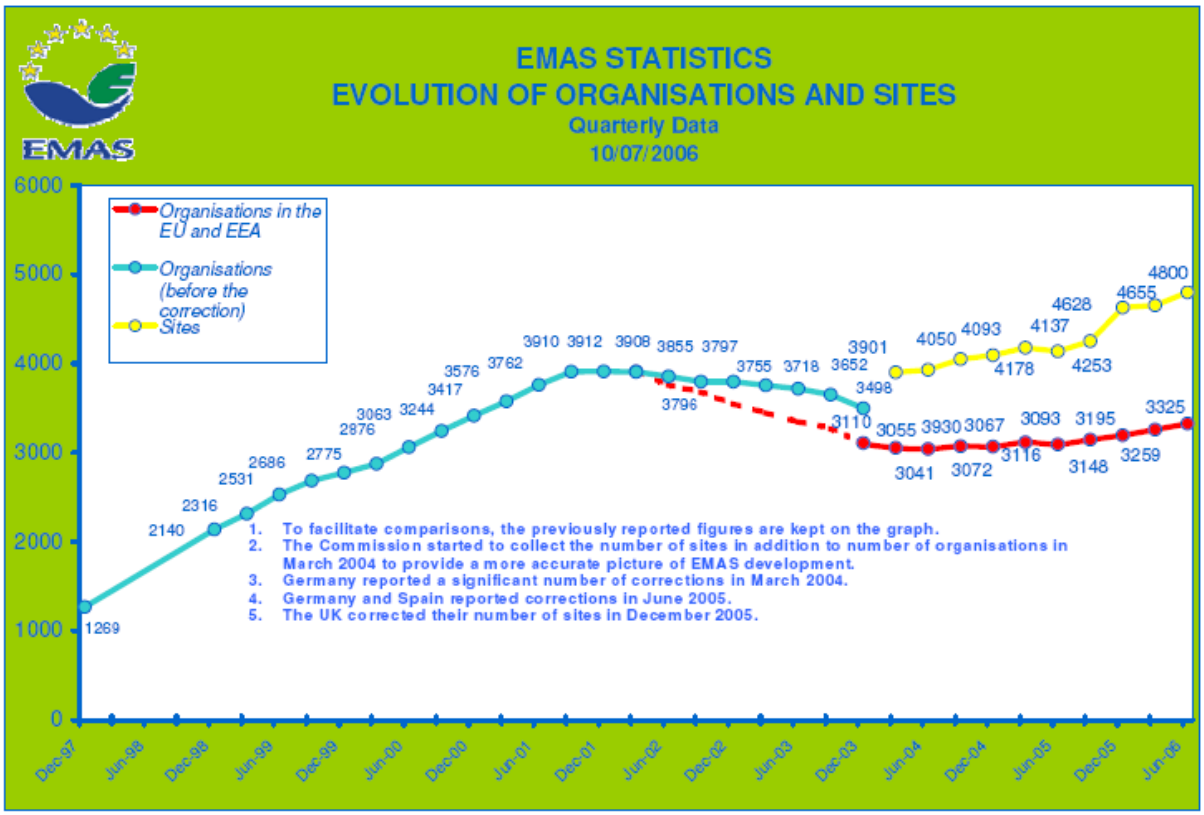
188 Directive 2004/35/EC of 21 April 2004.

189 COM(2002) 704.

190 See Article 3(5) of the 6th EAP.

191 Regulation (EC) No 761/2001 of the European Parliament and of the Council of 19 March 2001 allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) (OJ L 114, 24.4.2001).



