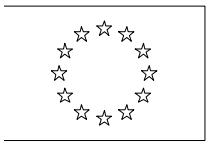

EUROPEAN COMMISSION
DIRECTORATE-GENERAL XI
ENVIRONMENT, NUCLEAR SAFETY AND CIVIL PROTECTION
Directorate D - Environment quality and natural resources
XI.D.4 - Global environment: climate change, geosphere, biosphere, energy

FIRST REPORT ON THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY BY THE EUROPEAN COMMUNITY

1998

1 INTRODUCTION

1.1 THE CONVENTION ON BIOLOGICAL DIVERSITY. BACKGROUND TO THIS REPORT

The global scale of biodiversity losses and the inter-dependence of different species and ecosystems across national borders demand concerted international action in the context of the Convention on Biological Diversity (CBD). It is a central element of the world community's action for sustainable development.

In the context of the CBD, 'biological diversity' includes diversity within species between species and of ecosystem. The three principal objectives of the CBD are:

- the conservation of biological diversity;
- the sustainable use of its components; and
- the fair and equitable sharing of the benefits arising out the use of genetic resources.

The CBD was signed by the European Community at the UN Conference on Environment and Development in Rio de Janeiro in 1992, and ratified on 21 December 1993. The Convention entered into force on 29 December 1993. The 15 Member States of the European Community are also Contracting Parties to the CBD.

This report is the European Community's response to Decision II/17 of the Second Conference of the Parties to the Biodiversity Convention on the form and intervals of national reports by Contracting Parties requested under Article 26 of the Convention. According to the Decision, the first national reports by Parties are to focus in so far as possible on measures taken for the implementation of Article 6 of the Convention (*General Measures for Conservation and Sustainable Use*) as well as the information available in national country studies on biological diversity. An Annex to Decision II/17 contains suggested guidelines for national reporting, which have informed the structure and content of this report.

The report is divided into the following chapters:

Part 1 introduces the report, and explains the European Community's role as a Contracting Party and the framework within which it implements and pursues the goals of the Biodiversity Convention.

Part 2 summarizes the status and importance of and pressures on biodiversity in the European Community.

Part 3 describes actions to date by the Community relevant to the different measures set out in the Convention.

Part 4 describes the Community's orientation for the future in three principal areas:

- the implementation of the Community's Biodiversity Strategy.

- the process of reviewing the Community's Fifth Environmental Action Programme with a view to identifying priority areas for action in the period to 2000; and

- the Commission Communication *Agenda 2000*, adopted in July 1997, which outlines the broad outlook for the development of the European Union beyond the year 2000 and the impact of enlargement;

In addition, *Annex A* outlines the structure of the European Community and describes how legislation and decisions are made in the Community at the time of the report, and *Annex B* lists international conventions and agreements to which the European Community is a party (not all of which have yet entered into force) and which are relevant to its international action in favour of biodiversity. Finally *Annex C* contains the list of legal instruments and policy documents refered to in this report.

1.2 ENVIRONMENT POLICY MAKING IN THE EUROPEAN COMMUNITY

The Community's environment policy builds on a strong commitment to environmental protection among the citizens of the European Union. A 1996 survey revealed that in most Member States a majority of European citizens believe the EU needs to accord special status to its environmental protection policy. 83% of those questioned considered environmental protection a priority, with 78.3% considering an environment policy a necessary part of the building of Europe. (1)

Whilst the Community has had an environment policy since 1973 and environmental legislation relating to biodiversity since 1979 (with the adoption of the Birds Directive), a specific reference to the environment did not appear in the Community's constitution until 1986, when broad principles for the Community's environment policy were included in the Treaty of Rome. Until then, action could be taken in the context of more general powers under Articles 100 and 235.

The Single European Act in 1986 introduced Title VII on 'Environment' at Articles 130r, 130s and 130t . These articles explicitly enabled the introduction of environmental legislation that was more ambitious but still required unanimity of the Council of Ministers. They provide for Community action pursuant to the objectives of preserving, protecting and improving the quality of the environment, contributing towards the protection of human health, and the prudent and rational utilisation of natural resources. They require that Community action be based on the principles of preventive action and polluter-pays and do not prevent Member States from implementing more stringent environmental measures.

Subsequently, the Maastricht Treaty of 1992 removed the right to veto, so qualified majority voting now applies for most environmental legislation, except in some reserved cases (legislation of a primarily fiscal nature or affecting choice between energy sources and relating to land use planning or the management of water resources). In addition, the introduction of environmental legislation in the context of removing internal barriers to

(1) Source: European Public Opinion on the Environment and Economic Development in Europe, DGX

trade has been accelerated by the amendment of Article 100a, which has introduced qualified majority voting for secondary legislation.

The Maastricht Treaty further improved the constitutional standing of the Community's environment policy, in particular by requiring integration of environmental protection requirements into other Community policies and including an express reference to promoting measures at international level among the objectives of Community environment policy. Since Maastricht, the tasks of the Community have included the promotion *throughout the Community of .. sustainable and non-inflationary economic growth respecting the environment.* The objectives of the European Union itself (which apply to all aspects of its activities) include *'to promote economic and social progress which is balanced and sustainable..'*

Once ratified, the Amsterdam Treaty of 1997 will further strengthen the basis for environment policy in the European Community. Developments are presented in *Box 1.1*, which highlights the integration of environmental protection and sustainable development as objectives throughout the Treaty.

Box 1.1 Sustainable Development in the Amsterdam Treaty

- The introduction to the amended Treaty on European Union refers to 'taking into account the principle of sustainable development';
- One of the objectives of the European Union in the revised Treaty is 'to achieve balanced and sustainable development';
- The objectives of the European Community in the revised Treaty include a reference to 'balanced and sustainable development of economic activities, sustainable and non inflationary growth' and 'a high level of protection of the environment and improvement of the quality of the environment';
- The Treaty establishing the European Community is revised to include a general clause on environmental integration, so that 'environmental protection requirements must be integrated into the definition and implementation of Community policies and activities ... in particular with a view to promoting sustainable development';
- A new provision is added to the existing obligation for the Commission to take a high level of protection as a basis in its proposals concerning environmental protection, so that the Council and Parliament will also seek to achieve a high level of protection within their respective powers; and
- A Declaration by the Commission notes that environmental impact studies will systematically be carried out on any proposal which may have environmental consequences.

1.2.1 The Fifth Environmental Action Programme

Within the overall framework provided by the Treaty of Rome and now the Treaty on European Union, European Community policy on the environment has developed through a succession of 'Environmental Action Programmes', the first of which was agreed in 1973. The Action Programmes are policy documents from the European Commission which aim to provide strategic guidance and orientation for the substantive work programmes and actions of the principal actors within the European Community. They also provide a broad framework for securing the integration of environmental issues and concerns into other areas of Community policy.

The Fifth Environmental Action Programme *Towards Sustainability* which was communicated by the Commission to the Council of Ministers in 1993, sets targets for the period from 1993-2000, together with a legislative agenda to the end of 1997. The basic strategy of the programme is to achieve full integration of environmental and other relevant policies through the active participation of all the main actors in society in a broadening and deepening of the range of instruments for control and behavioural change, including, in particular, greater use of market-based instruments.

The Fifth Environmental Action Programme includes the following key elements.

- Clear *integration* of environmental, social and economic factors in decision-making at all levels;
- An emphasis on the need to *involve all levels of society* in a spirit of 'shared responsibility', so that the Programme identifies actors at all levels in relation to its targets;
- A *sectoral* approach, focusing on five sectors targeted because of their actual or potential environmental impacts or the key part that they can play in the pursuit of sustainable development. The five sectors are:
  - industry;
  - energy;
  - transport;
  - agriculture; and
  - tourism.

- A *themed* approach, addressing a number of environmental issues or 'themes' with a Community-wide dimension of particular significance. The themes are: climate change; acidification and air quality; protection of nature and biodiversity; management of water resources; the urban environment; coastal zones; and waste management. Performance targets are indicated for each of the principal themes for the period up to the year 2000 and a representative selection of actions is prescribed with a view to achieving these targets. Key targets for the theme protection of nature and biodiversity up to the year 2000 are:
  - maintenance or restoration of natural habitats and species of wild fauna and flora at a favourable conservation status;
  - creation of the Natura 2000 European network of protected sites; and
  - strict control of abuse of and trade in wild species.

- A deepening and broadening of the *range of instruments* to complement normative legislation, so that the programme identifies a wide range of instruments to pursue its targets. The Fifth Environmental Action Programme identifies a number of elements important to the creation of an extended package of instruments: improvement of environmental data; scientific research and technological development; sectoral and spatial planning; the economic approach: getting the prices right; public information and education; financial support mechanisms; subsidiarity and shared responsibility; implementation and enforcement of the programme within the Community;

- Recognition of *four major problems* that are an increasing cause of global concern: climate change; ozone layer depletion; biodiversity loss and deforestation. The Environmental Action Programme sets an ambitious target for preservation of global biodiversity; '*no further deterioration of ecosystems and habitats necessary to maintain diversity of species and within species*'. Targets up to 2000 for protection of forests are:
  - maintenance / reinstatement of forests at least at 1990 levels;
  - substantial reforestation programmes for tropical, temperate and boreal forest areas; and
  - integrated protection / sustainable management of forest areas.

A review of progress in meeting the objectives of the Fifth Environmental Action Programme has been undertaken with a view to deciding on action to the year 2000. The development and implementation of a Community Biodiversity Strategy is among its proposed priorities. This is considered in more detail in *Part 2*.

1.2.2 Biodiversity in the European Commission

Conservation and sustainable use of biodiversity in the European Community calls for a coordinated approach involving the Community institutions; Member States; private sector, and civil society in a spirit of shared responsibility.

Within the European Commission, implementation of the Biodiversity Convention straddles the work of many Directorates-General. To facilitate integration of environment considerations across all of the Commission's tasks, each of the twenty-four Directorates-General has nominated an 'integration correspondent'. In addition, many of the Directorates-General have established specialist environment units.

The principal Directorate-General with responsibility for policy relevant to the Biodiversity Convention, including the development of the Community's biodiversity strategy, is Directorate-General XI, the Directorate-General for Environment, Nuclear Safety and Civil Protection. Within DGXI, a specialist team deals exclusively with the development and implementation of the Biodiversity Convention.

1.2.3 The European Environment Agency

The European Environment Agency (EEA) which is located in Copenhagen, started its activities in late 1993. Norway, Iceland and Liechtenstein joined in 1995. The broad objectives of the EEA are to provide the European Community and the agency's Member States with objective, reliable and comparable information at European level, thereby enabling policy makers to take the appropriate action. The EEA is also charged with ensuring that the public is properly informed about the state of the environment.

Box 1.2 below outlines the ten specific tasks of the EEA, as set out in the Regulation under which it was established [(1)]. To fulfil its mandate the EEA publishes objective reports about the state of the environment and likely future trends, together with analytical reports on the

(1) Regulation (EEC) No 1210 / 90

effectiveness of current environmental policies and new policy instruments to tackle emerging and continuing environmental problems.

The EEA works through the European Information and Observation Network (EIONET) which consists of reference centres in every EEA member country coordinated by National Focal Points, together with a number of European Topic Centres ('ETCs') which work at European level on specific media. A total of nine European Topic Centres have so far been established, covering:

- air emissions;
- air quality;
- inland waters;
- land cover;
- marine and coastal environment;
- nature conservation;
- soil;
- waste; and
- catalogue of data sources.

Box 1.2 Tasks of the European Environment Agency

- to establish and coordinate EIONET;
- to provide the Community and the Member States with the objective information necessary for framing and implementing sound and effective environmental policies;
- to record, collate and assess data on the state of the environment, to draw up expert reports on the quality, sensitivity and pressures on the environment within the territory of the Community, to provide uniform assessment criteria for environmental data to be applied in all Member States;
- to help ensure that environmental data at European level are comparable and, if necessary, to encourage by appropriate means improved harmonisation of methods of measurement;
- to promote the incorporation of European environmental information into international environmental monitoring programmes;
- to ensure the broad dissemination of reliable environmental information and in addition to publish a report on the state of the environment every three years;
- to stimulate the development and application of environmental forecasting techniques;
- to stimulate the development of methods of assessing the cost of damage to the environment and the costs of environmental preventive, protection and restoration policies;
- to stimulate the exchange of information on the best technologies available for preventing or reducing damage to the environment; and
- to co-operate with other bodies and Community programmes.

1.2.4 Funding for Biodiversity

The Community has a number of funds at its disposal to pursue its policy objectives. There are a number of budget lines that are specific to environment and biodiversity (highlighted in *Part 3* below). However, the bulk of Community funding is provided through the Structural Funds and the Cohesion Fund, both of which are relevant to the pursuit of environmental and biodiversity objectives (see further Section 3.4.5.below).

The Structural Funds provide funding for infrastructure and environmental projects aimed at improving the economic and social balance among regions of the Community and facilitating completion of the Single European Market and economic monetary union. The funds are applied to projects that contribute to the achievement of six priority Objectives for the period 1994-1999. There are four Structural Funds which provide assistance for measures of various types, in which there is scope for environmental initiatives:

- The European Regional Development Fund (ERDF);
- The European Social Fund (ESF);
- The European Agricultural Guidance and Guarantee Fund (EAGGF); and
- The Financial Instrument for Fisheries Guidance (FIFG).

Priorities for Community funding and definition of the level and duration of Community support are set in plans known as the Community Support Framework. In addition, the Cohesion Fund, which was established under the Maastricht Treaty, applies to those Member States with GDP lower than 90% of the Community average (namely Greece, Spain, Ireland and Portugal) finances investment projects in the fields of transport infrastructure and the environment.

1.2.5 The Community's Role in international policy on sustainable development

The European Community has taken a lead in international discussions on many environmental issues, including climate change and ozone depletion, and the Community's experience has provided valuable lessons in the search for the most cost-effective and appropriate means to progress towards sustainability.

A number of areas where the Community has exclusive competence, including in international discussions, are laid down in the Treaty of Rome. They include trade, agriculture and fisheries. In other policy areas, internal (Community-wide) legislation is mirrored by the competence to participate in international initiatives - to the extent that that participation is necessary to the attainment of the Community's objectives. In addition, in the environmental policy field, the Community also has concurrent competence (alongside the Member States) to participate in and conclude international agreements when its participation is necessary to attaining the Community's objectives.

The European Community continues to support multilateral action to tackle environmental problems, and for that reason has engaged in a number of negotiations for legally binding instruments such as the Climate Change Convention and on Persistent Organic Pollutants and Prior Informed Consent. In the field of biodiversity, the European Community is party to most of the international environmental agreements that are directly relevant to the Biodiversity Convention, including those listed in *Annex A*. These agreements and others to which the Community is party have been implemented by the Community through specific conservation legislation; e.g. Directives on birds and habitats (discussed in *Section 3.4.1*); through horizontal measures including research and environmental impact assessment, (discussed further in *Section 3.3.2*); through integration into other policy areas (discussed in *Section 3.4*); and through funding to support Community and third party conservation measures. Some key elements of the Community's involvement in the international community in matters related to biodiversity are highlighted briefly below.

Whilst the European Community is not a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), CITES was initially implemented in the European Community through Council Regulation 3626/82/EEC on the implementation in the Community of CITES, which was replaced by Council Regulation 338/97/EC with effect from 1 June 1997. This Regulation is one of the most comprehensive pieces of legislation on the subject in the world, regulating import and export of some 30,000 wild plant and animal species and their products. An Annex bans import of a number of species identified as a threat to European Community ecosystems. The new CITES regulation aims to improve application of CITES and wildlife trade regulations in the Member States, taking into account the present structure of wildlife trade and scientific knowledge acquired since the adoption of Regulation 3626/82. A Community-wide enforcement body has been established to coordinate and harmonise enforcement. Related Regulations have prescribed detailed conditions and criteria for permits and certificates and established a representative list of species.

The European Community participated in the Leipzig Conference on Plant Genetic Resources in June 1996 which adopted a Global Plan of Action for the Conservation and Utilisation of Plant Genetic Resources for Food and Agriculture. It is also participating in ongoing work aimed at revising the FAO's International Undertaking on Plant Genetic Resources in the light of the Biodiversity Convention. The European Community participated actively in the UN Intergovernmental Panel on Forests (IPF), the work of which is now continuing under the auspices of the open-ended Intergovernmental Forum on Forests (IFF) which was created at UNGASS in June 1997. The EC is one of the major proponents of a legally binding international instrument to slow deforestation rates and promote sustainable forest management.

The European Community actively participates in the trade and environment work of the WTO, UNEP, UNCTAD and OECD. In the WTO Committee on Trade and Environment, the European Community has strongly supported the establishment of a clear and predictable framework to accommodate within the multilateral trading system the use of trade measures taken pursuant to Multilateral Environmental Agreements. With regards in particular to the relationship between the Biodiversity Convention and the Agreement on Trade Related Aspects of Intellectual Property Rights, the Community considers it essential to promote synergies between these two agreements and to ensure consistency in their implementation. A Commission Communication in February 1996 [(1)] led to the identification of principles which underpin the current European Community position on trade and environment.

The European Community is not a Participant in the Global Environment Facility (GEF). However, in 1997 the Community's budget allocated 4MECU to Community cooperation with the GEF, and the Community has provided funding to a number of initiatives relevant to GEF projects (see e.g *Box 3.13* below).

(1) COM (96) 54 Final

The European Community participates actively in the elaboration of Biosafety Protocol under the CBD and strongly supports its finalisation by the end of 1998.

2 SUMMARY ASSESSMENT OF THE IMPORTANCE AND STATUS OF BIODIVERSITY IN THE EUROPEAN COMMUNITY

2.1 IN SITU BIOTIC ASSETS

2.1.1 Natural factors determining the biodiversity of the European Community

The European Community is home to a rich diversity of life forms. This biodiversity has been shaped by several biogeographyc and geophysical factors. The most important can be identified as the following.

- *Geography:* the latitude range of the 'continental area', as well as islands and archipelagos of the Mediterranean and Macaronesian regions is 36°-71°N, longitude 10°W-30°E. It is situated in the Western part of the Eurasian continent and holds part of the characteristic flora and fauna of the Western Paleartic;

- *Morphology:* giving rise to specific land form characteristics such as:
  - the ancient rocks of the Fennoscandian shield and Caledonian range (from Ireland to Sweden);
  - the North European plain from France to Finland;
  - Southern and central mountain ranges: Sierra Nevada, Pyrenees, Alps, Apennines; and
  - the Mediterranean littoral zone.

- *Glaciation* during a period until 10000 years ago which scoured all the North of the land mass, but not the South except major mountain ranges and produced a north-south gradient in the diversity of flora and fauna; and

- The *influence of the Atlantic Ocean* and its warming Gulf Stream current that gives unusually mild and wet weather conditions for its latitude.

These four factors have given rise to the diversity of climates, soils, topography and drainage which determine the natural flora and fauna of the European Community. Frequent variations in altitude, climate and soils over small distances have enhanced biodiversity and the evolution of endemic species.

2.1.2 Ecosystems, habitats and species

Ecosystems

The natural ecosystems of the European Community range from the warm dry grasslands of the Mediterranean zone to the cool humid bogs of the north Atlantic seaboard and boreal taiga; from Alpine screes and meadows to the alluvial valley forests of large lowland rivers; from precipitous sea cliffs to sand dunes and shallow coastal lagoons. The Community also includes several important island groups and mountain ranges sufficiently isolated to permit the evolution of endemic species and the development of unique habitat types.

Examples of 'natural' ecosystems within the Community are extremely rare (or may even be considered to be non-existent, once the effects of remote human influences such as airborne pollution are considered). Natural ecosystems have been modified to varying extents by the activities of man, and the resulting semi-natural (man-modified) ecosystems themselves add to the biodiversity found in any particular area of the Community. The maintenance of many of these ecosystems has intrinsic value for biodiversity and depends on continued human input and management.

A number of dependent territories also fall within the European Community. Many of them (e.g. the French Départements et Territoires Outre-Mer) are home to a wide range of ecosystems and species that are totally different to those of the rest of the European Community. For example, the biodiversity of the Pacific islands and Atolls of French Polynesia and New Caledonia is of global significance, and substantially more diverse than that of most of Europe.

Habitats

A number of distinctive ecosystems can be found within the European Community. These can be subdivided into habitat types according to climate, soils, drainage and dominant vegetation as shown below in *Table 2.1*.

Table 2.1 Major European Ecosystem Types

Ecosystem	Major habitats
Marine	Intertidal zone (rocky shores, sedimentary shores), deep water, sea bed
Coastal	Sand dunes, shingle banks, saltmarshes, cliffs
Freshwater	Rivers and streams, lakes and ponds, water-fringing vegetation
Wetland	Bogs, marshes, lagoons
Grassland	Dry, humid, eutrophic and alpine grasslands
Heath and scrub	Heathlands, scrub vegetation
Woodland	Deciduous broadleaved, evergreen broadleaved, coniferous
Inland sparsely vegetated	Screes, inland rocky surfaces, volcanic features, glaciers, caves
Arable	Cultivated ground
Artificial	Human settlements, industrial sites, transport networks

Source: European Environmental Agency

All 10 major ecosystem types are widely distributed throughout Europe. Many of the most vulnerable of the habitat types into which these ecosystems may be divided, such as Mediterranean coastal dunes, dry heaths, active raised bogs and Macaronesian laurel forests, have been listed in Annex I of the European Community's Habitats Directive (which is considered in more detail below in *Part 3*). Member States are under an obligation to include examples of these habitats in the Natura 2000 Network created under the Directive. They are also required under the terms of the Directive to encourage the manage of features of the landscape which are of major importance for wild fauna and flora.

Assessment of biodiversity has usually been undertaken on the basis of national borders, which often have limited relevance to biodiversity issues. A useful additional tool for the

conservation of habitats and species has been developed with the introduction of the concept of biogeographical and ecological regions based instead on patterns of specificity and composition of land cover and ecosystems. For example, the Natura 2000 network of sites is organised in this way, with six cross-border biogeographical regions covering the Community's territory.

Species

The approximate number of species in each major vertebrate group (other than fish) within the European Environment Agency member countries is shown in *Table 2.2* below by biogeographic region. There are currently no comparable data for fish, invertebrates or vascular plants.

Table 2.2 Number of vertebrate Species occurring in Europe according to taxonomic group and biogeographic region

Group/Region	Mammals	Breeding birds	Reptiles	Amphibians	Total
Macaronesian	23	52	?	?	?
Boreal	81	300	7	15	403
Alpine	128	380	71	41	620
Atlantic	93	339	34	32	498
Continental	135	359	77	77	648
Mediterranean	119	321	89	54	583
All Europe	281	506	123	78	988

Source: European Environmental Agency

Species richness (the number of species within an area) varies considerably geographically as a result of underlying physical factors (such as latitude and climate), habitat type and the impacts of man's activities. Latitude is particularly important since, at global scale, species diversity tends to decrease towards the poles. In general the most structurally diverse habitats also tend to hold the largest numbers of animal species, such as birds. However, numbers of individuals of the species present in a habitat do not necessarily show the same tendencies; for example in arctic regions a few species may be super-abundant. Historic factors can also have an important influence on the distributions of species. This is particularly true with plants, as a result of the effects of glaciation.

The occurrence of endemic species (those restricted to a particular area) is particularly important since regions holding these have a special responsibility for their global conservation. There are some 3,500 plant species that are endemic to Europe. Recent studies have defined 24 centres of plant diversity and endemic species in Europe, mostly within the Mediterranean basin and adjacent mountain ranges which escaped the glaciation processes which denuded the Northern part of the continent of most of its flora. In contrast the floras of the great Southern peninsulas of Iberia, Italy and the Balkans were enriched as plants migrated southwards, and these areas acted as refuges for species needing warm conditions. When the climate improved it appears that many of the species did not expand their distributions but remained confined to their glacial refuges.

Although there are limited data on the occurrence of endemic species in invertebrates, levels are thought to be high. In contrast, levels of endemism of higher more mobile animals in Europe are generally low when viewed in a global context. For example, only one area in the Community (Madeira / Canary Islands) has been found to hold two or more endemic species of birds with a range of less than 50,000 km^2. On a larger scale, however, the Mediterranean basin as a whole is a major centre for endemic species of fish and reptiles.

Endemic species are not necessarily threatened, unless the habitats in their limited ranges are under threat. Lists of threatened species ('red lists') have been developed in most Member States. Criteria for the identification of threat categories have been developed globally by IUCN - the World Conservation Union. The threat categories are: extinct; critically endangered; endangered; and vulnerable. Lists of vertebrates and plants which are considered to be threatened at a European level are currently being compiled by the World Conservation Monitoring Centre (WCMC) under a contract with the Council of Europe (CoE) and the European Environmental Agency, and an overview is set out in *Table 2.3* below. More than half of the critically endangered species are fish, of which the majority are endemic to Europe.

The European Community's Birds and Habitats Directives aim to improve the protection of the threatened species included in their Annexes, but there are some differences between these species lists and the red lists. These differences are a result of the different selection criteria used and poorer knowledge of species' status at the time when the Directives were established than exists today. However, Annexes to the Directives can be updated in view of the best scientific information available.

Conservation of declining species in the wider countryside which have not yet reached 'threatened' status is also widely recognised as a need. These are generally termed 'Species of European Conservation Concern' (SPECs). For birds, SPECs have been identified objectively by BirdLife International using criteria of population distribution and status.

Table 2.3 Globally Threatened species in Europe

Threat category				**Total threatened species**		
Vertebrate group	Critically endangered	Endangered	Vulnerable	Endemic to Europe	Non-endemic	Total
Mammals	3	5	36	28	16	44
Birds	1	0	16	5	12	17
Reptiles	6	9	9	17	7	24
Amphibians	2	1	7	10	0	10
Freshwater fish	14	18	45	70	7	77
Total	**26**	**33**	**113**	**130**	**42**	**172**

Source: European Environmental Agency and Council of Europe

2.1.3 Pressures on biodiversity

Pressures on Biodiversity in the European Community

The worldwide perception that pressures and threats to biodiversity have accelerated in the second half of the twentieth century was one of the major stimuli to the adoption of the Biodiversity Convention. In the European Community these threats can be categorised as 'global' cross-sectoral issues which are likely to affect most or all ecosystems, and 'sectoral' issues.

'Global' issues include climate change caused by increasing greenhouse gases, depletion of the stratospheric ozone layer, acidification due to air emissions, water and airborne eutrophication, the exploitation of wild species, and the introduction of non-native species and varieties.

In relation to 'sectoral' issues, the interplay between particular economic sectors and individual ecosystems is usually analysed through the so-called 'DPSIR' framework (Driving forces; Pressures; States; Impacts; Responses) which is predicated on a linear relationship between human activities and environmental effects.

Table 2.4 below summarises the sectoral pressures on European ecosystems.

Pressures on Biodiversity in Third Countries

There is a complex interplay between ecosystems in countries outside the European Community and some Community policies. For example, changing patterns of trade in key agricultural commodities can impact on patterns of land use and their associated species and habitats. Marginal, sustainably managed habitats may be transformed to intensive agricultural commodity production in response to reductions in international market prices that are driven by export subsidies. In other cases, removal of preferential trade arrangements with Developing Countries (for example in the framework of the Lomé Agreement) also has the potential to lead to biodiversity losses when pressure to compete in global markets leads to agricultural intensification, potentially forcing small developing country farmers to adopt practices at odds with conservation and sustainable use of biodiversity.

The role of the Community in providing funding for projects that bring biodiversity benefits to third countries is considered further below in *Part 3*.

Table 2.4 Summary of Driving Forces and Pressures Affecting Biodiversity in Europe

Sector **Ecosystem**	**Agriculture**	**Forestry**	**Fisheries**	**Regional policies**	**Transport and energy**	**Tourism**
All ecosystems	• Intensification • Displacement of traditional practices • Loss of indigenous varieties and breeds	• Reduction in natural and semi-natural forest cover and in forest diversity		• Lack of sustainable development of land use	• Habitat fragmentation • Increasing greenhouse gases due to emissions from fossil fuels	• Land take • Excessive water abstraction • Disturbance • Conflicts
Marine and coastal	• Eutrophication • Drainage of saltmarshes	• Afforestation of coastal dunes	• Overfishing • Damage to benthic habitats • Aquacultural pollution, disturbance, habitat and genetic modification	• Uncontrolled urban and industrial development • sea defences • untreated sewage discharge	• Pollution due to shipping and marine accidents • discharge of bunker fuels	• Disturbance of sensitive ecosystems (dunes, wetlands) • Land take for infrastructure, hotels and second homes • Pollutant emissions • Sewage • Excessive water abstraction

Sector Ecosystem	Agriculture	Forestry	Fisheries	Regional policies	Transport and energy	Tourism
Freshwater	• Eutrophication • Pesticide residues • Excess water abstraction • Pesticide drift to waterside habitats	• Soil erosion following forest clearance • Acidification affecting aquatic ecosystems	• Overfishing • Damage to benthic habitats • Aquacultural pollution, disturbance, habitat and genetic modification	• Excessive ground and surface water abstraction • Pollution from leaching from landfill to contaminated sites	• River channel management • Dams • Warming by power stations • Acidification	• Conflicting uses, e.g. inland water bodies disturbance • Excessive abstraction
Wetland	• Drainage • Eutrophication • Loss of rotations and semi natural habitats	• Drainage • Afforestation	• Aquacultural pollution, disturbance, habitat and genetic modification	• Excessive ground and surface water abstraction • Drainage for development	• River channel management • Tidal barrages • Drainage leading to drying out	• Excess water abstraction • Drainage • Disturbance

Sector Ecosystem	Agriculture	Forestry	Fisheries	Regional policies	Transport and energy	Tourism
Grassland, heath and scrub	• Conversion to arable • Abandonment of extensive practices • Loss of semi-natural habitats • Over or under grazing	• Afforestation • Encroachment through natural regeneration		• Land take for infrastructure development • Fragmentation	• Fragmentation • Disturbance (e.g. windfarms) • Loss of habitats (e.g. peat abstraction)	• Heathland fires • Development and disturbance in montane areas
Woodland	• Overgrazing • Neglect of small woodlands	• Logging old-growth forests • Management intensification • Exotic species		As above	• Fragmentation • Acidification	• Forest fires • Disturbance, e.g. motor rallies, mountain biking etc.

Sector Ecosystem	Agriculture	Forestry	Fisheries	Regional policies	Transport and energy	Tourism
Arable	• Pesticides • Conversion to monocultures • Loss of marginal features • Change in management practices (e.g. autumn ploughing, stubble burning)	• encroachment by invasive species		• Land take for infrastructure development	• Conversion to biofuel monocultures • Acidification	

Sources: Various, including European Environment Agency and BirdLife International, Habitats for Birds in Europe, 1997

2.2 EX SITU BIOTIC ASSETS

In a 1996 survey of activities being undertaken by Member States to implement the Biodiversity Convention, twelve of the fifteen Member States reported that their national plans included measures concerning *ex situ* conservation.(1)

The Community's Member States house extensive *ex situ* collections of species originating both from within the country's own borders and elsewhere, in seed banks, gene banks, botanic gardens and zoos. For certain plants, seed banks provide the possibility for *ex situ* conservation of species, subspecies and cultivated varieties complementary to efforts for *in situ* conservation.

The nearly 350 European Botanic Gardens have hundreds of years of experience in the study and description of the plant world, and they have valuable libraries, herbaria, palynological and carpodial collections, plant fossils collections and ethnobotanical museums regarding the Europen flora and the plant heritage from other regions of the world. More than 80,000 species are conserved in these botanic gardens. Their herbaria keep over 40 million specimens from all over the world. Most of the type specimens that were used to describe the plant species for the first time are kept in the herbaria of the European Botanic Gardens. About a hundred germplasm banks conserve important collections not only of wild flora, but also of specimens of agricultural interest. Importantly, botanic gardens maintain six European plant species which are now extinct in the wild, and about a hundred germplasm banks conserve important collections not only of wild flora, but also of specimens of agricultural interest.

Many European botanic gardens are important research centres. They carry out studies not only on plant taxonomy and on species biology, but also on many different applied fields: medicinal and aromatic plants, alternative crops, recovery of traditional techniques and uses. Moreover because of their increasing involvement in biodiversity conservation, the European botanic gardens have become important centres for *ex situ* conservation and integrated conservation (*ex situ-in situ* techniques). These include research projects that encourage their collaboration with local, regional and national authorities for the management and conservation of endangered species.

In 1994, a European Botanic Gardens Consortium was established to facilitate cooperation and the development of botanic gardens within Europe through a European Botanic Gardens Action Plan.

Vital conservation activities are also undertaken by European Community zoos. Many have breeding programmes for threatened species both for the preservation of the gene pool and often (if their habitats survive or can be recreated) for eventual release back to their natural range.

(1) The Convention on Biological Diversity: Survey and Workshop on Follow-up Activities in the EEA Member Countires During 1996, EEA, 1997

3 ACTION TO DATE

3.1 INTRODUCTION

This Chapter reports on European Community initiatives undertaken to date that are relevant to implementation of the Biodiversity Convention. For the purposes of this report, action to date is divided into four horizontal 'themes' and eight 'sectors' or policy areas relavant to the implementation of the Biodiversity Convention.

The horizontal themes are:

- conservation and sustainable use of biodiversity;
- sharing of benefits arising out of the utilisation of genetic resources;
- research, identification, monitoring and exchange of information; and
- education, training and awareness.

The eight 'sectors' or policy areas are:

- conservation of natural resources;
- agriculture;
- forestry;
- fisheries;
- regional policies and spatial planning;
- transport and energy;
- tourism; and
- development and economic cooperation.

However, many of the initiatives mentioned are relevant to more than one theme or policy area.

The Community actively pursues a policy of ensuring that environmental protection requirements are integrated into the definition and implementation of other Community policies. The Amsterdam Treaty will strengthen the existing integration requirement in the Treaty of Rome (see Annex A).

The Community has already taken a number of steps to ensure the integration of conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. Integration is a key theme of the Fifth Environmental Action Programme.

In 1996 the Commission committed itself to pursue practical steps to improve the integration of the environment in new and existing policy and action and in July 1997, the European Commission adopted measures to improve and reinforce its internal procedures to ensure a better integration of environmental considerations in its policy-making and management. The measures adopted are highlighted in *Box 3.1* below. Since their adoption of these measures, the Commission has carried out an analysis of progress to date on the 'greening' of the Community budget in five policy areas (agriculture, social and economic cohesion, transport, energy and research and technological development) representing together nearly 90% of the Community budget.

Box 3.1 Commission commitments to integrate the environment in policy-making

- *environmental appraisals:* all policy proposals will be evaluated by Directorates-General at an early stage in their development and where the appraisal shows that a proposal is likely to have a significant impact on the environment, the environmental consequences will be assessed in more detail;
- *sectoral policy statements:* each Directorate-General will draw up its own policy statement on the environment and sustainable development stating where and how it will achieve integration of environmental considerations into its policies. Plans will be updated on a regular basis;
- *reporting*: the Commission will regularly review progress on integration and the implementation of measures and improve the information it provides on integration in the General Report of the Commission;
- *green stars in the Commission Work Programme:* green stars attributed to legislative proposals in the Commission Work Programme will indicate where a detailed assessment of environmental consequences is required;
- *environmental integration correspondents:* each Directorate-General will nominate a senior official responsible for ensuring that policy proposals take account of the environment and of the need to contribute towards sustainable patterns of development;
- *greening the budget*: the Commission will analyse the effects on the environment of Community funding; consider the preparation of a report on how it could green the budget in areas where this has not yet taken place and ensure that the necessary structures are in place to achieve the objectives of greening the budget;
- *green housekeeping:* the Commission will accelerate its efforts to apply the highest standards of environmental care in its administrative policies; and
- *training:* particular efforts will be made to develop training programmes for Commission staff on environmental appraisal and on integration.

3.2 PROGRESS REVIEW OF THE FIFTH ENVIRONMENTAL ACTION PROGRAMME

In 1996, the Commission published a progress review of the Fifth Environmental Action Programme(1) (outlined above at Section 1.3), following consultations with Member States and a contribution from the European Environment Agency in the form of the 1995 State of the Environment Report.

Analysis of the current situation and trends and their relationship with the main objectives set for each of the main environmental themes led to the conclusion that the overall strategy and objectives of the fifth programme remain valid; what is lacking are the attitude changes and the will to make the quantum leap necessary to progress towards sustainability.

The report identifies key priority actions needed to ensure that the process is given a much greater impulsion. It identifies, above all, the need to set priorities, as well as the need to develop indicators to allow progress to be measured and, especially, the need to ensure a better integration of environmental policy requirements into other policy areas in line with the Treaty. A number of general trends are identified which are particularly relevant to biodiversity.

- Integration of environmental considerations into the different target sectors has made progress but at varying speeds. Integration is generally most advanced in the manufacturing sector. It is least apparent in agriculture and tourism. In

(1)Towards Sustainability: the European Commission's progress report and action plan on the fifth programme of policy and action in relation to the environment and sustainable development, 1997

particular, the link between 'nature' legislation (Habitats and Birds Directives) and Common Agricultural Policies (CAP) remains inadequate. In relation to tourism, whilst there is progress in the protection of habitats and landscapes of particular significance to tourism, it is by no means clear how successful such efforts will prove to be. Trends indicate continued growth in air and road transport as well as in tourism activities, signifying increased strain on the environment. Implementation by Member States of existing policies with respect to the environmental impact of tourism appears to have had little effect on total tourist numbers or the surface area that they use;

- In relation to the specific themes of the programme, there has been progress in the right direction in a number of areas, including reduction of ozone depleting substances and improvements in approaches to nature protection, surface water quality, industry-related risks and waste. Particular attention now needs to be paid to developing improved approaches to climate change and acidification, urban issues including air quality, noise and waste, together with a comprehensive strategy for ground water and surface water resources. On protection of nature the report notes that legislation is not yet fully operational and delays are occurring;

- Whilst there have been improvements in ensuring better integration of environmental considerations into the use of the Community's financial support mechanisms, there is a continuing need to improve the evaluation of the impact of such funding to avoid unsustainable approaches; and

- There has been some progress in integrating environmental and sustainable development considerations into the whole range of EU research and technological development policy and actions. This has been achieved through the Environment and Climate research programme as well as by the Marine Science and Technology programmes in what concerns the EU and by the International Co-operation Programme in relation to Central and Eastern European Countries and Developing Countries (see Section 3.3.4). However, more needs to be done to strengthen linkages between environment and research policies.

The progress report was accompanied by a proposal for a Parliament and Council Decision on the priorities for the rest of the decade. Moreover, work is currently under way to develop a new action plan which reinforces existing commitments and addresses the weaknesses identified in the review of the Fifth Environmental Action Programme. It is proposed that the new action plan will set priorities to the year 2000 and take the form of a legally binding Council Decision. Possible directions for the Decision are considered further in *Part 4* below.

3.3 HORIZONTAL INSTRUMENTS AND INITIATIVES

3.3.1 Introduction

This *Section* identifies key 'horizontal' instruments and initiatives relevant to implementation of the Biodiversity Convention that have been undertaken by the Community to date. They are divided into four overlapping themes:

- conservation and sustainable use of biodiversity;
- sharing of benefits arising out of the utilisation of genetic resources;

- research, identification, monitoring and exchange of information;
- education, training and awareness.

3.3.2 Conservation and sustainable use of biodiversity

In Situ Conservation

In situ conservation is addressed by a number of Community measures and initiatives that target both conservation of habitats and species, and the biodiversity impacts of particular processes. Many of these measures are considered in more detail elsewhere in this report. There are strong links between measures for *in situ* conservation and those addressing sustainable use of the components of biological diversity.