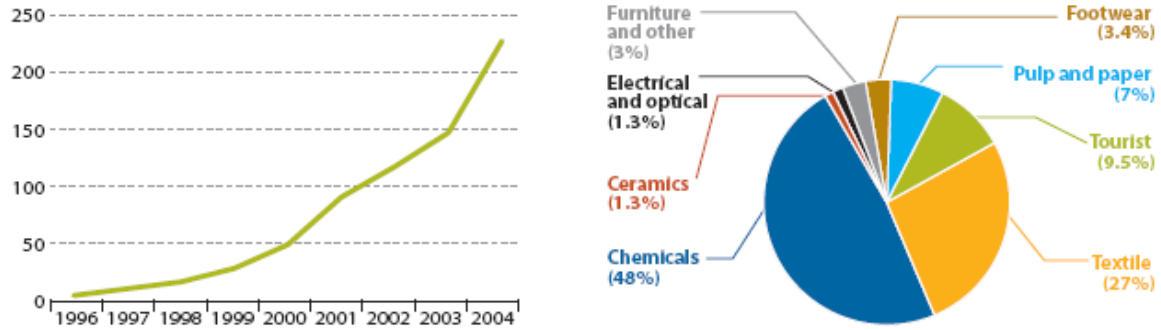
The graph above shows that, because of the corrections introduced in the calculation of registered organisations after revision of the EMAS Regulation, this number slightly decreased. The red line shows that the number of registered organisations has increased recently, particularly in 2006. Measured against the total number of eligible companies, however, EMAS registrations, currently represent only a tiny proportion so far.

Another strategic approach to environmental policy-making of the 6th EAP is improved consumer information, to trigger more sustainable consumption patterns[192]. **Eco-labels** allow consumer to compare environmental performance of the same products and make a more informed purchasing decision[193].

The EU eco-label scheme has undergone a high growth since 1996.Chemicals, mainly paints and detergents, obtained most eco-labels (48%), followed by textile (27%). However, it has yet to extend across a greater number of product groups before it can be considered a significant factor in consumer choice. Data of December 2005 reveals on overall increase of 467% between 2000 and 2005. Chemicals, mainly paints and detergents, obtained most eco-labels (44%), followed by textile (23%). There is the rapid increase of the number of eco-labelled tourist accommodations with 43 licences (15% of the total number of licences), being the 3rd most successful product group within 2 years of its creation.

192 See Article 3(6) of the 6th EAP.

193 Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 83. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 127.



EU Flower awards, total number. Source: Eurostat 2005[194].

Communication activities

In 2002, DG Environment adopted a new **Communication strategy** which aimed at improving information and communication to different target groups: stakeholder specialists, interested public and general public, with a particular focus on young Europeans.

The DG has carried out several successful communications and information providing activities, such as Life Week, Green Week, Business Awards and the European Car Free Day. Environmental communications networks/relays are systematically and intensively used. In addition, a number of 'bottom-up' awareness raising initiatives is supported financially, in line with the DG's policy priorities. The Newsletter, *Environment for Europeans*, has 70,000 subscribers who receive their copy in one of seven languages. DG Environment's website is one of the most visited in the Commission, with 17 million hits.

[194] Eurostat 2005, "Measuring progress towards a more sustainable Europe", p. 126. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-68-05-551/EN/KS-68-05-551-EN.PDF, p. 124.

Annex: Chronological list of illustrative actions taken so far

2002

Climate Change

- Ratification of the Kyoto Protocol.
- Annual Monitoring Report under Dec. 1999/296/EC for a monitoring mechanism of Community CO2 and other greenhouse gas emissions
- Commission Communication on a Community strategy to reduce atmospheric emissions from seagoing ships, and parallel proposal to modify Directive 1999/32 on the Sulphur Content of Fuels
- Communication on the Report on the achievement of national targets of the share of electricity from renewable energy sources

Nature and Biodiversity

- Establishment of the Natura 2000 network and implementation of Birds and Habitats Directives through Life-Nature Fund (ongoing);
- Proposal for a Council Decision on the Ratification, on behalf of the Community, of the Biosafety Protocol
- Amended proposal for a Regulation of the European Parliament and of the Council on the transboundary movements of genetically modified organisms
- Framework Regulation 2371/2002/EC and following Regulations on conservation;
- Regulation on the Monitoring of Forest & Environment Interactions
- Communication Towards a strategy to protect and conserve the European marine environment
- Implementation of the Community Action Plan to integrate environmental protection requirements into the Common Fisheries Policy.
- Communication on Soil protection for sustainable development
- Communication Towards a sustainable use of pesticides
- Proposal for a Directive on ship-source pollution and on the introduction of penal sanctions for pollution offences
- Communication on Animal Welfare Legislation

Environment, Health and the Quality of Life

- Support of Research projects concerning environment and health by the 6th EU Research Framework Programme.

- Communication on a Community strategy to reduce atmospheric emissions from seagoing ships, and parallel proposal to modify Directive 1999/32 on the Sulphur Content of Fuels

- Proposal for a Directive on the limitation of emissions of volatile organic compounds due to the use of organic solvents in decorative paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC

- Proposal for a Directive amending Directive 97/68/EC on the approximation of the laws of the Member States relating to measures against the emissions of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery

- Proposal for a Directive on Control & Follow-up of certain Sealed Radioactive Sources

Natural Resources and Wastes

- Adoption of various comitology decisions implementing the End-of life Vehicles, WEEE, ROHS, Landfill and Packaging and Packaging Waste Directives.

- Adoption and entry into force of the Waste Statistics Regulation (Regulation (EC) No 2150/2002) providing detailed statistics on waste generation and treatment.

- Proposal of Regulation amending Regulation (EC)2037/2000 as regards the critical uses and export of halons, the export of products and equipment containing chlorofluorocarbons and controls on bromochlormethane

- Report on Environmental Technology for Sustainable Development

- Communication on implementation of the Community mechanism for Civil Protection

- Proposal for a new Directive on the Quality of Bathing Waters

- Proposal of Conseil Decision concerning the signature of a new Protocol to the Barcelona Convention on the cooperation on pollution from ships prevention

2003

Climate Change

- Revision of the Directive 1999/94/EC relating to the availability of consumer information on fuel economy and CO_2 emissions in respect of the marketing of new passenger cars;

- Adoption of Directive establishing the EU Emissions Trading Scheme.

- Proposal for a Decision of the European Parliament and of the Council for a monitoring mechanism of Community greenhouse gas emissions and the implementation of the Kyoto Protocol

- Commission Regulation for a standardised and secure system of registries pursuant to Article 19(3) of Directive 2003/87/EC

Nature and Biodiversity

- Revision of the Seveso II Directive;
- Establishment of a new legal framework on the traceability, labelling and transboundary movements of GMOs (Three Regulations in 2003);
- Entry into force (2003) of the Cartagena Protocol on Biosafety;
- Communication on integrated product policy.
- Communication - Pan-European environmental co-operation after the 2003 Kiev conference
- Communication Promoting access to genetic resources and equitable benefit-sharing (ABS)
- Commission Communication - The World Summit on Sustainable Development one year on: implementing our commitments
- Proposal for a Council regulation on the protection of animals during transport and related operations
- Proposal for a Council decision on the signature of the European Convention for the Protection of Animals during international transport

Environment, Health and the Quality of Life

- Communication on a European Environment & Health Strategy
- Adoption of Regulation 304/2003 implementing the Rotterdam Convention on Prior Informed Consent (PIC) Procedure.
- Proposal of Council Decision on approving, on behalf of the European Community, the Stockholm Convention on Persistent Organic Pollutants
- Regulation on Persistent Organic Pollutants
- Proposal of Council Decision on the accession, on behalf of the European Community to the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants Communication On the road to sustainable production: Progress in the implementation of Council Directive 96/61/EC concerning integrated pollution prevention and control
- Regulation on Biocidal Products

- Proposal of Council Recommendation laying down requirements for standardised information on the radioactive airborne and liquid discharges to the environment from nuclear reactors and reprocessing plants in normal operation

Natural Resources and Wastes

- Proposal for a revised Batteries Directive;

- Proposal for a revised Waste Shipment Regulation;

- Proposal for a revised Mining Waste Directive;

- Report from the Commission to the Council and the European Parliament on the implementation of Community Waste Legislation: Directive 75/442/EEC on waste, Directive 91/689/EEC on hazardous waste, Directive 75/439/EEC on waste oils, Directive 86/278/EEC on sewage sludge and Directive 94/62/EC on packaging and packaging waste for the period 1998-2000;

- Proposal for a Council Decision on the Signature, on behalf of the European Community of the agreement on civil liability for transboundary damage caused by hazardous activities within the scope of the Convention on the protection and use of transboundary watercourses and international lakes and the Convention on the transboundary effects of industrial accidents

- Communication towards a Thematic Strategy on Waste Prevention & Recycling

- Proposal for a Regulation of the European Parliament and of the Council on Shipments of Waste

- Communication on integrated product policy.