The principal Community instruments for *in situ* conservation are the Birds Directive and the later Habitats Directive (see *Section 3.4.1*) whose implementation is in part supported by the financial mechanism LIFE Nature. In addition, many regional programmes assisted by the Community's Structural Funds (see *Section 3.4.8)* include projects relevant to *in situ* conservation, and the controls of the CITES Regulation (938/97/EC - see above in *Section 3.5),* on intra-Community trade also have a role to play by complementing other measures for *in situ* conservation . In the context of the Common Agricultural Policy, the agri-environmental measures too have an important role to play in support of *in situ* conservation.

The European Community has adopted protective measures on alien species, including through import controls envisaged in the CITES Regulation and protective measures against the introduction into the Community of organisms harmful to plant or plant products and against their spread within the Community (Council Directive 77/93/EEC of 21 December 1976 as amended). For Community products, the concept of plant health inspection at the place of production has been implemented and a 'plant passport' system has been introduced. In 1992, the Commission established a Community Plant Health Inspectorate to monitor and assist national inspectorates.

Specific measures have also been adopted to address the biodiversity-related risks associated with the use and release of genetically modified organisms - both in the horizontal and vertical legislation of the Community. Sectoral legislation has been adopted for novel foods, pharmaceutical products and additives in feedstuff. As regards horizontal legislation, Council Directive 90/219/EEC of 23 April 1990 on the contained use of genetically modified micro-organisms (as amended) applies internationally recognised procedures to the use of genetically modified micro-organisms in research laboratories and industrial facilities. The Directive classifies micro-organisms according to potential risk and lays down containment and control measures. A sister Directive, Council Directive 90/220/EEC (as amended) requires prior notification of the deliberate release of genetically modified organisms for field trials as well as for placing on the market of products containing or consisting of genetically modified organisms.

Both Directives are currently the subject of a comprehensive review which is designed to take account of developments in scientific knowledge about and practical experience with genetically modified organisms. The administrative procedures and guidance under both Directives are being considered. In particular, the review of Directive

90/219/EEC aims to bring classification of genetically modified micro-organisms into line with gained experience as well as international practice allowing to better differentiate administrative requirements to the actual risks involved(1). The review of Directive 90/220/EEC aims to improve the transparency and efficiency of the decision making process. In addition, the issue of labelling will be addressed to respond to a strong call from the European consumer.

The vertical legislation of the Community in the field of genetically modified organisms i.a. consists of legislation in the field of feedingstuff[2], medicinal products for human and veterinary use[3] and novel food.[4]

In the context of ongoing discussions on the elaboration of a Protocol on Biosafety under the Biodiversity Convention, the Community's position is to focus on the transboundary movement of Living Modified Organisms resulting from modern biotechnology which might have an adverse effect on the conservation and sustainable use of biodiversity, taking also into account the risks to human health.

Ex Situ Conservation

In the case of some threatened wild species, gene banks, captive breeding centres, zoos and botanical gardens can play a very valuable role if their activities are integrated in the framework of co-ordinated reintroduction or integrated conservation schemes.

Under these circumstances, e*x situ* can sometimes be the best, and often the only, way of assuring survival of particular germplasm. To achieve this, it is essential to ensure the maintenance of adequate gene banks within the Community. In general, the level of safety duplication of collections in Europe is difficult to judge. Much of the material, particularly in some of the Eastern European collections, is advanced cultivars which are common to many genebanks. However, only a few programmes have, as yet, identified unique holdings and ensured their safety duplication. This means that important accessions are at some risk. Rationalisation and safety duplication is a matter of priority. There is also some concern over the fate of germplasm material which is no longer of direct interest to breeders.

In support of the need to take measures to conserve, characterise and utilise agricultural plant and animal genetic resources, the Community in 1994 adopted Council Regulation 1467/94 on conservation, collection and utilisation of genetic resources in agriculture, including forestry (see *Section 3.4.2.2*). Therefore, the Community is able to support *ex situ* conservation through a number of its funding and development cooperation programmes as well as projects financed under Regulation 1467/94. Fundamental research for improving *ex situ* conservation is also supported under the biotechnology programme of the Fourth Research Framework Programme (see *Section 3.3.6*).

(1) Proposal for a Council Directive amending Directive 90/219/EEC on the contained use of GMOs (COM (95) 640 final)

(1) [2] Council Directive 93/114/EEC of 14 December 1993 amending directive 70/524/EEC concerning the additives in feedstuff

(2) [3] Council Regulation 2309/93/EEC of 22 July 1993 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing the European Agency for the Evaluation of Medicinal products.

(3) [4] Regulation 258/97 of the European Parliament and of the Council of 27 January 1997 concerning novel foods and novel food ingredients

Sustainable Use of components of biodiversity

A number of human activities may potentially impact on the conservation and sustainable use of biodiversity. Impacts can be positive or negative, direct or indirect. Important instruments to ensure sustainability include:

- environmental assessment procedures;
- instruments targeting patterns of production and consumption, which are at the heart of the sustainable use of biological resources; and
- economic and social incentives.

Environmental Assessment Procedures

A starting point in promoting sustainable use of the components of biodiversity lies with measures that enable projects with potential negative impacts to be identified so that consideration can be given to alternatives that avoid or at least minimise negative impacts.

To this end, the Directive on Environmental Impact Assessment of Actions (Council Directive 85/337) has a particularly important role to play. It stipulates that before certain projects can be undertaken, the developer must undertake an assessment of its impact on human beings, flora and fauna, soil, water, air, climate and the landscape and on how these factors interact.

A 1993 review of the Directive concluded that the full potential of the EIA system was not being recognised and in 1997 proposals were adopted to strengthen the 1985 Directive (Council Directive 97/11/EC) and to better integrate environmental considerations into the development consent process.

It has been recognised that the EIA Directive is inherently limited in that it only applies to the project level of decision-making. Assessment of the biodiversity impact of policies, programmes and plans can also help to promote sustainable use. In December 1996 the Commission adopted a proposal for a Strategic Environmental Assessment Directive which will require a strategic level environmental assessment to be carried out before land use plans and programmes are adopted. The cumulative and synergistic environmental impact of small but numerous projects will also be taken into account.

In 1997, the Commission announced that all its own policy proposals will be evaluated by Directorates General at an early stage in their development and where the appraisal shows that a proposal is likely to have a significant impact on the environment, the environmental consequences will be assessed in more details.

Targeting patterns of production and consumption

A large proportion of the Community's environmental legislation addresses the environmental impacts of the production process; both by setting limits and overall frameworks for the control of emissions and waste (e.g. through Directive 96/61/EC on integrated pollution prevention and control) and by encouraging good environmental management practices (in particular through Council Regulation 1836/93 allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme - the EMAS Regulation).

Other community initiatives that address the impacts of production and consumption on biodiversity include:

- measures that contribute to internalising the biodiversity costs of production and consumption; and
- labelling and certification schemes to promote sustainable consumption.

The environment and energy components of the Community's Fourth Research Framework Programme have been used to develop methods for the monetary valuation of environmental damage. The work has concentrated on quantifying environmental costs relating to the energy and transport sectors. In addition, in the context of the Helsinki process and the Environment for Europe process (as to which seek *Section 3.4.3.3*), the EC participates in ongoing work to develop a common Work Programme on the Conservation and Enhancement of Biological and Landscape Diversity in Forest Ecosystems which calls for assessment of methodologies for valuing biological diversity of forests.

In 1993, the Commission published a Green Paper on Remedying Environmental Damage, aimed at stimulating an EU-wide discussion. A number of public hearings and conferences were organised on the subject. A White Paper on Community Action as regards environmental liability was elaborated early in 1997 (1) to further the debate on this topic.

In an increasingly liberalised economy, the choices and behaviour of consumers can provide a key driving force towards sustainability. The Community has begun a process of developing existing instruments and promoting new schemes to ensure that well-informed consumers can take personal decisions benefiting the conservation and sustainable use of biodiversity.

In this field, legislation on quality labels contributes to biodiversity. Organic farming is supported by the certification system established by Regulation 2092/91/EEC. Also Regulation 2081/92/EEC protects geographical indications and designations of origin for agricultural products and foodstuffs and Regulation 2082/92/EEC establishes a scheme of certificates of specific character for agricultural products and foodstuffs. This Regulation provides for the Commission to set up and administer a register of certificates of specific character listing the names of recognised agricultural products and foodstuffs. Eligible products or foodstuffs must either be produced using traditional raw materials or be characterised by a traditional composition or a mode of production and/or processing reflecting traditional types of production and/or processing. Only groups are entitled to apply.

In 1992, the Community adopted Council Regulation EEC/880/92 on a Community eco-label award scheme. The Eco-label award scheme promotes products which have a reduced environmental impact over their entire life cycle (production, use and disposal) by creating the conditions for the introduction of a single environmental label in the Community. Whilst the European eco-labelling scheme does not apply to food, drink or pharmaceuticals, it has the potential to contribute positively to sustainable use of

(1) PV(97)1324/3

genetic resources by setting criteria for application to products whose production, distribution, use and disposal could affect biodiversity.

The setting of eco-labelling criteria is gathering pace, but the visibility of the eco-label on the European market is still low. By early 1997, criteria had been agreed for more than 12 product groups and by August 1997 182 products had received eco-labels. The Commission is now beginning to concentrate efforts on promoting the eco-label to consumers, retailers and manufacturers.

In 1996, the Commission proposed revisions to the European Eco-label scheme under which environmental criteria for granting the right to use the label would be decided by a European Eco-Label Organisation, a new independent organisation which would provide an umbrella for a network of national 'competent bodies'.

In 1996, the Commission committed itself to making the promotion of sustainable consumption patterns one of the priorities of its consumer policy for the period 1996-98. A coherent plan of actions to promote sustainable consumption patterns throughout the European Community is being developed. Information campaigns to improve public awareness of sustainable consumption issues in southern European Member States are under way and a study on green claims has recently been launched. Project finance for NGO activities to promote sustainable consumption in a number of Member States has been ongoing.

Economic and Social Incentives

Economic and social incentives may have positive or negative and direct or indirect effects on the patterns of use and consumption of biodiversity. They may also have an effect on the management of natural resources that constitute an essential element in the habitat or the ecosystem of components of biodiversity. The Community has adopted a number of measures that provide incentives to support conservation and sustainable use of biodiversity in the context of the common agricultural policy (see *Section 3.4.2*).

3.3.3 Equitable sharing of benefits arising out of the utilisation of genetic resources

Sharing of benefits arising out of the utilisation of genetic resources under the Biodiversity Convention is related to three core elements of the Convention:

- access to genetic resources and distribution of the benefits of biotechnology;
- transfer of technology; and
- technical and scientific co-operation (considered further in *Section 3.4.4* below).

In relation to plant genetic resources for food and agriculture, the European Community supports the establishment of an effective and transparent multilateral system to facilitate access to plant genetic resources for food and agriculture, and to share in a fair and equitable way the benefits arising from the utilisation of these resources, including *inter alia*, the transfer of technology, capacity-building, exchange of information and funding, through the revision of the FAO International Undertaking on plant genetic resources for food and agriculture.

In 1995, the Commission commissioned a study on practical steps that could be taken to implement Articles 15 and 16 of the Biodiversity Convention, without prejudice to the

final position of the Community on this subject. The results of the study were widely distributed, including at the Third Meeting of the Conference of the Parties in 1996.

In the field of intellectual property rights, the Community has implemented a plant variety rights regime through Council Regulation (EC) 2100/94 on Community plant variety rights. The Regulation allows for compulsory licensing by the Community Plant Variety Office on grounds of public interest.

The Community is also in the process of elaborating a directive on the legal protection of biotechnological inventions which will take into account the obligations of the Community under the Biodiversity Convention. By providing a well-defined framework for harmonising the national laws and practices of Member States, the Directive seeks to remove differences which act as barriers to trade, and thus encourage investment in biotechnology development. Member States will required to bring into force laws necessary to comply with the Directive within two years of its publication in the Official Journal of the European Communities.

The proposed directive, in its current form, takes into account amendments adopted by the European Parliament in July 1997. The amendments reflect the need to (a) clarify the difference between discoveries and inventions where the patentability of elements of human origin is concerned and (b) to introduce the ethical dimension of biotechnological inventions. The cloning of human beings is outlawed as is any form of manipulation of germ line genetic identity, and particular uses of human embryos are not eligible for patenting. In December 1997, the Commission adopted a new remit for its European Group on Ethics in Science and New Technologies (formerly, the Group of Advisers on the Ethical Implications of Biotechnology). The Group will assess all ethical aspects of biotechnology development.

Community technology transfer programmes have been applied to projects that are potentially relevant to the Biodiversity Community's biodiversity goals. One example is the Innovation Programme [(1)], which is considered in *Box 3.1* below.

(1) Council Decision 94/917/EC of 15 December 1994.

Box 3.1 The Innovation Programme

The Innovation programme was created to encourage the exchange of information on research and technology and the successful commercial application of research results within the EU as well as Iceland, Israel, Liechtenstein and Norway (all of whom contribute financially). European third countries may take part, as may non-European that have a Science and Technology Co-operation Agreement in place with the Community.

The core activity of the Innovation Programme is to provide advisory support and information which helps create a link between the research community and Europe's companies. Innovation provides businesses with like-minded contacts across Europe; access to research results through the CORDIS database; access to external management expertise, patent and intellectual property services; and advice on venture capital in addition to project funding. Project funding is available to transnational consortia to assist in absorption by European companies, especially SMEs, of new technologies, and to close the gap between research and commercialisation.(1)

The Innovation Programme continues activities started under SPRINT (technology transfer) and VALUE II (sharing the benefits of research), and one action line from THERMIE. The most recent evaluation of the Innovation Programme was positive, suggesting a more strategic and influential role for the Programme,(1) in particular through more active involvement in stimulating the diffusion of new technologies.

Commission support for the Programme amounts to 90MECU annually, 10-15% of which is spent on projects with an environmental theme. Recent projects have included biological air filtration to treat odour and air pollution, increasing access to environmental information made available by remote sensing, rehabilitation of water wells, hygienic sludge management for agriculture, river quality management and monitoring, adaptation of agro-ecological computer models from central Europe to southern Europe, and technology to prevent the erosion of coastal zones.

3.3.4 Identification and Monitoring

Identification

Council Regulation 1467/94 on the conservation, characterisation, collection and utilisation of genetic resources in agriculture (discussed in *Section 3.2.2* above) establishes a Community programme for the conservation, characterisation, collection and utilisation of genetic resources in agriculture. The programme includes provision for the creation of a permanent inventory on the state and nature of genetic resources in agriculture collected in the Community and the listing of current work on the conservation, characterisation, collection and utilisation of those genetic resources. The Commission Services have produced a first version of a permanent Inventory of Plant Genetic Resources for Agriculture in Europe, which has recently been updated as a draft second version. A number of the projects funded under the programme envisage characterisation of crop varieties, and one project aims to provide the first steps towards an enriched database of European farm animal genetic resources.

For 14 years, data on sites of major ecological interest have been collected under the programme for the Co-ordination of Information on the Environment, the CORINE Programme. An inventory (the CORINE Biotopes Sites database) based on a selection of sites of major ecological interest in Europe is based at and can be accessed via the

(1) Source: 'INNOVATING', DGXIII, 1995

Institute of Terrestrial Ecology in the UK. Its uses include investigation of the relationships between agriculture and habitat conservation, the development of environmental models and the compilation of data for environmental impact assessments. The database contains information on 7741 sites of major nature conservation importance in 13 EU Member States which cover 13% of the land surface in those countries. Coverage of the database is summarised in *Box 3.2* below.

A 1995 workshop examined lessons learnt from the Biotopes Sites database to assist in the establishment of the planned EEA Information System on Nature in Europe (EUNIS).[(2)] This new project is building on the data provided by CORINE and will assist in the monitoring and implementation of Natura 2000 by Member States. It will cover both general countryside data and information specific to individual sites.

Box 3.2 Coverage of the CORINE Biotopes database

The CORINE Biotopes database has achieved the following level of coverage:

	Records	Species
• mammals	10,000	203
• birds	71,000	616 (species and sub-species)
• amphibians and reptiles	12,000	188
• fish	3,500	404
• invertebrates	10,000	2,845
• plants	112,000	10,000

Of the sites recorded by the database, 20% contain mammals listed in Annex II of the Habitats Directive, 12% contain Annex II amphibians or reptiles, 5% contain Annex II fish, 4% contain Annex II plants and 62% of the sites contain bird species listed in Annex I of the Birds Directive.

45% of the CORINE Biotopes sites are fully protected by national of international legislation and 13% are protected in part.

Source: EEA, 1996

The EEA's European Topic Centre on Nature Conservation is developing a database and information systems on fauna and flora species, and a first report on the system methodology and operation has been produced which will allow data collection to begin. Within the framework of its objective to support the Natura 2000 network as required by the EEA, the European Topic Centre on Nature Conservation has contributed to the development of software to computerise and process the inventories on Sites of Community Importance (with specific data on species and habitat types) provided by all EU Member States under the Habitats Directive. This will also help the Commission in scientific analysis of data for the Community list of future Natura 2000 sites.

(1) Five Year Assessment of the Innovation Programme (Report EU 17600, 1997)

(2) CORINE Biotopes Sites Database Status and Perspectives 1995 (Topic Report 27, EEA 1996)

Monitoring

The Fifth Environmental Action Programme calls for improved information on the state of the environment, appropriate indicators and tolerance capacities to be made available to policy makers as a matter of priority. However, biodiversity data collection and reporting often faces difficulties in terms of standardised definitions, reference information and measurement because it must include new concepts such as regionalisation, landscape ecology, and genetic diversity. For many years the focus of biodiversity reporting dealt with the conservation of threatened or endangered species and habitats (eg red list species and major migrating species). It is now widely recognised that this is insufficent.

A key aspect in the Community strategy of improving biodiversity monitoring is ongoing work to develop a cohesive set of biodiversity indicators. The development of indicators for biodiversity and a pressure index to measure intensity and frequency of threats to protected areas has been included in the multi-annual work programme of the EEA and its network of national focal points and scientific reference centres, EIONET. Eurostat and the European Commmission have recently published the document *Indicators for Sustainable Development* (1) in response to work by the Commission on Sustainable Development, but this has limited coverage of biodiversity indicators.

The EEA's role in monitoring biodiversity through CORINE and EUNIS was noted above. In addition, a key source of information on the Community's biotic assets is the EEA 1995 report *Europe's Environment: The Dobris Assessment* (2) and the first in a series of triennial 'State of the Environment Reports for Europe' (1995). These reports are intended to act as baseline and reference documents for periodic review and updating.

The Dobris report includes an assessment for each basic environmental medium separately (i.e. air, water and soil), as well as in more interrelated functional units (e.g. 'nature and wildlife'). The means by which Europe's environment undergoes change is examined through a focus on the 'pressures' created by human activities. This is coupled with an analysis of twelve environmental problems of European significance, including loss of biodiversity.

The EEA is currently preparing a pan-European update of the 1995 Dobris report, '*Dobris +3*', with similar coverage to the previous report but covering 44 countries. It is due to be presented at the next Conference of European Ministers of the Environment in 1998. The European Topic Centre on Nature Conservation has identified 21 indicators on Nature and Biodiversity. The *Environment in the European Union* report is also being updated. This will provide an integrated analysis of actions and factors concerning the state of the environment throughout the EU up to the year 2010. In addition, the European Topic Centre on Nature Conservation is developing a pressure index to measure the intensity and frequency of threats to protected areas.

The existing FAIR initiative within the Community's Fourth Framework Research Programme is working to identify indicators for monitoring and evaluating forest biodiversity in Europe (see *Section 3.3.5* below). Eurostat has also been contributing to

(1) Indicators for Sustainable Development (Eurostat and CEC, 1997)

(2) Europe's Environment: The Dobris Assessment, edited by D. Stanners adn P. Bourdeau, prepared for the European Environment Agency Task Force, 1995

enhancing Community monitoring and reporting on biodiversity issues in the context of its Pressure Indices Project, which aims to give a comprehensive description of the most important human activities having a negative impact on the environment. The first sixty pressure indicators for ten policy fields have been selected on the basis of surveys among environmental experts (Scientific Advisory Groups) and include 27 indicators for biodiversity. Eurostat has examined linkages between the indicators for loss of biodiversity and other themes. Data gaps have been identified and research is now required in the following areas:

- the loss of genetic resources;
- wetland loss;
- fragmentation of forests;
- fragmentation of landscapes; and
- protected area loss.