- Proposal for a directive on establishing a framework for eco-design of end use equipment

- Communication on Developing an Action Plan for Environmental Technology

- Proposal for a Council Decision on the signature of the UN-ECE Protocol on Strategic Environmental Assessment

- Report from the Commission to the European Parliament and the Council on the Application and Effectiveness of the EIA Directive (Dir. 85/337/EEC as amended by Directive 97/11/EC)

- Communication on Integrated Product Policy

- Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1655/2000 of the European Parliament and of the Council of 17 July 2000 concerning the Financial Instrument for the Environment (LIFE)

2004

Climate Change

- Adoption of Directive amending the EU Emissions Trading Scheme to recognise credits from the Kyoto Protocol's project mechanisms;

- Commission Decisions on National Allocation Plans for 2005-7;

- Adoption of Decision on monitoring greenhouse gas emissions and implementing the Kyoto Protocol;

- Communication on renewable energy share in the EU.

- Communication on Guidance on greenhouse gas emission allowance trading

- Commission Decision establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council

- Communication on the Strategy to reduce CO2 emissions from cars

- Commission Report on Quality of gasoline and diesel fuel used for road transport in the European Union. First annual report; (Reporting years 2001 and 2002)

- Catching up with the Community's Kyoto target: Report from the Commission

Nature and Biodiversity

- Handbook on Environmental public procurement.

- Communication on financing the European network Natura 2000

- Decision granting financial support as provided for by regulation 1655/2000 of the European Parliament and the Council of 17/07/00 concerning the financial instrument for the environment (LIFE) for actions concerning the protection of nature

- Decision granting financial support as provided for by regulation 1655/2000 of the European Parliament and the Council of 17/07/00 concerning the financial instrument for the environment (LIFE) for certain Third countries bordering the Mediterranean and the Baltic sea

- Proposal for a Council Decision on the Community position to be adopted on certain proposals submitted to the 13th meeting of the CoP to CITES

- Directive on Humane Trapping Standards

- Proposal for a Council Decision by the European Community of the Agreement on the conservation of African-Eurasian Migratory Waterbirds

- Report from the Commission 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 and repealing Council Directive 90/220/EE

- Proposal of Regulation concerning the Financial Instrument for the Environment

- Guidelines 2005_2006 for LIFE Environment preparatory projects

- Regulation amending Regulation (EC) No 1727/1999 of 28 July 1999 laying down certain detailed rules for the application of Council Regulation (EEC) No 2158/92 on protection of the Community's forests against fire and Regulation (EC) No 2278/1999 of 21 October 1999 laying down certain detailed rules for the application of Council Regulation (EEC) N) 3528/86 on the protection of the Community's forests against atmospheric pollution.

- Decision on the granting of aid for the national programmes 2003 - 2004, entitled "Forest Focus

Environment, Health and the Quality of Life

- Environment and Heath Action Plan for 2004 -2010;

- Regulation implementing the Stockholm Convention on Persistent Organic Pollutants (POPs);

- Legislation on ambient air pollution: Directive on emissions from engines in non-road machinery;

- Directive on limiting emissions of volatile organic compounds from paints and varnishes;

- Fourth air quality daughter directive;

- Commission Decision laying down a questionnaire to be used for annual reporting on ambient air quality assessment under Council Directives 96/62/EC, 1999/30/EC and 2000/69/EC

- Report from the Commission to the European Parliament and the Council concerning existing Community measures relating to sources of environmental noise.

- Communication on the Thematic Strategy on the Urban Environment

- Decision on Structure for Submitting Information on Air Quality Plans & Programmes

- Commission Decision concerning guidance for implementation of Directive 2003/3/EC of the European Parliament and of the Council relating to ozone in ambient air

- Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee on the implementation of the Community Strategy for dioxins, furans and polychlorinated biphenyls

- Commission Decision adopting Community import decisions for certain chemicals products pursuant to Regulation (EC) No 304/2003 of the European Parliament and of the Council

- Commission Regulation amending Annex I to Regulation (EC) No 304/2003 of the European Parliament and of the Council concerning the export and import of dangerous chemicals

- Communication on a European Environment & Health Action Plan 2004-2010

- Recommendation to the Council on the participation of the European Community in negotiations at the first meeting of the Conference of the Parties (CoP1) to the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

- Commission Decision establishing, in accordance with Directive 2001/18/EC of the European Parliament and of the Council, thresholds for adventitious or technically unavoidable traces of genetically modified seeds in other products