In response to growing concerns about forest damage caused by air pollution, the United Nations Economic Commission for Europe (UN/CE) under its Convention on Long-range Transboundary Air Pollution established in 1985 the International Cooperative Programme on the Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests). In 1986 the Member States of the European Union agreed on the European Union Scheme on the Protection of Forests against Atmospheric Pollution. Since then ICP Forests and the European Union have been monitoring forest conditions in close cooperation. Today, 35 European countries (Including all EC Member States), the USA and Canada participate in the common monitoring which comprises both extensive monitoring at the European scale and intensive monitoring on permanent observation plots. The results of the monitoring activities are documented by means of a common reporting system of the European Commission and ICP Forests.

3.3.5 Research and exchange of information

Research

European Community research and technological development (RTD) is carried out within the framework of a series of five year Research Framework Programmes. The current (1994-98) Fourth Research Framework Programme has a total budget of 13,100MECU. The overall research programme involves four main areas of activity:

- *Activity 1:* research, technological development and demonstration programmes;
- *Activity 2:* co-operation with third countries and international organisations;
- *Activity 3:* dissemination and implementation of results;
- *Activity 4:* stimulation of the training and mobility of researchers.

87% of the total funding available has been allocated to programmes within the first activity which is mainly directed at research within Europe. Some 575MECU or 4.4% of the total has been allocated to research with third countries and international organisations.

Activity 1

Sustainable development is a recurring theme of virtually all the activities under the Fourth Research Framework Programme, particularly in the areas of industry, energy

and transport. Biodiversity is the concern mainly of the *Environment and Climate* programme within Activity 1 (research, technological development and demonstration programmes), although biodiversity-related research may also be supported under the Energy and Transport programmes and has also been supported under the following other programmes within Activity 1:

- *biomedicine and health*, which constitutes 2.7% of the budget (358MECU);
- *marine science and technology*, which represents 1.9% of the budget (243MECU) which can support projects that seek to understand marine systems; ensure compatibility between the exploitation and protection of marine resources; and improve ocean monitoring and co-operation on marine issues;
- *'FAIR': agriculture and fisheries*, which amounts to 728MECU (5.6% of the budget) and includes sustainable, environmentally friendly farming and forestry; the application of biotechnology to food materials; and tree breeding;
- *biotechnologies*, which represents 4.5% of the budget (588MECU) and supports projects to develop and validate molecular methods to assess and screen genetic diversity in plants, animals and microbes.

The multi-disciplinary programme *Environment and Climate* receives 907MECU of Commission funding (6.9% of the Programme budget), concentrating on the following areas:

- research into the natural environment, environmental quality and global change (247.75MECU) which seeks to understand the basic mechanisms of natural systems and their impact on resources (water, forests, agriculture, desertification, coastal zones);
- environmental technologies (131.25MECU) which examines environmental risk, monitoring and protection;
- space techniques applied to environmental monitoring and research (107.6MECU) which seeks to develop Europe's remote sensing capability; and
- human dimensions of environmental change (39.4MECU) which looks at the interactions between human activity and the environment to assist in policy formulation.

Some of the Research programme is carried out by the Commission's own Joint Research Centre (JRC) at ISPRA (Italy) which has increased its environmental activities through the development of an Environmental Institute. The Institute plays an important role in research on implementation, updating and adoption of existing legislation and preparation of new legislation, in dissemination of information and in data collection and analysis.

The JRC's Institute for Space Applications has a leading role in remote sensing and in international research on global change. For example, working together with the European Space Agency, the TREES (Tropical Ecosystem Environment Observations by Satellites) project was established in 1990. The project has been implemented through a world-wide network of orbiting satellites, ground stations, forest fieldworkers and scientists, and has contributed to the development of techniques for a global tropical forest inventory; detection and monitoring of active deforestation areas, and a Tropical Forest Information System. A follow up project is now under way to extend the capabilities of the prototype system and make its benefits available to a wider community. The Centre for Earth Observation, a joint initiative of the JRC and DG XII, plays a lead role for the Commission in the G-7 Information Society project on

Environment and Natural Resources Management (ENRM), which is targeting biodiversity as a priority area in developing a virtual global library of environmental data and information.

Under *Environment and Climate*, several initiatives are of particular relevance to the objectives of the Biodiversity Convention such as TERI and the European Working Group on Research and Biodiversity. Research relevant to the objectives of the Biodiversity Convention also includes work dedicated to understanding and combating desertification and forest fire in the Mediterranean area. Moreover, ongoing studies of the impacts of climate change will enable a better understanding of issues relating to agricultural and forest resources.

The purpose of *TERI* is to integrate research along the environmental gradients or transects most representative of European conditions. By concentrating research on a relatively limited number of sites with different ecosystem types, the results can be extrapolated to the European level. Biodiversity is seen as a core element of ecosystem change and is therefore a key feature of most TERI projects.

An *ad hoc European Working Group on Research and Biodiversity* was established in September 1996 within the framework of the Environment and Climate research programme, with a twelve-month mandate to build a research agenda to contribute to the solution of European biodiversity problems.

The work of the group has focused on three exercises:

- responses to a questionnaire which was sent out to 500 key actors;
- a draft research agenda discussed by researchers, end users and other key actors, in parallel with
- a specific brainstorming session with a group of fourteen participants drawn from a variety of backgrounds and institutions.

The working group's report, *Understanding biodiversity: an agenda for research into Biodiversity prepared by the European Working Group on Research and Biodiversity* (EWGRB), identifies areas of consensus on research topics of common concern. These are highlighted in *Box 3.3* below.

Box 3.3 Research Topics of common concern identified by the European Working Group on Research and Biodiversity

There is full agreement on the need to:

- understand better the threats to biodiversity (eg consequences of introduced species and GMOs, effects of bioprospecting, pollution to terrestrial, freshwater and marine environments, agricultural practices and land use change etc);
- be able to put values on biodiversity (incorporating ethical, cultural and other values, improving economic evaluation);
- develop indicators (particularly 'indicator sets' to measure biodiversity at different scales and for the functioning of ecosystems and their production capacity);
- develop monitoring at all levels of biodiversity (particularly species, ecosystem and landscape and the integration of biodiversity information);
- investigate the role of different elements of biodiversity in the major ecosystem processes (particularly soil processes, pollination and herbivory); and
- conserve genetic diversity in wild and domestic species.

Furthermore there was agreement that the sustainable use of biodiversity required further research (eg to develop better methods of conserving wild and domesticated biodiversity within agricultural systems). A constant theme in all exercises was the need to resolve conflicts which may negatively impact on biodiversity. Research [was] recommended to identify the factors which lead to conflicts (such as analysis of the attitudes of various groups to biodiversity) and to identify the most critical conflicts affecting biodiversity from local (e.g. reserve conflicts) to national and international scales.

Source: Understanding Biodiversity, 1997.

Activity 2

Under Activity 2 of the Fourth Research Framework Programme, the *International Co-operation* (INCO) programme adds value to Community RTD activities through targeted co-operation with other countries, contributing to the realisation of the conservation, sustainable use and benefit sharing objectives of the Biodiversity Convention. The programme seeks to avoid duplication at the international level. The programme targets biodiversity conservation in two different but complementary ways:

- it supports joint research projects with Developing Countries on methodologies to assess and conserve biodiversity *in situ*, including techniques aimed at farmed plants and livestock; and
- it supports joint research on biodiversity-rich ecosystems such as tropical forests, wetlands and coastal zones, focusing on sustainable multi-purpose management and the search for higher economic output from multi-sectoral uses.

A sizeable volume of activity has been carried out in the first two years of the INCO Programme, particularly in relation to biodiversity issues of relevance to Developing Countries. A total of 81 joint research projects and concerted actions as well as numerous accompanying measures (workshops, seminars, scientific conferences and information tools) were financially supported during 1996 and 1997. The EC contribution to these activities, estimated at half their real cost, amounted to approximately 50 MECU. Additional support, from the funding of contracts selected out of the 1997 International Call for Proposals, is expected to add another 15 to 20 MECU.

The 81 joint research contracts and concerted actions already funded concern the

'Sustainable Management of Renewable Natural Resources' (34 contracts in ecosystem management and policy research) and the 'Agricultural Development' thematic area (47 contracts in the crop, livestock and fish sub-sectors). Each joint research contract involves scientific consortia with an average of three partners in different EU countries and three partners in Developing Countries, often sharing similar regional problems. This means the active involvement in research of more than four hundred research groups and institutions world wide reflecting the fact that each year, proposals are received from around 250 EU-Developing Country consortia - a mobilisation of 1500 independent scientific groups and institutions.

Box 3.4 INCO Developing Country Joint Research Contracts

Projects in natural resource management:

- 7 projects on Coastal Zones, e.g. *Damage of Coral Reefs by recreational activities: Restoration strategies and the development of Novel Markers for Environmental Stress;*
- 10 projects in Drylands, e.g. *Restoration of Degraded Nama Karoo: the role of Conservation Islands;*
- 3 projects in Freshwater Wetlands, e.g. *Ecological Bases for the Sustainable Managment of Flooded Tropical Ecosystems: case studies in the Llanos (Venezuela) and Pantanal (Brazil);*
- 8 projects on Tropical Forests, e.g. *Assessment and Levels and Dynamics of Intra-Specific Genetic Diversity of Tropical Trees for Conservation and Sustainable Management;*
- 6 projects in policy research, e.g. *Impacts of Land Use Policy on Environment, Wildlife, Demographic and Soci-Economic Indicators in East African Savannas: The Serengeti Ecological Unit*

Projects in agriculture:

- 30 projects in Crops including plantation trees, e.g. *Biodiversity Audit, Propagation and Sustainable Exploitation of Cedars in the Mediterranean area;*
- 5 projects in Livestock, e.g. *Sustainable Production of Natural Resources and Management of Ecosystems: the potential of South America Camelid breeding in the Andean Region;*
- 12 projects in Aquatic Living Resources, e.g. *Impacts of Environmental Forcing on Marine Biodiversity and Sustainable Management of Artisanal and Industrial Fisheries in the Gulf of Guinea*

Scientific and Technological Co-operation and its underlying notion of scientific partnership has also been selected as a key driving concept in the implementation of the ACP-EU Fisheries Research Initiative, promoted through a Resolution by the Joint Assembly of the Lomé Convention and presently being implemented. It also contributes to the spirit of the recently created European Initiative on Agricultural Research for Development (EIARD).

Activity 3

Under Activity 3, which seeks to improve the dissemination of research results, technology transfer is highlighted as a key element.

3.3.6 Fifth Research Framework Programme

Discussions on a Fifth Framework Programme are ongoing. A proposal has been presented by the Commission in April 1997 and a decision is expected mid-1998. (1) It is envisaged that the Programme will be organised on the basis of a very limited number of specific programmes reflecting a new socio-economic approach to Community

(1) Proposal for a Decision of the European Parliament and of the Council concerning the Fifth Framework Programme of the European Community for Research, Technological Development and Demonstration activities (1998-2002) COM(97) 142

research to be conducted according to criteria related to social objectives such as quality of life and health, preservation of the environment and improvement of the employment situation. Three of the programmes are vertical or 'thematic' and relate to Activity 1 while the other three are horizontal and cover Activities 2, 3 and 4.

Of the three thematic programmes envisaged under the Programme, two are relevant to biodiversity:

- unlocking the resources of the living world and the ecosystem, which covers health, agriculture, fisheries and the environment, as well as industrial policy, and focuses on quality of life; and
- promoting competitive and sustainable growth, which concentrates on the competitiveness of firms while moving towards harmonious and sustainable development.

The third - 'creating a user-friendly Information Society' - is less relevant.

The proposed funding for each theme amounts to 3,925MECU (total 11,775MECU). In addition, a horizontal programme entitled *Enhancing the International Role of European Research* will provide the necessary continuity and focus on the sustainable development issues faced by Developing Countries including Emerging Economies.

Exchange of information

The importance of both environmental information and awareness raising activities is stressed in the Fifth Environmental Action Programme. The EEA is intended to be the Community's key institution for environmental information exchange and dissemination and plays an important role in information provision and public awareness-raising through the World Wide Web, publications, campaigns, and responding to queries.

A proposal for a Council Regulation (1) amending the original EEA Regulation was presented by the Commission in June 1997. The proposal suggests that three new tasks be added to the Agency's list of original tasks as follows:

- ensuring the broad dissemination of information on the state of the environment to the general public and, to this end' to promote the use of new telematics technology for this purpose;
- supporting the Commission in the process of exchange of information and development of Environmental Impact Assessments;
- assisting the Commission in the diffusion of information on environmental research which has a policy relevance.

Alongside information provided by the European Environment Agency, a 4-year development programme (1994-1997) relating to the environmental component of Community statistics (Council Decision 94/808/EC) was adopted by the Council in 1994. This programme is designed to meet the Community's information needs in respect both of environmental policy and environmental aspects of other Community

(1) COM (97) 282 final, 13.6.1997

policies. The objective is to develop the environmental component of Community statistics (within the Community Framework Programme for Priority Action in the field of Statistical Information - the agreement between national statistical services and the Commission) to provide a regular series of environmental information to be integrated with other official statistics and to be available to all Member States. The Community is also undertaking efforts to develop a Clearing House Mechanism (as required in Article 18 of the Convention) to promote and facilitate technical and scientific cooperation.

A key instrument in the Community's overall strategy for facilitating exchange of and access to information about the environment at Member State level is the Directive on freedom of access to information on the environment. (1) The Directive aims at assuring freedom of access to information on the environment held by Member State public authorities and defines the basic conditions under which this information should be made accessible.

The Commission is also active in supporting broader information exchange programmes among the Member States. GREENSPIDER is a Commission-funded network of people responsible for managing training and communication within the Environment Ministries of the Member States. The network is concerned with the environment generally, and is intended to facilitate exchange of information and development of common programmes for information and communication.

A wide variety of information booklets on the environment ranging from biodiversity to wetland conservation have been published by the Commission and over 80,000 copies of the Fifth Environmental Action Programme have been distributed.

In addition, the Community provides co-financing for non-governmental organisations (NGOs) working on biodiversity, which can be used to support information exchange.

3.3.7 Education, training and awareness

Directly, effective implementation of the Biodiversity Convention creates increased demand for certain specialist environmental professionals, such as taxonomists. The relationship between environment and employment was the subject of a major conference jointly organised by the European Commission and the European Parliament and held in May 1997. The Commission is beginning to formulate an integrated policy on environment and employment, and a Commission Communication on Environment and Employment (COM(97)592) was adopted in November 1997.

Indirectly, many of the pressures and threats on biological diversity have their origin in human perceptions, attitudes and behaviour that may directly or indirectly affect the conservation and sustainable use of biological diversity. Accordingly, measures to address education, training and awareness-raising in the context of the Biodiversity Convention's objectives are an important element of any integrated biodiversity strategy.

In addition to the key role played by the EEA and literature published by the Commission, environmental initiatives such as those promoting energy efficiency or car

(1) Directive 90/313/EEC

free cities have raised public awareness and influenced opinion. Likewise, the new Regulation implementing CITES in the European Community makes provision for the Commission and the Member States to inform the public about the threat to the conservation of animal and plant species caused by unsustainable and illegal international trade.(1)

EC budget-line B4-306 provides finance for projects that contribute to an increased awareness of environmental questions. 1997 priorities included nature protection and international aspects of EU environmental policy. The Commission has also carried out many positive actions to intensify environmental education. A specialised budget line on environmental education and training was established following a 1988 Council Resolution on environmental education. Projects funded under this budget line are intended to promote environmental education and training as a tool for achieving environmental objectives. Some 7MECU has been spent on projects to date, but so far they have not focused specifically on biodiversity.

At a general level, an initial surge in integration of environment-related courses and projects in the Commission's education and training programmes continues. Interest shown by education and training institutes in environment-related actions was confirmed by a pilot project launched in 1992 and 1993 involving 40 school participants from across Europe: one in four focused on environmental themes. In March 1995 the European Parliament and Council adopted the Socrates Programme which amalgamates and extends the earlier Erasmus and Lingua programmes, including reinforcement of the environment component. The programme aims to develop the European dimension in studies at all levels. The Community's overall policy on environmental education is currently under review.

3.4 INSTRUMENTS IN SPECIFIC POLICY AREAS

3.4.1 Conservation of Natural Resources

Introduction

The European Community's policies relevant to the conservation and sustainable use of genetic resources encompass two broad categories of measures:

- measures specifically dealing with conservation of species and their habitats;
- measures addressing particular processes with biodiversity impacts (e.g. climate change, which is considered in *Section 3.4.6* below; desertification; ozone depletion; environmental impacts of industrial processes).

In addition, a proposal from the Commission for a Council Directive establishing a framework for community action in the field of water policy is especially relevant for the conservation and sustainable use of freshwater species, ecosystems and habitats.

The success of the Community's initiatives dealing specifically with conservation of species and their habitats also depends on how carefully policies as, inter alia,

(1)Regulation 338/97. IP/97/427 Wildlife Trade: Commissioner Bjerregaard Welcomes Information Campaign, 22.5.1997

transport, energy, agriculture and tourism policies are shaped and pursued. The ongoing impetus better to integrate environment considerations into all Community policy should help to ensure that biodiversity concerns are effectively considered in relation to the second type of measure.

The Fifth Environmental Action Programme asserts the importance of a strategy *aimed at the maintenance of European biodiversity primarily through sustainable land management in and around habitats of Community and wider importance.* The major instruments in support of this objective are the Birds and Habitats Directives. These directives:

- provide for the creation of protected areas and areas where special conservation measures will be taken;
- protect specific species under threat; and
- prohibit certain forms of exploitation of wild birds and priority animal and plant species.

There is no comprehensive Community instrument providing a general framework for conservation of genetic resources and biodiversity falling outside the scope of these measures. However, funding for projects supporting *in situ* conservation is available from a number of sources, including the LIFE Fund (considered further below) and the Community's structural funds. There are also moves to develop a European Spatial Development Perspective (see *Section 3.4.5* below).

The Birds Directive

The 1979 Birds Directive (1) requires Member States to take measures to protect, manage and control species of wild birds in order to maintain population levels through habitat protection. The Directive calls for the '*preservation, maintenance and re-establishment of biotopes*' by creating protected areas, maintaining ecological zones inside and outside protected areas and re-establishing biotopes that have been destroyed.

Annex I of the Directive lists species needing special conservation measures to guarantee their protection, namely the designation of each Member State's most suitable habitat or migratory sites as Special Protection Areas (SPAs). The importance of wetlands to the conservation status of birds is recognised by the Directive which requires Member States to "pay particular attention" to wetland protection. A 1995 Commission Communication on Wetlands also recognised the outstanding importance of wetlands for conservation and sustainable use of biodiversity. Many SPA sites are also internationally recognised Ramsar sites.

In addition to providing for endangered birds, the Directive obliges Member States to prohibit the deliberate killing or capture of all European wild birds and the destruction, damage or taking of their nests and eggs. The Directive also requires Member States to ban the transport and sale of most wild birds. Non-selective means of capture and killing must also be outlawed.

(1) Council Directive 79/409/EEC

The Habitats Directive

The Habitats Directive[1] establishes a common framework for the conservation of animals, plants and natural and semi-natural habitats in the European Community. Its objectives are to ensure the restoration and maintenance of natural habitats and species of Community interest at favourable conservation status and create the Natura 2000 European network of designated areas.