- Proposal for a Council Decision on the conclusion, on behalf of the European Community, of the UN-ECE Protocol on Pollutant Release and Transfer Registers

- Proposals for a COUNCIL DECISION on the signature and conclusion, on behalf of the European Community, of the Agreement between the European Community and the Swiss Confederation concerning the latter's participation in the European Environment Agency and the European Environment Information and Observation Network

Natural Resources and Wastes

- Directive 2004/12/EC amending Directive 94/62/EC on Packaging and Packaging Waste;

- 3rd Commission report on urban waste treatment

- Communication on the Environmental Technology Action Plan

- Communication on the Integration of environmental aspects into the Standardisation Process

- Communication on the reinforcement of civil protection capacities

- Report on the application in the Member States of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances for the period 2000-2002

- Proposal for a Directive of the European Parliament and of the Council on the type-approval of motor vehicles with regard to their re-usability, recyclability and recoverability and amending Council Directive 70/156/EEC

- Proposal of Council Decision extending the Community action programme in the field of civil protection for the period 2005/2006

- Commission Working Paper Integrating Environmental Concerns into Other Policy Areas: a Stocktaking of the Cardiff Process

- Communication on Flood Management

- EU solidarity programme on the consequences of terrorist threats and attacks (revised/widened CBRN programme)

- Directive concerning Infrastructure for Spatial Information in Europe

- Practical Handbook on Public Procurement & the Environment
- Report from the Commission to the Council and the European Parliament on incentives for EMAS registered organisation.

2005

Climate Change

- Entry into force of Kyoto Protocol;
- Communication on future global climate change strategies;
- Emissions trading scheme;
- Communication from the Commission: Further guidance on allocation plans for the 2008 to 2012 trading period of the EU Emission Trading Scheme
- Communication of the Commission: Report on Demonstrable Progress under the Kyoto Protocol
- Communication from the Commission: progress in achieving the Community's target under the Kyoto protocol
- II European Climate Change Programme (ECCP);
- Green Paper on a European Energy Efficiency Initiative;
- Communication on sustainable energy
- Communication on an Action plan for Biomass
- Proposal for a Directive on the promotion of low energy and low emission road vehicles
- Application of the EU Emissions trading scheme;
- Proposal for Council Directive on passenger car related taxes.
- Proposal for a Regulation laying down harmonised rules on the construction of motor vehicles with regard to their emissions (EURO V)
- Report on the Quality of gasoline and diesel fuel used for road transport in the European Union: Second annual report (Reporting year 2003)
- Commission Decisions concerning the national allocation plan for the allocation of greenhouse gas emission allowances notified by Poland, the Czech Republic, Italy, Greece
- Communication Implementing the Community Strategy to Reduce CO2 Emissions from Cars:
  Fifth annual report on the effectiveness of the strategy (Reporting year 2003)

- Recommendation from the Commission to the Council for the European Community to negotiate amendments and adjustments to the Montreal Protocol at the XVIIth Meeting of the Parties

- Communication on reducing the climate change impact of aviation

Nature and Biodiversity

- Revision of the CAP and Regulation 1782/2003/EC and creation of the European Agriculture Rural Development Fund (EARDF);

- Council Regulation on organic production and labelling of organic products;

- Thematic Strategy on the protection of the marine environment.

- Proposal for a Council Recommendation on the position of the European Community in the negotiations at the second meeting of the Conference of the Parties serving as the Meeting of the Parties to the Cartagena Protocol on Biosafety regarding documentation requirements for GMOs for food, feed and processing.

- Summary Report from the Commission based on the reports of Member States concerning their experiences with directive 90/219/EEC, as amended by Directive 98/81/EC, on the contained use of genetically modified micro-organisms (for the period 1999 – 2003)

- Report on the Evaluation of the third phase and the continuation of the LIFE

- Proposal of Council Decision establishing the position to be adopted on behalf of the European Community with regard to the proposal for amendments of Appendices II and III to the Convention on the Conservation of European Wildlife and Natural Habitats at the annual Standing Committee meeting

- Proposal for a Directive in the field of insurance and civil liability for shipsource pollution (3rd package on maritime safety)

- Proposal for Directive on animal health conditions for placing on the market,import and transit of aquaculture animals and their products, and on minimum measures for the prevention and control of certain diseases in aquatic animals

Environment, Health and the Quality of Life

- Directive on the sulphur content of marine fuels;

- Thematic Strategy on Air Pollution and Framework Directive on Air;

- Commission proposal for a Regulation on Euro 5 standards for light-duty vehicles.