The Habitats Directive provides for the creation of a network of Special Areas of Conservation (SACs) which, together with SPAs designated under the Birds Directive make up the Natura 2000 network. These areas, which are representative of a number of listed natural habitat types and the habitats of vulnerable species, are identified, designated and protected by Member States, thereby establishing a European network in cooperation with each other and the Community. The creation of Natura 2000 and the maintenance or restoration of natural habitats and the protection of species of wild fauna and flora are key objectives of the Fifth Environmental Action Programme. Natura 2000 will be established to secure ecological coherence of the network of designated sites. It is expected that the network will be completed by 2004.

Selection of SACs is based on identification of Sites of Community Importance (SCIs) by Member States in accordance with criteria set out in the Directive. A site or area may be of Community importance if it is home to certain named species or habitat types. SCIs become SACs once measures are set for each site, a process to be completed by June 2004.

The Habitats Directive also requires Member States to adopt a system to protect species in need of strict protection by prohibiting the deliberate killing, capture and disturbance of priority animal species and the picking and uprooting of priority plant species. Destruction or deterioration of breeding grounds and nesting or resting places must also be prevented. In addition, the Directive requires Member States to prohibit the transport, sale or exchange of priority species.

An annex lists species whose *'taking in the wild or exploitation may be subject to management measures'* to ensure that incidental disturbance does not prejudice favourable conservation status. The Directive suggests a number of measures such as the establishment of quota systems or licenses and the regulation of access to these species and their habitats. The Directive also requires the prohibition of certain non-selective methods of capture and killing, such as the use of explosives and poisons.

The Commission has published a manual to assist identification of habitats of community interest.[2] Description sheets drawn up for each habitat type include ecological and wildlife characteristics, taking into consideration regional variations.

Although some delays were experienced initially, the process of implementing the Directive into national legislation is under way and Member States are starting to finalise their national lists of SCIs. By September 1997, a total area of approximately 200,402 km^2 had been put forward by Member States. Sites under the Birds Directive

(1) Council Directive 92/43/EEC

(2) Interpretation Manual of European Union Habitats - Version EU15 (CEC DG XI,1996)

(SPAs) already constitute an additional 109,177 km^2 for Natura 2000.[1] At a seminar held in October 1996, Member States exchanged information and experience in order to build consensus on the ingredients of good management plans for protected areas.

The progress report on the Fifth Environmental Action Programme identifies three challenges now facing the EU and Member States:

- ensuring that sensitive areas are identified;
- determining the appropriate management methods to be applied to each type of selected site; and
- finding adequate resources to ensure the sustainable conservation of the areas identified.

Financial management

In 1992, the Community created a new financial mechanism called LIFE to support its environmental policies. LIFE has three main areas of action: Environment, Nature and Third Countries. Normally, the mechanism can finance up to 50% of the cost of an accepted project, but to encourage nature protection a special provision allows LIFE Nature to cover 75% of the costs in the case where the target is a priority habitat or species. The LIFE Regulation is the only specific financial instrument of Community for nature conservation. Several Member States have already made use of this arrangement: much of the inventory work conducted as the basis for the national lists for Natura 2000 European network of protected areas has been financed through the LIFE Nature fund. In addition, projects preparing model and actual management plans for proposed Natura 2000 areas have also benefited from LIFE funding. *Box 3.5* below gives some examples of LIFE Nature projects.

A second phase of the LIFE programme was established under Regulation 1404/96, with an allocation of a total of 450MECU. Nature conservation has been allocated 46% of the LIFE budget with a further 46% for implementation of environmental policy and legislation.

LIFE Environment finances preparatory, demonstration, technical assistance and promotional measures designed to promote sustainable development, help local authorities to integrate environmental considerations in land use development and planning, and strengthen the link and complementarity between environmental regulations and structural financial assistance. Examples of current projects relevant to conservation and sustainable use of genetic resources are included in *Box 3.4.1.*

(1) Natura Barometer as of 15/9/97 (CEC DGXI)

Box 3.4.1 Examples of Nature conservation projects funded under the LIFE Regulation in 1996

- Conservation of Liminganlahti wetland (1995). Isostatic uplift has created an ever expanding wetland of sludgy shore areas, shore meadows and reedbeds shaped by traditional mowing and grazing. It is an important site for migrating birds and very rare flora. The project's main objective is to build up local consensus about nature conservation and sustainable land use in the area. This 'bottom-up' consultation process is supplemented by an awareness programme and an educational initiative. The project will cost 865,200 ECU, 50% of which will be met by the Commission;

- Action programme for the conservation of two wetlands and the creation of a reserves network for *Valencia hispanica* (1993). Prior to designation, these wetlands were under threat from conversion to rice paddies and uncontrolled hunting and grazing. They provide a home to an array of birds, fish and plants and in particular to the Samaruc, a fish with the latin name *Valencia hispanica*. LIFE funding has allowed the authorities to purchase most of the land concerned and divert polluted water away from the site. A programme of captive breeding will enable the Samaruc to be re-introduced into those sites of the network of seven reserves where it has not been found recently. Costs for the project amount to 3.6MECU, 75% of which is being met by Commission funding; and

- Management schemes for UK marine SACs (1996). The selection of 12 sites reflects the range of habitat types and species listed in the Habitats Directive that are relevant to the UK marine environment. Developing the management schemes will involve collating information on the features of nature conservation interest, specifying conservation requirements and monitoring needs and defining the factors that affect the sites. The project is operated by a consortium of UK nature conservation agencies using a partnership approach with marine user interest groups and specialists including port authorities, fisheries authorities, local and regional councils, scientific research institutes and recreational interest groups. It is expected that the experiences gained will benefit other SACs in the EU. The Commission is funding 50% of this 5MECU project.

Box 3.4.2 Examples of LIFE Environment projects relating to biodiversity

- *Environmental regeneration and protection of a green corridor in areas of strong impact (1997).* The objective of the project is to create a wildlife corridor of 55km in length in highly urbanised areas of Jaén, Torredelcampo, Torrededonjimeno, Martos and Alcaudete (Spain) by remediating and reclaiming post-industrial waste land. The project results will be publicised as part of an environmental awareness campaign that should encourage recreation in the rehabilitated area. The cost of the project is 2.8MECU of which 18.85% will be met by the Commission;

- Biotic Index of Fish Integrity to evaluate the ecological quality of lotic ecosystems and its application to the Meuse River basin (1997). A new index based on analysis of fish populations will be developed as an innovative approach to water quality monitoring. By applying the index through the collaborative efforts of France, the Netherlands and Belgium, it will be possible to improve monitoring of the Meuse, and relate water quality to fish populations in order to provide information on the conservation and restoration of the ecosystem. The project will cost 857,180 ECU of which 49.81% will be funded by the Commission;

- Establishment of economic reference frameworks for the management of natural habitats (1997). The objective of the study is to establish, collect and disseminate economic reference frameworks for the management of five broad habitat types in France. The project will have three phases: a review of best practice and case studies, cost benefit analysis of the options for management and, finally, development of a practical guide for decision makers. The project will cost 1MECU of which 47.33% will be met by the Commission; and

- Small Cetacean Abundance in the North Sea (1996). The main purpose of the study was to establish the number of harbour porpoises and other small cetaceans, as well as their range in European waters. This was based on an intensive sightings survey and statistical interpretation. The preparatory work included the development of research methods that could take account of the behavioural patterns of porpoises while being practical at sea. The total cost was 1.4MECU of which 704,400 ECU was provided by the Commission.

3.4.2 Agriculture

Introduction

Within the European Community, agriculture policy is an important area of exclusive Community competence. For centuries agriculture has had a positive impact in creating a variety of habitats, thus shaping the Community's existing biotic resources and diversity, but in recent years it has also had a negative impact on the maintenance of this diversity. The Community's Common Agricultural Policy (CAP) encouraged the adoption of intensive production methods which have had significant adverse impacts on biodiversity. Some species may disappear because of the destruction of their natural habitats due to overgrazing, eutrophication, drainage, irrigation, reparcelling, agricultural land improvement, abandonment of traditional farming practices or of specific crops and animal husbandry. However in some more marginal farming landscapes such as uplands, support provided to farmers under the CAP has enabled continuance of traditional farming practices that are of critical importance in maintaining biodiversity.

Improved environmental management has been promoted in the context of CAP reforms implemented since the 1980s. Agriculture was highlighted as a key target sector in the Community's Fifth Environmental Action Programme, which noted the economic/environmental synergies between the need for greater protection of resources to ensure sustainable production and budgetary constraints which limit the scope for continuing financial support to intensive farming systems. However, key policy objectives in the agriculture sector remain increased productivity, market stabilisation, reliability of supplies and reasonable consumer prices. These objectives are not easy to reconcile with the objectives of environmental policy and biodiversity protection. Considerable progress has been made but much remains to be done.

The interactions between conservation and sustainable use of biodiversity in relation to agriculture can be defined at two different levels:

- the species, varieties and domestic animal races used as genetic resources for food and agriculture (conservation and sustainable use within agricultural systems); and
- the ecosystems affected by agriculture, or where agriculture takes place.

Genetic resources useful for food and agriculture

An important Community instrument for the promotion of biodiversity within agricultural systems is Regulation 1467/94 on conservation, characterisation, collection and utilisation of genetic resources in agriculture. Regulation 1467/94 established a European Programme for Conservation, Characterisation, Collection and Utilisation of Genetic Resources in Agriculture and promotes collaboration between Member States to document, rationalise and ensure the safety of existing plant and animal *ex situ* collections. A mid-term report on the first Work Programme under the Regulation was published in June 1997, (1) and includes recommendations on desirable developments.

Two calls for project proposals have been published under the Regulation to date as a result of which the Community is currently supporting a total of 13 projects involving

(1) CIM (97) 327 final of 30.6.1997

concerted actions for agricultural crops (allium, minor fruit trees, potatoes, European rice, beta, roses, Prunus, Vitis, olive trees, maize); for farm animals (pig, rabbit, and a directory of genetic resources of farm animals), and one forest tree species (elm). Four projects that help to promote biodiversity within agricultural systems are highlighted in *Box 4.3* below.

Conservation activities for agricultural species or animal races can also in principle be supported through Regulation 2078/92/EEC on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside. The Regulation has been applied to promote conservation of threatened farm animal species through provision of aid for farmers who undertake to rear animals of local breeds in danger of extinction, and to grow plants threatened by genetic erosion.

Box 3.4.3 Examples of Projects funded under Regulation 1467/94 on conservation, collection and utilisation of genetic resources in agriculture

Rabbit genetic resources
The project will help more farmers to raise rabbits, and will enhance the diversity of rabbit breeds available. The project will also contribute to production of angora wool and fur (and felt). It will offer possibility of a bigger choice of rabbit meat products. The project aims to help protect the most diverse representative breeds among the 100 breeds thought to exist in the Community.

Potatoes
This project will provide for the diversification of the range of potato varieties available to the consumer. Some shops and supermarkets are now actively seeking a wider range of material; this project will help expand knowledge and use of minor varieties of potato. There is a special emphasis on eliminating virus from the stocks, thus increasing their quality as seed. Old varieties will also be characterised for taste, cooking qualities, storage performance. The resistance to virus, scab, blight (*phytophera*) and weevil will be assessed. Efficiency of use of fertiliser will also be assessed. This is a particularly important step forward towards an eventual extensification of potato production.

Animal inventory
Animal genetic resources have been well documented on a local basis, notably by herdbook societies, but until recently there has been remarkably little work on a European scale. This project aims to provide the first steps towards an enriched database of European farm animal genetic resources. The database will help, notably: workers wishing to survey for endangered breeds; quantify the cultural and genetic importance of a breed; identify the appropriate management techniques for long term preservation of particular breeds; find information on the specific characteristics of a given breed.

Coordination of the conservation, characterisation, collection and utilisation of the genetic resources of European Elm GEN RES #78). The Elm is an important hedgerow and landscape tree, as well as a useful source of timber, but the species is currently under threat from the proliferation of 'Dutch Elm disease'. This project aims to coordinate existing European collections of Elm and to characterise the holdings in order to enable the evaluation of natural resistance to diseases including 'Dutch Elm'.

Source: COM(97) 327

The Community has established a Community-wide system of plant variety rights (Regulation 2100/94/EC on Community plant variety rights). The Regulation confers rights on the holders of Community plant variety rights. A right for farmers to save and reuse proprietary seed on their own holdings (commonly known as 'farmer's privilege') is confirmed in the Regulation, which also provides for 'equitable

remuneration' (lower than the amount charged for licensed production of propagating material of the same variety in the same area) to be paid by farmers to the holder of the plant variety right. 'Small farmers' are excepted from these equitable remuneration requirements.

The Community has developed a number of initiatives for purchasing and marketing of seeds. Regulation 2508/88/EEC deals with the implementation of co-financing operations for the purchase of food products or seeds, and the Directives on the marketing of seeds, in particular of agricultural crops, prescribe minimum quality standards for seeds to ensure that purchasers receive seeds of a reasonable and uniform quality. They require checks to be made on seed health, on varietal and analytical purity and on germination. They also prescribe conditions and procedures for the official certification of propagating material including official field inspection of crops and testing of seeds. The marketing of propagating material and ornamental plants, vegetable and planting material other than seed and of fruit plants set plant health and quality standards. They establish harmonised conditions at Community level to ensure that purchasers throughout the Community receive propagating material which is true to type, healthy and of good quality. Moreover, a Commission proposal is currently under consideration by the Council which provides the legal base for the adoption of specific conditions for the on farm management and the sustainable use of plant genetic resources through growing and marketing of landraces and varieties which are naturally adapted to the local and regional conditions and threatened by genetic erosion.

Community measures in support of organic farming measures (considered further below) can also provide biodiversity within agricultural systems where they lead to cultivation of species that are not usually cultivated.

Conservation of ecosystems where agriculture takes place

The 1992 reform of the CAP took some account of environmental concerns when a number of market measures were introduced which contribute, directly or indirectly, to reducing pressures on biological diversity in the wider environment. Regulation 2078/92/EEC provides support for the development of the fauna and flora connected with grassland or individual vegetable species. In order to reduce over-production, the Community introduced a set-aside scheme under which farmers are paid to take land out of production and manage it appropriately to ensure environmental protection. (1) Some set-aside land may, however, be used for non-food production. Farmers are also compensated for reducing the stocking densities of some grazing livestock, which has reduced meat surpluses and overgrazing. (2) Member States may apply additional environmental provisions to grazing land on which payments are made, such as price penalties where land is still being damaged.

A variety of accompanying measures specifically targeting the environment were introduced to complement these agricultural market reforms. The Agri-environment Regulation (3) established a Community aid scheme under which Member States must establish compensation schemes for farmers who voluntarily undertake certain agri-

(1) Regulation 1765/92/EEC.
(2) Regulation 805/68/EEC.
(3) Regulation 2078/92/EEC

environmental measures. Examples of such measures include a 5-year commitment to reduced applications of fertilisers and pesticides, use of more extensive farming systems, or upkeep of abandoned farmland and woodland, and a long-term commitment (20 years) to set aside land for environmental purposes, particularly the establishment of biotope reserves or natural parks.

By the middle of the 1997 budget year, 1.35 million agreements had been signed with farmers, covering 17% of all holdings and persons employed in agriculture in the EU. Agreements covered 22.3 million hectares, or 17% of the EU utilized agricultural area.

A comprehensive report on implementation of agri-environment measures in Member States has been adopted by the European Commission [1] with a view to recommending changes which will enhance their effectiveness.

As excessive inputs are harmful to ecosystems, input reduction is encouraged by Regulation 2078/92/EEC as well as by legislation on the maximum pesticide residue contents in the crop products (Directives 74/63/EEC, 76/895/EEC, 86/362/EEC, 86/363/EEC and 90/642/EEC) and on plant protection products (Directives 79/117/EEC and 91/414/EEC). In fact, in order to protect animal health and nature throughout Europe the Community has adopted specific standards to control the placing on the market and use of plant protection products as well as of potential residues of these products in foodstuffs, water and environment. The legislation ensures that only products which meet strict requirements with regards to effectiveness and safety for man and the environment may be used by farmers following good plant-health practices in compliance with the conditions laid down in the authorisation which is issued for each product. Community legislation lays down strict standards for potential pesticide residues in plants, plant and animal products and water, to ensure that these products are not a danger to consumers.

Financial support for farmers converting to organic production methods is provided in other regulatory instruments including the agri-environmental Regulation 2078/92. The use of traditional farming methods and production of traditional food products is also encouraged through the use of product labels which indicate specific quality or geographical characteristics. [2] This system has the potential to inspire consumer confidence in, and selection of, such products and the Community has established technical rules governing the use of such labels to ensure their credibility.[1]

Projects funded under Regulation 1467/94 also have the potential to contribute to environmental protection in the context of agricultural production. A number of the projects that have been selected to date envisage characterising and offering material that is naturally resistant to pests, reducing pesticide inputs (e.g. a project on *allium* crops and wild species); or particularly suited to marginal areas (e.g. minor fruit tree species).

A concern to integrate agricultural policy and the wider economic and social context of rural areas over the past two decades has also led to initiatives that can contribute to mitigating the potential adverse impacts of agriculture on biodiversity. The reduction of

(1) COM(97) 620
(2) Regulation 2081/92/EEC and Regulation 2082/92/EEC

market price support for the most important field crops has encouraged a tendency towards extensification in agricultural land use. Rural diversification, in response to growing demands on the countryside for multiple uses, can be used to exploit the potential of more environmentally friendly activities such as cultural projects, rural tourism, small-scale enterprise and the development of high-quality, 'niche' agricultural products.

European Community legislation has addressed both environmental assessment of proposed development projects in the context of the Community's Cohesion Policy objectives and direct assistance for initiatives or projects with positive environmental elements:

- An early Community Directive on Less Favoured Areas [2] and subsequent reforms of agricultural structural funds provide for evaluation of environmental impacts of proposed development projects;
- A more recent Regulation [3] provides assistance for farm investments aimed at protecting the natural environment, and emphasises protection of marginal areas; and
- The Community initiative LEADER II, designed to help rural associations and local governments in rural areas, provides support for a variety of measures with beneficial impacts on biodiversity, including organic farming, pollution reduction, water management, the creation of parks and habitat protection. The scheme has been well received and has been re-established for the period 1994-99.

3.4.3 Fisheries

Introduction

The increasing pressure exercised by human activities on the marine and coastal environment stresses the importance of integrating biodiversity concerns into marine resource policies, including fisheries, and into agreements on the protection of coastal and marine environment and on fisheries.

Fisheries policy in the European Community is an area of exclusive Community competence. Policy is set by the Fisheries Council (comprising Member State Fisheries Ministers) and most legislation takes the form of Regulations. This provides the opportunity for a consistent management approach, but enforcement still depends on the responsible actions of Member States. Action can be divided into two areas:

- relating to Community fisheries resources;
- international.

Community Fishery Resources

The priorities of the Community's Common Fisheries Policy (CFP) traditionally lie with supply side productivity, that is, the exploitation of an economic resource, at the same time respecting the concept of relative stability. Fisheries are a common Community resource, an important principle being that of equal access for all Member States.

(1) Regulation 2515/94/EEC
(2) Directive 75/268/EEC.
(3) Regulation 2328/91/EEC.

Conservation has traditionally been seen narrowly as the maintenance of harvests and stocks at levels permitting continued exploitation or maximising sustainable yields.

The integration of environmental issues into fisheries policy has become prominent in recent years. Conservation forms an important element of the CFP and unsustainable exploitation is in conflict with Community policy [1]. The broader perspective of today includes not just sustainable levels of fishing effort but recognition of the other biodiversity impacts of fishing such as: impact on non-commercial species; marine pollution; and sea bed disturbance.

Since the introduction of Regulation 170/83/EEC (replaced by Regulation 3760/92 after a 1992 review), management of fish stocks has been accomplished primarily through the use of total allowable catches (TACs) set annually by the Fisheries Council, based on scientific advice from the Advisory Committee for Fisheries of the International Council for the Exploration of the Sea (ICES) or in combination with effort limitation. [2] TACs or TAE (total allowable effort) for particular zones are then apportioned among Member States in the form of quotas.

Technical conservation measures focus on restrictions on the types and specifications of fishing equipment, for example length of nets and mesh size. Environmental considerations have led to the introduction of some technical measures aimed at protecting marine mammals from fishing activity - for example, a ban on encircling sea mammals with purse seine nets for catching tuna, and a ban on retaining and marketing sea trout and salmon caught beyond territorial waters. Other conservation measures include closed areas or 'boxes' in which fishing is restricted, and selective devices such as panels with different mesh size (selective gears).

A key problem is still the excess fishing capacity in relation to available resources within Community. Progress has been made with the creation of a Community register of fishing vessels in 1991 (Regulation 163/89), the 1993 requirement that all Community fishing vessel be licensed, and the introduction of special fishing permits which allow access to specified sensitive areas (Regulation 1627/94). The capacity and activities of the fishing fleets which exploit the resources are addressed in the fourth Multi-Annual Guidance Programme (MAGP) adopted by the Council in April 1997.[1] Together, these Regulations and the financial conditions of the Structural Funds provide a framework to achieve the needed reduction of fishing effort in the Community as a whole with subsequent benefits for biodiversity.

Recent thinking on integration of environment into fisheries policy has been strongly influenced by the series of international agreements such as the UN Agreement on Highly Migratory and Straddling Fish Stocks, the FAO Code of Conduct and conferences on the Protection of the North Sea. An early policy focus on pollution control has now broadened to encompass the effect of fishing activities on fish stocks while implementation of a precautionary approach to fisheries management has gained impetus in recent years. A recent Ministerial Meeting on the Integration of Fisheries and Environmental Issues agreed that the first management priority for the North Sea is *to ensure sustainable, sound and healthy ecosystems in the North Sea, thereby restoring and/or*

(1) As expressed in Regulation 3760/92 and the Treaty on European Union
2) Regulation 685/95

maintaining their characteristic structure and functioning, productivity and biological diversity. (2)

The meeting also agreed a series of actions relating to rebuilding spawning stocks, protecting juvenile fish and protecting species and habitats, many of which are already implemented and others are under active consideration or development by the Commission.

A complete revision of the existing Regulation laying down technical measures for the conservation of fishery resources was adopted by the Council in October 1997. The new Regulation will introduce significant changes in allowable mesh sizes, minimum size of fish that may be caught, restrictions on target species and reductions in the quantity of discards.

In spite of conservation regulation, concern is deepening over the state of many of the Community's fisheries. Concerns are commercial and social, as stocks decline and fishermen experience increasing difficulty in maintaining their catch levels with serious consequences for certain coastal communities. Species decline and are placed at risk of depletion through too high exploitation, possible damage to the marine environment from intensive practices and negative impacts caused by other human activities.

A lack of complete scientific evidence has often been the pretext for delay in taking action. The Commission has prepared a report to the Fisheries Council on the biological impact of fisheries, recommending many new initiatives intended to improve the scientific basis of fisheries management. The report laid particular emphasis on fishing impacts on habitats, ecosystem interactions and the use of indicator species to monitor developments (3) . The report was adopted by the Fisheries Council and the Commission has requested the International Council for the Exploration of the Sea (ICES) to prepare a work programme leading to agreed scientific priorities and management advice. Work is expected to begin during 1998.

The relation between subsidies and overfishing/overcapacity is currently being examined in several international fora. Although certain such subsidies might be considered to undermine conservation efforts, it should be underlined that Community funds are increasingly being used for conservation purposes. For example, new regulations restricting the use of long drift nets proved difficult to implement in Italy due to the great economic importance of the swordfish catch and its dependence on drift nets up to 12 km long. In order to compliance and protect swordfish stocks, the Community is providing ECU 100 million in compensation to Italian fishing communities.

The European Parliament is demonstrating growing interest in and concern over fisheries policy. This development may be expected to increase momentum towards greater integration of environmental considerations into fisheries policy.

(1) OJ No L175/27

(2) Fifth International Conference on the Protection of the North Sea, Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues, 13-14 March 1997, Bergen, Norway, Statement of Conclusions.

(3) Commission of the European Communities, Communication from the Commission to the Council: Evaluation of the Biological Impact of Fisheries COM(95) 40 final.

International Action

Multilateral agreements provide a means of addressing some of the difficulties in enforcing regional fisheries regimes. For example, the International Commission for the Conservation of Atlantic Tuna (ICCAT) is one of the international/regional organisations which has recommended measures to fight abuse of the system of 'convenience flags' which can be used to avoid obligations stemming from regional or international law. ICCAT has proposed a ban on the import of bluefin tuna - the most endangered species - caught by fishing vessels of such countries (in this case Belize, Panama and Honduras).

The Commission intends to propose adoption of the ban to the Fisheries Council this year [(1)]. The European Community is a minor importer of bluefins but a major exporter. In parallel with implementation of the import ban, therefore, the Commission will propose quotas for bluefin tuna in accordance with the ICCAT resolution.

3.4.4 Regional Policies and Spatial Planning

Spatial Planning can have a major impact on biodiversity: good planning can protect and enhance areas of diversity whilst poor planning can lead to fragmentation, uncontrolled development pressures and loss of habitat diversity, particularly in peri-urban, urban and coastal transport corridors and areas. Spatial planning is an important element in protecting and improving the environment and in prudent and rational use of natural resources. The Fifth Environmental Action Programme highlights the role of sectoral and spatial planning in sustainable development, advocating an integrated territorial approach in pursuing greater economic and social cohesion in the Community.

This approach was supported in the landmark Community regional planning document, *Europe 2000+*, which emphasised the potential value of regional planning approaches for the protection of nature and biodiversity through:

- regional co-operation to re-establish ecological corridors;
- cross- border co-operation for management of large natural areas;
- extending the work of the Corine Land cover project; and
- improved protection of water reserves.

Europe 2000+ noted that existing Community measures such as the Habitats Directive and the Regulation on agri-environmental measures could be strengthened through a number of spatial planning-related measures including:

- critical load analysis of open spaces planned for development;
- taking account of the principal features of the countryside when land-use plans and development projects are drawn up;
- defining 'codes of practice' for all measures and projects with a spatial impact in order to reduce the threat to open spaces; and

(1) Recommendation of ICCAT concerning the situation of Belize and Honduras with regard to the 1994 Resolution on a Plan of Action for bluefin tuna. Annexe 5-11.

- encouraging territorial authorities in the same biogeographical region to co-operate in developing joint strategies for protecting the countryside, natural habitat sites and species, especially in sites which form part of the Natura 2000 network [1] .

Project funding under the Structural Funds and the Cohesion fund also have potential to contribute to the integration of biodiversity considerations in spatial planning and regional development. Relevant initiatives within the Structural Funds include LEADER II (designed to help rural associations and local authorities in rural areas to exploit their potential) and INTERREG (which was initially established to prepare border areas for a Community without frontiers). For example, the initiative INTERREG IIc provides assistance to countries sharing common social, economic or environmental characteristics across national borders. In addition, pilot actions are funded under Article 10 of the ERDF and a variety of pilot projects are also funded under the TERRA programme for land use projects.

Despite a wide range of environmental activities, there has been growing recognition that spatial development policy is still piecemeal and that insufficient account is often taken of environmental impacts. The European Parliament expressed its concern in a 1995 Resolution [2] and the Commission responded with a Communication [3] which re-emphasised the interdependence of environmental protection and regional development policy and set out a number of options for improving the environmental performance of Structural Funds programmes and Cohesion Fund projects.

The Communication noted that between 1989 and 1993, about 7 per cent (2.751 billion ECU) of the Structural Funds budget was spent on direct environmental measures. *Table 4.1* shows that increased spending to 9.4billion ECU is planned on environmental measures in economically disadvantaged areas for the period 1994-99, including protection of aquatic biotopes (for example, a plan for reintroduction of salmon; ecological engineering works for the regeneration of degraded sites). The Cohesion Fund will disburse about 16 billion ECU between 1993 and 1999 and it was proposed to allocate 50 per cent of the Fund to environmental projects, an increase over the 45 per cent share allocated during the first two years of the Fund's operation.

The progress review of the Fifth Environmental Action Programme highlighted the possible contribution of a European strategy to encourage local initiatives for development and employment supported by the Structural Funds, which could also contribute to the conservation of natural areas.

(1) European Commission, Europe 2000+: Cooperation for European Territorial Development. ECSC-EC-EAEC, Brussels, Luxembourg, 1994. ISBN92-826-9099-7,.

(2) A4-0064/95, April 5 1995.

(3) COM(95) 509 final.

Table 3.4.1 Contributions of Structural and Cohesion Funds to Direct Environmental Measures (in ECU million at 1994 prices)

Structural Funds	**Total**	**Percentage of Total**
Objective 1 (1994-99) Total	93810	100
Environment	8328	8.9
Objective 2 (1994-96) Total	6977 (1)	100
Environment	397	5.7
Objective 5b (1994-99) Total	6134	100
Environment	720.5	11.7
Cohesion Fund	**four countries**	
1993 Total	1565 (1993 prices)	100
Environment	606	38.7
1994 Total	1853	100
Environment	923	49.8

Source: 5EAP Progress Report

In a follow up to *Europe 2000+*, work is ongoing on the development of a European Spatial Development Perspective (ESDP), a framework planning document intended to promote more innovative actions among Member States and to highlight the potential benefits of a more integrated approach to spatial planning (2) .

The first official draft of the ESDP stresses the value of natural resources both to urban and rural development and also identifies conservation and development of the natural heritage as an important field of action, which can be pursued via spatial planning. The spatial planning approach outlined in the draft advocates territorial policies and measures being carried out:

- over a longer time-frame;
- in a territorially wider perspective; and
- in a wider policy context, involving cross-sectoral consultation and vertical co-operation between all actors representing competing uses of land.

3.4.5 Forestry

Introduction

Globally, forests contain proportionately the greatest biodiversity of all ecosystems in terms of species, genetic material and ecological processes and have intrinsic value for the conservation and sustainable use of biodiversity. Forests play an important role in combating climate change and in minimising its impact on the conservation of other ecosystems. However, the potential for insensitive afforestation to actually reduce the Community's biological diversity has increasingly been recognised and policies now focus both on preventing deforestation (in Europe and world wide) and promoting appropriate afforestation and management of existing forests to maximise biodiversity benefits.

(1) This figure, which does not include the contributions to Austria, Finland and Sweden in 1995 and 1996, will be updated in the beginning of 1998 with a view to including the aids granted for 1997 and 1998.

(2) European Spatial Development Perspective. Meeting of Ministers Responsible for Spatial Planning of the Member States of the European Union. Noordwijk, 9-10 June 1997. First Official Draft.

The Community's approach to conservation and sustainable use of biodiversity in forests can be considered under three distinct policy headings:

- forests within the Community;
- pan-European aspects; and
- global aspects.

International Action

At global level, the European Community supported the UNCED Declaration on Forest Principles and was an active participant in UN Intergovernmental Panel on Forests (IPF), which has been replaced since UNGASS by the open-ended Intergovernmental Forum on Forests. The Community has also been active in supporting calls for a legally binding international instrument to slow deforestation rates and promote sustainable forest management. The European Community is also party to the International Tropical Timber Agreement and has ratified the new agreement of 1996.

The European Community has taken measures to safeguard tropical forests and their associated biodiversity. The Dublin European Council in 1990 called for the implementation of a Community action plan and the European Parliament has passed a number of resolutions on the issue. A 1989 Commission Communication to the Council on the role of the Community in the preservation of forests was followed by a 1995 Regulation establishing priorities and procedures for co-operation in this area. Article 4a states that particular consideration should be given to *conservation of primary tropical forests and their biodiversity*.

The Community emphasises sustainable forest management in its bilateral agreements with Developing Countries. For example, a Protocol on Sustainable Management of Forest Resources was added to the Lomé Agreement on its revision in 1995, and Guidelines for Forest Sector Development Co-operation were published in 1996. Other bilateral agreements with Latin American countries also stress co-operation on sustainable forest management.

The Community operates a revised scheme of generalised tariff preferences (GSP) for industrial products as from 1 January 1994 (1) and for agricultural products as from 1 January 1997 (2) under which products originating in Developing Countries are granted preferential access to the Community's market. The new scheme provides for additional tariff preferences to be granted to GSP beneficiary countries which have adopted and actually apply standards laid down by the International Tropical Timber Organisation relating to the sustainable management of forests. (3)

In addition, the Community has provided strong support for the protection of global forests through its financial assistance programmes. Between 1992 and 1996, almost 100 MECU has been spend annually by the European Community on the conservation and sustainable management of forests. In 1992, a budget line tailor-made for tropical forestry projects was created, making 50 MECU available annually for projects promoting the conservation and sustainable management of tropical forests and their

(1) Council Regulation 2381/94
(2) Council Regulation 1256/96
(3) Article 8 of Council Regulation 2381/94 and 1256/96

associated biodiversity. From 1995, the budget line has been governed by Council Regulation No 3062/95 of 20.12.1995. (See further *Section 3.4.8* below).

Since 1992 the European Community has supported the European Tropical Forests' Research Network (ETFRN) with a view to facilitating research co-operation.

The European Community's Tropical Forest Programme is currently the subject of an independent evaluation which will be finalised in 1998.

Pan-European Forestry

At pan-European level, a number of co-operative actions have been engaged in the context of the follow-up to the Ministerial Conferences on the Protection of Forests in Europe (Strasbourg, 1990 and Helsinki, 1993). A third Ministerial Conference will take place in Lisbon in June 1998. The European Community is a signatory party to the resolutions adopted at these conferences. Through its forestry related actions, notably in the field of forest protection and through its research programmes, it actively supports the Pan-European process. The Community supports the application of general guidelines for conservation of the biodiversity of European forests were defined in Resolution H2 of the Helsinki meeting (1) .

Progress in conserving biodiversity of forests will be encouraged by the increased cooperation initiated between the Process on the Protection of Forests in Europe and the Pan-European Biological and Landscape Diversity Strategy (a strategy agreed at the Ministerial Conference 'Environment for Europe' held in Sofia, 1995) (2) . A recent expert follow-up meeting of the Helsinki Ministerial Conference agreed that the two processes would launch a common Work Programme on the Conservation and Enhancement of Biological and Landscape Diversity in Forest Ecosystems. The Work Programme covers the period 1997-2000 and sets out priority actions to begin immediately under four objectives:

- conservation and appropriate enhancement of biodiversity in sustainable forest management;
- adequate conservation of all types of forests in Europe;
- recognition of the role of forest ecosystems in enhancing landscape diversity; and
- clarification of impacts of activities from other sectors on forest biological diversity.

The proposed work programme will be submitted for formal endorsement to the next Ministerial Conferences on the Protection of Forests in Europe (Lisbon, 1998) and 'Environment for Europe' (Aarhus, 1998). In relation to the first objective, the existing FAIR initiative within the Community's Fourth Framework Research Programme (see *Section 3.3*) is working to identify methodologies and indicators for monitoring and evaluating forest biodiversity in Europe. Improved knowledge on the estimation of value of all forest goods and services will allow more informed decision-making.

(1) Ministerial Conference on the Protection of Forests in Europe, 16-17 June 1993 in Helsinki. Documents.

(2) The Pan-European Biological and Landscape Diversity Strategy - A Vision for Europe's National Heritage. Council of Europe, UNEP, European Centre for Nature Conservation

Forestry within the Community

Forestry policy within the European Community is developed largely at national level. The European Community's strategic approach and actions in the forestry sector are generally aimed at supplementing the work of national, regional and local actors. However, the Community has taken a number of legislative initiatives to promote forest conservation and sustainable development; in particular:

- forests related activities on all types of land in the context of the Community's actions for the rural and regional development (Council Regulation 1610/89), including i.a. afforestation, the improvement of woodlands, the protection of forests, the development of forest infrastructure and the initial transformation of forests products;

- A Community Aid scheme for forestry measures in agriculture including afforestation of agricultural land, was among the accompanying measures of the 1992 CAP reform. (1) The scheme is mandatory at Member State level but voluntary for landowners. The European Agricultural Guidance and Guarantee Fund co-finances 50 per cent of the costs (rising to 75 per cent in specially designated areas). The available budget is 1325MECU for 1993-1997. Implementation of the measure lagged behind expectations in 1993 and 1994 but the afforestation rate has since improved: 550,000 ha were afforested by 30 April 1996.

- A Community scheme to protect forests against atmospheric pollution was established a decade ago and reinforced in 1992 and 1996 (2) . Member States implementing protective measures receive co-funding at 50 per cent from the Community. Between 1987 and 1996 452 projects were funded. An essential part of the scheme relates to systematic and intensive monitoring of forest ecosystems in cooperation with the International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests and the publication of periodic reports on the condition of forests in Europe. The most recent European Commission/EN-ECE report on forest conditions in Europe indicates that forest damage is still worsening slightly.

- Community measures to protect forests from fire, which were strengthened in 1992 (3) and renewed in 1997 to give greater effect and consistency between actions financed by Member States and the Community. Preventive measures by Member States in fire hazard areas can be co-financed.

- the Forestry Information and Communication System which aims to collect and, where necessary, make comparable or complete forestry information from the Member States (Council Regulation 1615/89/EEC).

In a resolution of 30 January 1997, the European Parliament called for the development of a legislative proposal on a European Union Forestry Strategy and protection of forests has therefore been highlighted as a major topic to be developed.

(1) Regulation 2080/92/EEC.
(2) Regulation 3528/86/EEC.
(3) Regulation 2158/92/EEC.

3.4.6 Transport and Energy

Introduction

The transport and energy sectors have global and regional impacts on biodiversity through both climate change and acidification, contributing by far the greatest atmospheric emissions of carbon dioxide (CO_2) - the most significant greenhouse gas - and of sulphur dioxide (SO_2), nitrogen oxides (NOx) and ammonia (NH_3). In addition, it is recognised that some large-scale renewable energy projects, such as hydropower projects, may also have a negative impact on biodiversity.

Climate change is likely to affect Europe's biodiversity: sea level rise will lead to loss of some habitats (inter-tidal and low-lying wetlands) and creation of new ones. Temperature rise may lead to loss of some species at the limits of their range but may create new niches for others. The overall impacts are difficult to predict.

SO_2, NOx and NH_3 emissions lead to deposition of sulphur and nitrogen compounds on forests, soils and freshwater systems. Sulphur and nitrogen compounds and their secondary reaction products can cause acidification, which changes the chemical composition of sensitive soils and freshwater systems; lowering pH and making aluminium soluble and hence mobile. This is a toxic combination for many ecosystems, potentially sterilising freshwater systems and killing less tolerant plant species. 'Critical loads' provide a quantitative estimate of exposure levels to specified pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge. Critical loads can be used to define the natural tolerance of an ecosystem to acidification. An analogous process occurs with tropospheric ozone pollution, with unpredictable impacts on plant communities and hence ecosystem quality.

In addition to vehicle emissions, transport infrastructure is responsible for fragmentation and destruction of habitats and disturbance of wildlife which can follow from increased human access and intrusion.

The Community has developed a wide range of initiatives to deal with these problems. The multilateral policy context for many of these initiatives lies with the Community's commitments under the 1992 UN Framework Convention on Climate Change (UNFCCC) and the 1979 Geneva Convention and subsequent protocols on reduction of acidifying emissions (SOx and NOx).

Climate change/CO2 reduction.

The Community operates an Environment and Climate research programme. Its objectives include improving the scientific basis of environmental policy-making in the European Union and developing environmentally-friendly products, technologies, techniques and services which meet new needs and could create new jobs. Research into the natural environment, environmental quality and global change accounts for 47% of the budget; environmental technologies account for a further 25%.