- Commission Staff Working Paper - the participation of the European Community in negotiations at the first meeting of the Conference of the Parties (CoP-1) to the Stockholm Convention on persistent organic pollutants

- Commission Decision adopting the fifth series of executive summaries of reference documents for the purpose of Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control

- Report on Directive 99/30/EC on limit values for SO2, NO2, NOx.

- Commission Regulation imposing testing and information requirements on the importers or manufacturers of certain priority substances in accordance with Council Regulation (EEC) N° 793/93 on the evaluation and control of the risks of existing substances.

- Commission Decision adopting Community import decisions for certain chemicals products pursuant to Regulation (EC) No 304/2003

- Commission Regulation (EC) on the third phase of the 10-year work programme referred to in Article 16(2) of Directive 98/8/EC of the European Parliament and the Council concerning the placing of biocidal products on the market

- Commission staff working paper on the participation of the European Community in negotiations at the second meeting of the Conference of the Parties (CoP2) to the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

- Report of the Commission on the implementation of Directive 96/61/EC concerning integrated pollution prevention and control

Natural Resources and Wastes

- EU Action Plan to promote all forms of biomass;

- Thematic Strategy on waste prevention and recycling and Waste Framework Directive;

- Proposal for a Directive of the European Parliament and the Council on waste;

- Thematic Strategy on the sustainable use of natural resources;

- Eco-design framework Directive 2005/32/EC.

- Report on the national strategies for the reduction of biodegradable waste going to landfills pursuant to Article 5(1) of Directive 1999/31/EC on the landfill of waste

- Commission decision laying down detailed rules on the monitoring of the reuse/recovery and reuse/recycling targets set out in Directive 2000/53/EC of the European Parliament and of the Council on end-of life vehicles

- Commission Decision laying down compliance rules and data formats for the purposes of directive 2002 /96/EC of the European Parliament and of the Council on waste electrical and electronic equipment

- Financing Decision EEA

- Report on the implementation of the Environmental Technologies Action Plan in 2004
- EU Mercury Strategy
- Proposal for a Council Regulation establishing a Disaster Preparedness and Rapid Response Instrument
- Communication Improving the Community Civil Protection Mechanism: Follow-up to the EU Action Plan of 31 January 2005
- Competitiveness and Innovation Framework Programme
- Communication on Implementation of GMES
- Commission Decision on the establishment of a register of sites to form the intercalibration network in accordance with Directive 2000/60/EC of the European Parliament and of the Council
- Sixth Annual Survey on the implementation and enforcement of Community environmental law (2004)
- Working document of the Commission Services on the interlinkages between employment policies and environment policies.
- Commission Working Paper on Better Regulation and the Thematic Strategies
- Recommendation from the Commission to the Council on the participation of the European Community in negotiations on genetically modified organisms under the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, including the 2nd Meeting of the Parties to be held in Almaty, Kazakhstan, 25-27 May 2005
- Proposal for a Council Decision on the Signature of the Alpine Convention's Protocols on Soil Protection, Energy, and Tourism

2006

Climate Change

- Adoption of the F-gas Regulation 2006/842/EC/ Adoption of Directive 2006/40/EC on F-gases in mobile air conditional systems in motor vehicles;
- Communication from the Commission to the Council and the European Parliament : Implementing the Community Strategy to Reduce CO2 Emissions from Cars: Sixth annual report on the effectiveness of the strategy (Reporting year 2004)
- Proposal of Directive amending Directive 2003/87/EC in order to include aviation in the EU Emissions Trading Scheme
- Green Paper: A European Strategy for Sustainable, Competitive and Secure Energy;

- Communication concerning the Establishment of The Global Renewable Energy Fund of Funds -- An Innovative Public-Private Financing Mechanism in support of the Global Sustainable Development Agenda

- Energy efficiency action plan;

- Proposal for a Council Decision on the conclusion of the agreement between the Government of the United States of America and the European Community on the coordination of energy efficient labelling programmes for office equipment.

- Strategy on biofuels.

- Communication from the Commission: Fourth national communication from the European Community under the UN Framework Convention on Climate Change.