As a first step to combat climate change the Community committed itself to stabilise CO2 emissions at 1990 level by the year 2000. Within the overall Environment and

Climate Research Programme, a number of energy conservation and energy technology programmes (Thermie I, Joule II, SAVE and ALTENER) contribute to (highlighted in *Box 4.4* below). In May 1997, the Commission adopted a Communication on the Energy Dimension of Climate Change [1] which focuses on the implications for the energy sector of meeting the Community's negotiating objective of a 15% reduction for a basket of three greenhouse gases in 2010 compared with 1990. The final outcome of the Third Conference of the Parties of the UN Framework Convention on Climate Change in Kyoto resulted in agreement implicating that the Community will have to achieve an 8% reduction on 1990 levels of emissions of six greenhouse gases by 2010.

Box 3.4.4 Joule-Termie, SAVE and ALTENER

The Joule-Thermie programme includes research, development and demonstration measures concerning non-nuclear energy technologies. It aims to develop and test safe, environmentally-friendly and economic energy technologies, promote more efficient energy conversion and use, and greater use of renewables in Europe's energy supply. The programme has a budget of 1030MECU.

The Joule-Thermie programme is complemented by the non-technological approach of the SAVE programme (Specific Action for Vigorous Energy Efficiency), which is based on improving energy efficiency through legal and administrative actions, for example, energy performance standards for buildings and non-technical pilot actions in industry and domestic sectors in Member States. The budget for 1991-1995 was 35MECU; the Commission has extended the programme for a further five years with a budget of 45MECU.

The ALTENER I programme for the promotion of renewable energy sources was established for the period 1993-97 [2] . The 1994 Madrid Conference on Renewable Energy declared a target of a 15% contribution from renewables to primary energy supplies in the Community by 2015, and this target was repeated in a 1996 Committee Report of the European Parliament. In its Green Paper on Renewable Energy, the Commission suggested a new objective for the year 2010: a doubling of the contribution made by renewables to the energy mix compared to 1995 [3] . In this context, the Commission has adopted a proposal for a Council Decision to continue the ALTENER II programme from 1998 to 2002, with a budget of 30MECU.

Transport

In late 1992, the Commission invited the European oil and automobile industries to collaborate in developing the technical foundations for future policy. The work programme proceeded by forecasting air quality of major cities in 2010, comparing forecast quality with air quality targets and expressing the excess pollution as an emission reduction target. The objective then was to quantify the costs and emission-reduction potential of a variety of measures - vehicle technology, fuel quality, and non-technical measures - aimed at reducing vehicle emissions and meeting air quality standards.

Completion of the programme's first phase (Auto-Oil I) led directly to the development of a Commission strategy for control of atmospheric emissions from road transport and proposals from the Commission for reductions in regulated emissions in two stages, namely 2000 and 2005.

(1) COM(97) 196 final. 14 May 1997

(2) Council Decision 93/500/EEC, 13 September 1993

(3) Green Paper on Renewable Energy, COM(96) 576 final of 20 November 1996

In 1996, the Commission set out legislative proposals for amendment of Directive 94/12/EEC on quality of petrol and diesel fuels and Directives 70/156/EEC and 70/220 on motor vehicle emissions. (1) The combined effect of the new measures, if introduced simultaneously as planned on 1 January 2000, would be to reduce road transport emissions in 2010 by about 40-50 percent. The second Auto-Oil programme began in 1997 and was extended to involve Member States and NGOs. The aim is to produce new proposals by mid-1999, setting fuel quality and emission standards for 2005 and beyond.

In addition, the Community has addressed transport-related CO2 emissions by launching a strategy to improve the fuel efficiency of passenger cars. (2) The target is to achieve average CO2 emissions for newly registered cars in the Community of 120g/km by 2005 or 2010 at the latest. The strategy foresees implementation through an agreement with the automotive industry; fiscal measures; and improved consumer information to increase demand for more fuel-efficient cars.

Acid emissions from vehicles are also receiving attention under the Community's Strategy to Combat Acidification, which was prepared and adopted by the Commission in response to a request from the European Council. (3) Analysis revealed that while progress on reducing acid deposition had been made, current and planned legislation (4) would not be sufficient to achieve the long-term goal of 'no exceeding, ever, of critical loads and levels' established in the Fifth Environmental Action Programme. The strategy uses a so-called 'gap closure' approach to determine the most cost-effective balance between economic costs and ecosystem protection. Accordingly, the strategy establishes an interim target of reducing - by at least 50% - those areas in the European Community where acid thresholds are exceeded in 2010. This interim step will be reviewed in 2004; the ultimate policy goal remains no exceedance of critical loads.

Tropospheric ozone, caused in large part by emissions from vehicles, is another transboundary pollutant which requires a Community-level response. The Commission has prepared a report covering all aspects of the problem. (5) The Commission intends to develop a proposal for a Community strategy to combat tropospheric ozone pollution by 1998, and is currently working with the International Institute for Applied Systems Analysis (IIASA) on the scientific analyses necessary. It is foreseen that the scientific analyses will follow the same methodology as that adopted for the acidification strategy, and will lead to the definition of national emission ceilings for NOx and VOCs, the main precursors of tropospheric ozone.

During 1998, the Commission is expected to come forward with a proposal for a daughter Directive establishing national emission ceilings for SO2, NOx, NH3 and VOCs, consistent with the attainment of the 50% gap closure target for acidification, and the achievement of agreed air quality objectives for tropospheric ozone. This proposal

(1) COM (96) 248 final of 18 June, 1996

(2) COM(95) 689 final of 20 December 1995. Council conclusions of 25 June 1996

(3) COM(97) 88 final

(4) There is a large range of Community legislation to control acidifying emissions, including: Council Directive 88/609/EEC relating to large combustion plants; Council Directive 93/12/EEC relating to the solphur content of certain liquid fuels; various legislation relating to control of emissions from mobile sources; the framework Directive 96/61/EEC on integrated pollution prevention and control; and air quality Directives for SO2, NO2, particulates and ozone

(5) Beek, J P and M Krzyzonowski, Tropospheric Ozone in the European Union: "The Consolidated Report". Draft report prepared by the European Topic Centre on Air Quality (Forthcoming)

to base future Community policy in these areas on national emission ceilings for a number of key pollutants represents a major new initiative. However, national emissions ceilings will be complemented by continuing development of other policies, including ratification of the 1994 Sulphur Protocol by all Member States, a Proposal for a revision of the Directive on the sulphur content of certain liquid fuels, and action related to the Large Combustion Plant and Integrated Pollution Prevention and Control Directives.

Impacts on Natural and Semi-Natural Habitats

The Trans-European Transport Network (TEN) is an essential pre-condition for the functioning of the Single European Market and will provide for efficient transport communications throughout the Community. In 1996, the European Parliament and the Council adopted Community Guidelines, which prioritised the integration of environmental concerns into the design and implementation of the TEN (e.g. through mitigating measures such as ecoducts). However, traditional EIA methodologies have not always proved adequate for strategic decision-making, and major transport infrastructural projects have sometimes led to severe loss and/or fragmentation of valuable European habitats.

In Article 8.2 of the TEN-Guidelines, the Community foresaw the development of methods for strategic environmental assessment (SEA) which could provide for evaluation of the TEN's environmental performance; the Environment and Transport Directorates-General of the Commission have since co-operated to this end. The results of their joint work programme should be reported to the Council by 1 July 1999, with a view to possible revision of the TEN-guidelines. As developed so far, the proposed methodology for SEA would allow:

- assessment at network level, to evaluate whether the environmental impact of the development of the multi-modal TEN;
- assessments at corridor level, involving development of a range of feasible methods and techniques for use in different regions; and
- development of a manual of good practice.

The Commission, in co-operation with the Member States, has initiated a number of pilot corridor assessments. A pilot SEA of the whole TEN will be conducted by the Commission, in co-operation with the European Environment Agency. One of the "themes" to be evaluated in the pilot SEA of the TEN is Nature and Biodiversity; the indicators currently proposed are density of designated habitats and other ecologically important areas in the vicinity of infrastructure or within buffer zones around the infrastructure, and number of habitats cut through by transport infrastructure.

3.4.7 Tourism

Tourism activities in the European Community are quite diffuse, but in the past have been concentrated in zones - such as coasts and mountains - which may be subject to intense seasonal use and development pressure. The pressures are particularly great in less developed regions where tourism is a central plank of development policies. The travel and tourist industry is expected to surge over the next 10-20 years; the Commission recognises that sustainable development of the sector will depend on maintaining a high quality natural and man-made environment.

Various policy approaches are in place to integrate environmental protection and tourist development. Environment was specifically targeted in the Community Action Plan to Assist Tourism, which stated that the aim of Community action in areas of interaction between tourism and environment is to ensure that the environment is taken more fully into account. (1) A large part of the budget of the Action Plan was been earmarked for sustainable tourism projects. (2) Actions taken include establishment of a European prize for Tourism and the Environment, intended to help raise awareness in the industry, and support for the project on a European Community Network for Environmental Travel and Tourism (ECoNETT). This partnership with the World Travel and Tourism Council disseminates information and provides guidance to the industry and public sector. (3)

Regional policy is increasingly focused on the role of tourism in socio-economic development and the need to encourage responsible use of tourism resources, including the natural environment. Economically disadvantaged rural areas (Objective 5b regions) are encouraged to develop non-intensive tourist activities ('soft' or eco-tourism) through financial assistance from the Structural Funds. For example, the ENVIREG Fund has been used to co-finance integrated protection schemes to manage areas of scenic interest for tourism in Portugal, (4) and measures to promote rural tourism are a central part of the Community initiative LEADER II (1994-1999). Many LEADER projects combine rural tourism activities with protection of indigenous species and marketing based on protected areas diversity and distinctiveness. Estimates to date indicate that approximately 40 per cent of the total budget of 1,755MECU (Community contribution) allocated to this initiative will be made available for projects to develop rural tourism. (5)

Coastal zone management is the subject of particular attention in the framework of the Fifth Environmental Action Programme, which highlights tourism as one of the key target sectors. Coastal zones present unique environmental conditions: eight of forty priority habitats listed in the Habitats Directive are coastal. However, many coastal areas have experienced reduction of biodiversity and impoverishment of landscapes, often due to a lack of co-ordination between numerous actors involved in management and development planning.

To promote more integrated management of coastal zones, the Commission has adopted a Communication to the Council and European Parliament, which stressed the need for action at European level to speed progress towards sustainable development of coastal zones. (6) The Communication launched a demonstration programme on integrated coastal zone management comprised of a number of pilot projects to test co-operation models for an integrated management approach and to provide practical information for development of possible additional measures at Community level and other levels. The projects are now under way; an interim report is in preparation by the Commission and recommendations are expected by the end of 1998.

(1) Council Decision 92/421/EEC of 13/07/1992.
(2) CEC, The Environment and the Regions: Towards Sustainability, p.12.
(3) CEC, Community Actions Affecting Tourism. Brussels, 11/07/1997, p. 18-22.
(4) CEC, The Environment and the Regions: Towards Sustainability, p.20.
(5) CEC, Community Actions Affecting Tourism. Brussels, 11/07/1997, p. 22
(6) COM(95) 511 final of 31 October 1995.

In addition to the EU pilot projects contributing to this programme, the LIFE Third Country programme also supports projects involving the development of integrated coastal zone management plans. Two examples are provided below in *Box 4.5.*

Box 3.4.5 Integrated Coastal Zone Management Projects

- *Ecotourism and Nature Protection in the Kaliningrad Region (1996).* The National Park Curonian Spit and the Vistula Spit are unique areas of high ecological value and importance in the Baltic region. Despite local and international recognition of their importance, they are threatened by over-utilisation. The project sought to elaborate Ecotourism and Nature Protection concepts according to international standards which were submitted to the regional authorities for approval. Two workshops have been organised on the theme of integrated coastal zone management and training courses on 'green education' for teachers, an international ecological summer camp for children and actions to raise public awareness. Phase II set up demonstration projects of ecotourism facilities and a know-how exchange and information network for the region. The project will cost a total of 546,574 ECU (of which 42% is funded from LIFE Third Countries) and will last for 21 months.

- *Coastal Management and Tourism in Turkey (1996).* The principal objective of the project is to secure sustainable development and the conservation of biodiversity and natural resources in selected coastal areas of Turkey. Two coastal sites with different experiences of tourism (large scale and small scale) have been selected in Antalya , southern Turkey. The expected results are participatory formulation and officialisation of integrated coastal zone management plans at both sites, the establishment of inter-institutional co-ordination bodies with local participation, the development of monitoring systems and the enforcement of national and international legal commitments for the protection of the coast. Solutions to be introduced at the sites may lead to national legislation on coastal protection.

At regional level, 17 Mediterranean countries have signed the Barcelona Convention for the Implementation of an Action Plan for the Mediterranean (the Blue Plan). Tourism pressures are especially great in the region and various cross-border co-operation measures have been implemented to improve coastal management and nature conservation in through establishing protected areas and improving waste water treatment, preserving and extending forests and preventing forest fires. (1)

3.4.8 Development and Economic Co-operation

Development Policy

Developing Countries offer a wide spectrum of habitats and ecosystems, of which forests, grasslands and marine/coastal ecosystems are generally the most significant. As noted in *Part 2,* biodiversity tends to increase towards the equator, with the result that tropical countries host the most diverse habitats and species on the planet. Biodiversity in these countries is subject to all the same development pressures as those in Europe with the added pressures of poverty, population growth and land shortage.

The European Community is involved in development and economic co-operation activities with partner countries in the Africa/Caribbean/Pacific region (ACP), Asia and Latin America (ALA) and the Mediterranean region (MED). Environment is integrated into most co-operation agreements with Asian partner countries/regions and, to date,

(1) Commission of the European Communities, Europe 2000+, p. 204.

all Latin American agreements. Environment is also mentioned specifically in the Lomé IV Convention. In Protocol 10 of the Lomé Convention, specific mention is made of the need for efforts to conserve endangered tropical forests and their biodiversity, as well as the development of buffer zones, in conformity with the Biodiversity Convention. Biodiversity has been taken up in the National and Regional Indicative Programmes of several countries/regions under the 8th European Development Fund. The Barcelona Declaration, adopted in November 1995 by the Euro-Mediterranean Conference, covers the environmental sector in detail and on 28 November, in Helsinki, the Euro-Mediterranean Ministerial Conference on the Environment adopted a short and medium term environmental Action Programme for the region, which lays down more concrete actions and priorities. Biodiversity is acknowledged as inter-related to all priority fields of action of the Programme (integrated water management, integrated waste management, hot spots, integrated coastal zone management and combating desertification).

Integration of environmental and biodiversity considerations into development and economic co-operation has two distinct aspects:

- consideration of environment in overall development and co-operation activities to reduce potentially negative impacts on the environment of large-scale infrastructure projects (dams, roads, irrigation projects) which have typically been funded in the past; and
- spending on specific environmental projects.

In addition, current moves to develop a specific policy on indigenous peoples and development co-operation are particularly relevant to the Community's support for Article 8(j) of the Biodiversity Convention which addresses the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity. The Community has also provided financial support for a number of projects that address indigenous peoples' rights and interests in relation to biodiversity.

Integration

Increasing attention is paid to the need to integrate principles of sustainable development into funded projects and other forms of external co-operation to ensure that environmental opportunities are pursued in a positive way.

Both the Lomé Convention and the regulations governing EC co-operation with Asia, Latin America and the Mediterranean contain provisions to consider environmental aspects in all activities. The importance attached to the use of environmental impact assessments (EIA) was further demonstrated by a Resolution of the Council and Member States in 1996 (1) requiring that EIAs be conducted for all development co-operation. The EIA procedures are continuously strengthened through development of clearer rules regarding which projects should be subject to EIAs, improved information flows and the development of support material for project managers. (2)

(1) Resolution of the Council and Member States on Environmental Assessment in Development Cooperation. Adopted 15 July, 1996.
(2) Such as the 1997 EIA Guidance Note of DG IB

In April 1997 the Council adopted Regulation 722/97 (*on environmental measures in developing countries in the context of sustainable development*) which provides for ECU 45 million in the form of grants to a variety of aid recipients for the period 1997-99. This financial assistance is intended for activities in developing countries which enable people to integrate environmental protection and sustainable development concepts in Community programmes and thus into daily life. Activities to be carried out under this Regulation (Article 2) include:

- assisting developing countries in designing and implementing national strategies arising from international conventions;
- preserving biological diversity;
- preserving areas of high environmental pressure and/or trans-regional ecosystems such as marine and coastal areas; and
- initiatives aimed at protecting ecosystems and habitats and maintaining biological diversity.

Spending on Specific Projects

Regulation 443/92 on financial and technical assistance and economic co-operation with the Developing Countries in Asia and Latin America explicitly states that 10% of resources for 1991-95 should be allocated to projects aimed at protecting the environment. A recent evaluation indicates that this target had been met, though more could be done to ensure systematic integration of environment across development activities.

The more recent Regulation 1488/96, which establishes a similar assistance and cooperation programme for Mediterranean countries, contains no specific target for allocation of funds to environmental projects but provides for special interest rate subsidies for loans from the European Investment Bank (EIB) for environmental purposes. Approximately 5% of resources have been committed to environmental spending to date, and other assistance has been provided through the participation of the Commission in METAP (Mediterranean Technical Assistance Programme) (1) and via the activities of the EIB.

In total, funds allocated to environmental projects by the European Commission in the period 1991-95 amounted to 1,339MECU, representing 8.5 per cent of the EC's total commitments to Developing Countries in the Asia, Latin America and Mediterranean and ACP regions. (2) Of this sum, some 6 per cent was devoted to projects specifically targeting biodiversity. Spending on tropical forest projects (see below) also benefits biodiversity.

The European Community intends to strengthen its co-operation with Developing Countries to implement the objectives of the Biodiversity Convention in the context of development and economic co-operation. A two-year project has recently begun, in co-operation with IUCN - The World Conservation Union, aimed at developing guidelines for activities related to biodiversity conservation. The guidelines will be broadly

(1) The World Bank, the European Commission, the European Investment Bank and United Nations Development Programme have set up a programme of pilot actions in favour of the environment in the Mediterranean region.

(2) The EC report to the UN CSD estimates that funds totalling 2.013 MECU were committed to environmental projects in countries outside the EU in the period 1992 to 1994. This figure reflects the inclusion of funding allocated to environment projects by sectoral Directorates as well as funds committed to 'sustainable agriculture' projects which were not defined as a seperate theme in the ongoing evaluation.

modelled on the existing Forest Sector Development Guidelines (as to which, see *Section 3.4.4* above). Immediate objectives will be to improve the planning, implementation and evaluation of biodiversity conservation programmes and to increase the level of effective co-ordination and co-operation between the European Community and Member States in the delivery of such programmes.

Desertification is a priority area in many of the Lomé IV national and regional indicative programmes. In particular, since 1990, about 185MECU has been provided for programmes to combat desertification in Africa, and just under 105MECU for desertification projects in southern Mediterranean countries. These areas are of particular interest for biodiversity since they are likely to contain species at the extreme limits of their range. In addition, the Community has provided funding of around 10MECU to two large projects in Central Asia under the TACIS programme.

Within overall EC spending on development assistance and economic co-operation, two financial instruments exist which are specifically intended to promote environmental and natural resource protection in Developing Countries: the environment and tropical forest budget lines. They are highlighted in *Boxes 4.6* and *4.7* below. In particular, the Council Regulation which governs the tropical forest budget line B7-6201 makes specific mention of the Biodiversity Convention. Under the tropical forests budget line, 40% of funds were committed to the 'conservation and protection' theme (1992-1996). 20% of the environment budget line B7-6200 was committed to the same theme for the same period. EDF funding to the environment gave nearly 9% to this theme. (1) A Regulation on environmental measures in developing countries in the context of sustainable development was adopted in 1997. (2)

Box 3.4.6 Environment in Developing Countries (Budget Line B7-6200)

A budget line for 'environment in Developing Countries' was first launched in 1982. Since UNCED, the budget has been significantly increased and its objectives broadened to include the promotion of sustainable economic and social development and the protection of the environment and natural resources. The financial allocation for 1997 was 15MECU, which represents a decline from the 1993 peak of 26MECU. The Environment budget aims at implementation of smaller pilot programmes which have a catalysing effect. Biodiversity has been a priority since 1992 and more than half the funds have been spent on rural issues (biodiversity, wetlands, natural resources) and coastal and marine areas.