- Progress Report on achieving Kyoto targets

- Communication Building a global carbon market - Report pursuant to Article 30 of Directive 2003/87/EC (establishing a scheme for greenhouse gas emission allowance trading within the Community.)

- 2nd Round of Commission decisions on the National Allocation Plans pursuant to the implementation of the (Emissions Trading Directive) Directive 2003/87/EC

- Commission Recommendation on the promotion of shore-side electricity for use by ships at berth in EU ports

- Communication Assigned amount report required under Article 3 of Decision 2002/358/EC

Nature and Biodiversity

- Biodiversity Communication;

- Thematic Strategy on Soil Protection.

- Creation of the European Fisheries Fund (EFF).

- Report to the European Parliament and to the Council regarding the implementation of Regulation (EC) No 1830/2003 concerning the traceability and labelling of genetically modified organisms and amending Directive 2001//18/EC.

- European Action Plan on Animal Welfare

Environment, Health and the Quality of Life

- EU Forest Action Plan;

- Thematic Strategy on Urban Environment;

- Thematic Strategy on the sustainable use of pesticides;

- Review of Environment & Health Information and Implementation Plan.

- Proposal for a Council Decision on the conclusion, on behalf of the European Community, of the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade

- Commission Decision adopting the sixth series of executive summaries of reference documents for the purpose of Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control

- Proposal for a Directive of the European Parliament and of the Council on environmental quality standards and pollution controls in the field of water policy and amending Directives 2000/60/EC and 96/61/EC

- Communication A strategy against chemical pollution of surface waters

- Communication to the Council and the European Parliament: Towards 2020. An environmental strategy for the Mediterranean

- Commission Working Paper Progress Report on achieving Kyoto targets

Natural Resources and Wastes

- Adoption of revised Batteries Directive;

- Adoption of revised Waste Shipment Regulation;

- Adoption of Directive 2006/21/EC of the European Parliament and the Council on waste from extractive industries and amending Directive 2004/35/EC.

- Report from the Commission to the Council and the European Parliament on the implementation of Community Waste Legislation: Directive 75/442/EEC on waste, Directive 91/689/EEC on hazardous waste, Directive 75/439/EEC on waste oils, Directive 86/278/EEC on sewage sludge and Directive 94/62/EC on packaging and packaging waste and Directive 1999/31/EC on the landfill of waste.

- Report from the Commission to the Council and to the European Parliament on the implementation of Council Regulation (EEC) No 259/93 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community.

- Directive on flood risk management

- Proposal for a Council Decision amending the Council Decision of 23 October 2001 establishing a Community mechanism to facilitate reinforced cooperation in civil protection assistance interventions

- Ratification of the Protocols of the Alpine Convention

- Staff Working Paper on the participation of the European Community in the 8th meeting of the Conference of the Parties of the Basel Conventionon the control of transboundary movements of hazardous wastes at their disposal

- Commission staff working paper on the implementation and functioning of Regulation (EC) No 304/2003 of the European Parliament and the Council concerning the export and import of dangerous chemicals. Proposal of Regulation on exports and imports of dangerous chemicals replacing Regulation 304/2003

- Proposal of Regulation on the ban of exports of metallic mercury and its storage

- Report on the relationship between Directive 2001/42/EC and Regulations (EC) 1260/99 and (EC) 1257/99 and their successors

- Report on the Implementation of Directive 94/62/EC on Packaging and Packaging Waste and its Impact on the Environment, as well as on the Functioning of the Internal Market

2007

Climate change

- Adoption of the Climate and Energy package

- 2nd Round of Commission decisions on the National Allocation Plans pursuant to the implementation of the (Emissions Trading Directive) Directive 2003/87/EC

- Proposal of Directive modifying Directive 98/70 on the quality of petrol and diesel fuels, amending Directive 99/32 and repealing Directive 93/12.

- Communication from the Commission to the Council and the European Parliament: Results of the review of the Community Strategy to reduce CO2 emissions from cars.

Natural Resources and Wastes

- Modification of Directive 2003/87/EC in order to include aviation in the EU Emissions Trading Scheme

- Interpretative Communication on by-products and waste

- Proposal for a Directive replacing the Framework Decision 2003/80/JAI of Council of 27.01.2005 on the protection of the environment by criminal law.