[2](1) Planistat 1997
(2) Regulation 722/97 of 22 April 1997

Box 3.4.7 The Tropical Forests Budget Line (B7-6201)

A special budget line for tropical forests was created in 1991 and was legally underpinned in 1995 with the adoption of a Council Regulation on operations to promote tropical forests.(1) The budget allocation for 1997 was 50MECU. However, other tropical forestry programmes financed by the Community, including research and monitoring activities, bring total spending on tropical forests to about 100MECU per year. The main areas of activity funded are the sustainable management of protected areas and sustainable exploitation of forest resources but special support is also being provided to indigenous peoples who have obtained recognition of collective property rights, as is the case in Bolivia, Brazil, Colombia and Ecuador. In the Philippines, where deforestation rates are particularly high, the Community has helped to establish a network of protected areas designed to safeguard areas of great biodiversity while taking into account the concerns of indigenous peoples (ECU 11 million in 1993). The Avenir des Peuples des Forets Tropicales (APFT) programme (5.2MECU) works at a local level with forest peoples through ACP countries on the conservation and sustainable use of forest resources, and aims to provide practical tools for the integration of forest people and indigenous knowledge into the conservation / sustainable use process.

Economic Co-operation: PHARE and TACIS

Economies in transition face many of the same threats and opportunities in respect of their biotic resources as the European Community but often with the added pressure of acute lack of funding for ongoing management of existing protected areas and genebanks.

The European Community has developed Europe ('Association') Agreements with Poland, Hungary, the Czech Republic, Slovakia, Romania, Bulgaria, Latvia, Lithuania, Estonia and Slovenia which lay the foundations for preparing these countries for membership of the Union.

The PHARE programme aims to help Central and Eastern European Countries (CEECs) to build closer political and economic ties with the European Union. PHARE provides grant finance which assists Central and Eastern European Countries (CEECs) to work on transposing the *acquis communautaire*, including environmental legislation and standards, as well as to build their capacity for monitoring and enforcement. A Technical Assistance Information Exchange Office has been set up costing 10MECU. In addition, an environmental approximation facility, DISAE, has been established costing 10 MECU over 3 years to draw local law into line with that of the Community.

The environment has been a priority area since PHARE's establishment in accordance with the wishes of the CEEC countries themselves. Particular attention has been given to the conservation of biodiversity, mainly through *in situ* conservation and the implementation of the Birds and Habitats Directives. Current initiatives include a multi-country forestry and forest biodiversity programme costing 600,000 ECU and the extension of Natura 2000 to include CEECs. In addition, there are several bilateral programmes between Member States and CEECs in the field of nature conservation.

The emphasis has gradually shifted from technical assistance and institutional strengthening to include more support for investment. PHARE's multi-country programmes have been of particular importance in encouraging regional environmental

(1) Regulation No. EC / 3062 / 95

co-operation, particularly in the Black Triangle, the Black Sea, the Danube river basin, the Baltic Sea and through the Regional Environment Centre in Budapest.

The LIFE Regulation is able to provide funding for projects in Mediterranean and Baltic countries as well as in Central and Eastern European Countries which have Association Agreements with the Community. Many of these 'third country' projects relate to *in situ* actions for nature conservation. An example is set out in *Box 4.8* below.

Box 3.4.8 Examples of LIFE Third Country projects relevant to the objectives of the Convention

- Technical Assistance for establishing a system to help decision-making in natural resource management and the environment in Tunisia (1995). This two-year project sought to share European expertise in the field of treatment and use of remote sensing for environmental decision-making. The two major objectives were to extend the MEDGEOBASE database to cover the whole of Tunisia (it started as a database for coastal zone management) and to enhance its value to the national environment agency (ANPE). The total project cost 587,486 ECU, 79% of which was met by the Commission. Major findings of the project included a comprehensive assessment of land use which has assisted in the improved management and protection of the Tunisian coast.

Since 1991, TACIS has fostered the development of links between the European Union and the Newly Independent States by providing grant finance to support the process of transformation to market economies and democratic societies. Know-how is delivered by providing policy advice, consultancy teams, studies and training, by developing and reforming legal and regulatory frameworks, institutions and organisations and by setting up partnerships, networks, twinning and pilot projects. The annual allocation for the TACIS Programme is around 500 MECU. TACIS tackles environmental problems in the NIS and Mongolia mainly through individual country action programmes, the horizontal integration of environmental concerns in all TACIS projects, actions on an inter-state level where TACIS brings together partner countries to co-operate on a regional level and cross-border co-operation programmes. Environment is, since 1996, a priority sector for the TACIS programme. The aim is that around 10% of the TACIS funds should go to environment related projects covering nature conservation, support to regional seas programmes, agri-environmental projects, energy efficiency, the development of National Environmental Action Programmes and raising public awareness on environmental issues. Environmental is a concentration area within the Interstate and the Cross-Border Co-operation Programmes.

Box 3.9 Examples of TACIS environment projects

- *Karelia Park Development and Management (1997).* Karelia is one of the few regions in Northern Europe where significant forest habitats remain relatively untouched. A belt of taiga forests of high conservation value which stretches across the Russian/Finnish border is now under significant threat from timber exploitation and uncontrolled tourism. The main objectives of the project are to improve the livelihood of local people by developing revenue from eco-tourism and to develop management plans and programmes to conserve the biological diversity and value of the Fennoscandia protected areas. An important aspect of the project consists of strengthening the management and administration capabilities of the staff managing the protected areas. The project will cost 3.5MECU.

- *Tuloma River (1997).* Atlantic Salmon sport fishery is an important economic asset for the Murmansk region. However, the stock of salmon has been declining due to the disturbance of migrational routes from sea to riverine spawning grounds by two hydro-electric dams. A key feature of the project will be an investment appraisal of various technical options for restoring natural salmon production in the Upper Taloma River. It is envisaged that returning the stock of salmon to its original (pre-dam) level will result in a significant increase in revenue from sport fishing. The project will cost 1MECU.

- *Carpathian Transfrontier Environmental Network (1997).* The Carpathian mountain system crosses the territory of five European States and contains more than one third of European plant species, many of which are threatened. In order to protect the valuable landscapes and habitats situated in cross border zones, management plans are being developed for the area in addition to a regulatory framework for conservation. A series of joint pilot sites for sustainable forestry and agriculture projects will be selected and both the Ukraine and Romania are receiving technical assistance in data collection using GIS and training in support of all aspects of the project. The project has been budgeted at 1.5MECU and relates to the GEF project 'Conservation of the Biodiversity of the Trans-Carpathians'.

3.4.9 Implementation and enforcement

Achieving the Community's biodiversity goals is only possible if the legal framework is properly implemented. Unless Community law is properly complied with and effectively enforced in all the Member States, the Community's biodiversity strategy cannot be effective.

As guardian of the Treaty, the Commission is responsible for ensuring that Community legislation is applied and has power to bring Member States before the European Court of Justice for not complying with Community law. These infringement procedures have been actively applied in pursuit of biodiversity objectives. For example, the Commission began 'horizontal' actions against Member States in relation to the notification of habitat sites under the Habitats directive, and the European Court of Justice has also heard a number of cases under the Birds directive. Non-governmental organisations have also been active in litigation at Member State level to ensure effective implementation of these Directives. Both the birds and the habitats directives have given rise to considerable problems of implementation, and together they annually generate a significant number of complaints to the Commission, the majority of which concern threats to individual sites, where the centralised enforcement mechanisms currently available to the Commission face some difficulties.

Achieving effective implementation of Community environmental law is a particularly high priority as the Community consolidates legislation and experiences gained to date.

An October 1996 Commission Communication on Implementing Community Environmental Law[1] highlighted a number of possible new areas for action that could indirectly have beneficial effects on biodiversity, including development of recommendations for the establishment of minimum criteria for the handling of complaints and carrying out of environmental investigations in Member States where such mechanisms are lacking, and examining the need for guidelines on access to national courts by representative organisations with a view to encouraging the application and enforcement of Community environmental legislation. The Communication also contained a number of proposals for improvements in existing systems, including measures to ensure that environmental considerations are fully integrated into decisions to grant financial assistance to Member States and in monitoring of projects financed by the Community.

An informal EU Network for the Implementation and Enforcement of Environmental Law (IMPEL) was established in 1993 and is considered below in *Box 4.10.*

Box 3.4.10 IMPEL

An EU Network for the Implementation and Enforcement of Environmental Law (IMPEL) was established in 1993. Composed of appropriate representatives of the Member States and jointly chaired by the Commission and the Member State holding the Presidency of the Council of the European Union, IMPEL has a wide mandate to consider the implementation of environmental legislation, including questions of how to ensure better enforcement by national, regional and local bodies.

So far, IMPEL has focused on the regulatory life cycle in connection with industrial installations and their impact on the environment. Discussions on EC legislation have touched on the IPPC and EIA Directive, and the EMAS Regulation. A separate Working Group was set up to cooperate on the implementation of the Transfrontier Shipment of Waste Directive, and recently two more on Environmental Prosecutions and Genetically Modified Organisms.

Budget

European Community initiatives relevant to pursuit of the objectives of the Biodiversity Convention straddle the work of many Directorates-General, and biodiversity-related initiatives have been integrated within the programmes or projects envisaged under a great number of budget lines and programmes. Consequently, it is not possible to provide a detailed breakdown of the budget applied by the European Community specifically to implementation of the Biodiversity Convention.

Earlier Sections of this report have highlighted a number of individual budget lines and projects that are available for projects or initiatives relevant to biodiversity outside the Community institutions' core funding. In addition, Commission Directorates-General have commissioned projects relevant to the Biodiversity Convention from other budget lines (e.g. a project examining implementation of Articles 15 and 16 of the Biodiversity Convention from DGXI's core budget).

(1) COM(96) 500 final

An overview of Community budget lines relevant to the Biodiversity Convention is set out in *Table 3.4.11* below.

3.4.11.a Structural and Cohesion funds

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Cohesion Fund (B2-3)	2749MECU	It is proposed that 50% of Cohesion Funds be allocated to environment projects according to the priorities set out in the Fifth Action Programme on the Environment. (1)
European Regional Development Fund (B2-12)	12989.7MECU	Covers Objectives 1, 2 and 5b. Between 1989 and 1993, approximately 7% of Structural Funding under these Objectives was spent on environmental measures. Submission of an environmental impact statement is a requirement for appropriations for Structural Funds. Measures over 50MECU require an environmental compliance clause.
European Social Fund (B2-13)	7639MECU	Covers Objectives 1, 2, 3, 4 and 5b. Includes funding for training in support of the introduction and development of new organisational techniques and new technologies relevant to environmental protection.
EAGGF Guidance section (B2-10)	4026MECU	Covers Objectives 1, 5a and 5b.
Financial instrument for fisheries guidance (B2-11)	490.6MECU	Covers Objectives 5a. Specific environmental measures include investment in equipment to reduce environmental damage from aquaculture, facilities at fishing ports and the production of juveniles for restocking.
Community initiatives: Interreg II (B2-1410)	759MECU	Covers border development, cross-border co-operation and selected energy networks. Many projects funded by Interreg deal with cross-border resource management issues, including habitat management through transfrontier parks.
Community initiatives: LEADER II (B2-146)	333.5M ECU	40% allocated to rural tourism, of which some activities have biodiversity spin-offs. Other eligible environmental measures include promotion of small scale habitat conservation and waste management and promotion of renewable energy production.

(1) Financial Instruments for the Environment (European Commission, November 1996)

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Other agricultural operations: Completion of the internal market: Plant and animal genetic resources (B2-517)	2MECU	Community programme for the conservation, characterisation, collection and utilisation of genetic resources in agriculture (Regulation 1467/94)
Other agricultural operations: Completion of the internal market: Forestry (B2-515)	21MECU	Contributions to projects seeking to protect forests against atmospheric pollution and fires.
Other agricultural operations: Specific small-scale fishing operation (B2-522)	4MECU	Finances pilot projects to guarantee the survival of the small-scale fishing industry.

3.4.11.b Agricultural guarantees

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Accompanying measures: Environment (B1-5011) (EAGGF Guarantee section)	1193.2MECU	Encourages agricultural production methods compatible with the requirements of environmental protection and the maintenance of the countryside.
Accompanying measures: Afforestation (B1-5012) (EAGGF Guarantee section)	362.4MECU	Community aid scheme for forestry measures in agriculture.

3.4.11.c External actions

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Co-operation with Asian Developing Countries (B7-30)	318.7MECU for Financial and technical co-operation (B7-300) 82.4MECU for Economic co-operation (B7-301)	In the period from 1990-1995, 18%of projects funded under these budget lines included environmental activities. (1)
Co-operation with Latin American Developing Countries (B7-31)	190.9MECU for Financial and technical co-operation (B7-310) 64.2MECU for Economic co-operation (B7-311)	In the period from 1990-1995, 11% of projects funded under these budget lines included environmental activities. (2)
Co-operation with Mediterranean Third Countries and the Middle East (B7-40)	15MECU for Financial protocols with Cyprus and Malta (B7-401) 25MECU (3) for Financial protocols with southern Mediterranean countries (B7-405) 836.7MECU for MEDA (measures to accompany the reforms to the economic and social structures in the Mediterranean (B7-41) 82MECU for the Support Programme for the Middle East (B7-42)	In the period from 1990-1995, 5% of projects funded under these budget lines included environmental activities. (4)
European Development Fund VI and VII	246MECU disbursed during the period 1990-1995	In the period from 1990-1995, 3% of projects funded under these budget lines included environmental activities. (5)
Co-operation with countries of Central and Eastern Europe (B7-50)	1206.5MECU	Aid for economic restructuring totals 911MECU, transfrontier co-operation 280MECU and European Training Foundation 15MECU. Funding is available for a variety of environmental projects including co-operation with NGOs.

(1) Inventory of Environment and Tropical Forests Programmes - Final Report (ERM for the Commission, May 1996)
(2) Inventory of Environment and Tropical Forests Programmes - Final Report (ERM for the Commission, May 1996)
(3) Budget payments for 1997, not commitments
(4) Inventory of Environment and Tropical Forests Programmes - Final Report (ERM for the Commission, May 1996)
(5) Inventory of Environment and Tropical Forests Programmes - Final Report (ERM for the Commission, May 1996)

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Co-operation with the New Independent States and Mongolia (B7-52)	540.5MECU	Assistance to economic reform and transfrontier co-operation includes projects relating to environmental protection
Community aid for NGOs: Environment in Developing Countries (B7-6200)	15MECU	Covers the achievement of sustainable development by contributing to a real integration of the environmental dimension in the development process through the creation of suitable instruments and the undertaking of seed projects, with particular attention to desertification control.
Community aid for NGOs: Tropical forests (B7-6201)	50MECU	Focus on conservation of primary tropical forests and capacity building (ie training, legislation, political/social support and strategic research). Finances operations for the protection, regeneration and management of tropical forests.
International Fisheries Agreements (B7-80)	250MECU	Includes contributions to international organisations of 3.7MECU.
Contribution to international environmental activities (B7-811)	4.8MECU	The European Union's participation in the financing of named international environmental agreements including the Bonn and Berne conventions as well as actions to protect the global environment, including forests and biological diversity. Maximum of 0.349M ECU for studies, meetings, information and publications.
Participation in the Global Environmental Facility (B7-812)	9.3MECU	
Agreement with the UN Food and Agriculture Organisation (B7-820)	0.25MECU	
Completion of the external dimension of Community transport policy (B7-840)	1.5MECU	

3.4.11.d Research and technological development

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Environment and climate (B6-213) (4th RTD)	20.55M ECU	Covers research on environment and climate change and marine sciences and technologies. Fields of research include the natural environment, environmental quality and global change; technology for the environment.
Indirect action, concerted action and supplementary programmes: Environment and climate (B6-7131)	134MECU	As above
Indirect action, concerted action and supplementary programmes: Marine sciences and technologies (B6-7132)	54MECU	Covers marine sciences, strategic marine research, marine technology and supporting initiatives. MAST III extends develops and refocuses the activities carried out under the first two MAST programmes. Will enable the Community to make a full contribution to knowledge about and the management of the oceans.
Life sciences and technologies (B6-214) (4th RTD)	4.67M ECU	Covers research on biotechnology; biomedicine and health; agriculture and fisheries (FAIR)
Indirect action, concerted action and supplementary programmes: Life sciences and technologies (B6-714)	381MECU	Biotechnology 135MECU Biomedicine and health 94MECU Agriculture and fisheries 152MECU
Non-nuclear energy (B6-215) (4th RTD)	0.44M ECU	Constituted entirely by research on technologies for cleaner and more efficient energy production and use.
Indirect action, concerted action and supplementary programmes: Non-nuclear technology (B6-715)	258MECU	As above
Research for a European transport policy under the Fourth Framework Research Programme	240M ECU	
Indirect action, concerted action and supplementary programmes: Transport (B6-716)	75MECU	Covers strategic research for a trans-European multi-modal network and network optimisation.

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Co-operation with third countries and international organisations (B6-72)	176MECU	Encourages the exchange of information, co-ordination and stimulation of activities of mutual benefit with non-European industrialised third countries.
Dissemination and exploitation of results (B6-731)	88.6MECU	Seeks to ensure the widest possible dissemination of research results. Covers technology transfer, particularly assistance to SMEs.

3.4.11.e Environmental instruments

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Establishment and development of a common sustainable transport policy (B2-704)	7.5MECU	Includes funds to evaluate the environmental impact of planned transport networks.
Financial Instrument for the Environment (B4-32)	45M ECU	LIFE Environment: innovative and demonstration actions for industry; demonstration, promotion and technical assistance actions for local authorities, preparatory actions to support community legislation and policies
	207MECU	LIFE Nature: actions aiming at the conservation of natural habitats and of wild fauna and flora of EU interest.
	4.5MECU	LIFE Third Countries (B7-810): technical assistance in the establishment of environmental administrative structures, nature conservation actions and demonstration actions to promote sustainable development.
Civil protection (B4-33)	1.5M ECU (commitments for 1995)	Community co-operation on civil protection, including environmental emergencies and measures aimed at preparing for and dealing with such emergencies.

Budget Line	Budget commitment (1997 annual figure unless otherwise indicated)	Relevance to Biodiversity/Environment
Legislation and other general action based on the Fifth Action Programme on the Environment (B4-304)	13.6MECU	Includes environmental education and training on which about 1MECU is spent annually.
Awareness and subsidies (B4-306)	8.65M ECU	This budget line covers initiatives including financing of general measures to educate and increase awareness of environmental problems and their effects on public health including core funding for representative European NGOs whose principal activity is in the field of environmental protection. A maximum of 350,000 ECU covers expenditure on studies, publications, conferences, expert meetings etc.

4 THE FUTURE

4.1 INTRODUCTION

In spite of past efforts of the Community, described in the previous chapter, to address the problem of biodiversity reduction or loss, existing measures are insufficient to reverse present trends. It is therefore both essential and urgent for the Community to take action towards the conservation and sustainable use of biological diversity. For this reason, the European Commission adopted on 4 February 1998 a Communication on a European Community Biodiversity Strategy.

In a wider scale, two other major initiatives are of particular importance as they are likely to have an important positive impact on biodiversity:

- developments and trends outlined in the Commission Communication *Agenda 2000*; and
- the development of priorities to the year 2000 following on from the progress review of the Fifth Environmental Action Programme;

This *Part* outlines the main orientations of these initiatives in relation to biodiversity.

4.2 THE EUROPEAN COMMUNITY BIODIVERSITY STRATEGY

As a key player on an international level, it is evident that the Community must ensure that its own policies, many of which impact significantly on biodiversity, reflect concerns about and contribute to the conservation and sustainable use of biodiversity. The Community Biodiversity Strategy (COM (98) 42 final), adopted by the European Commission on 4 February 1998, provides the framework for developing Community policies and instruments in order to comply with the CBD.

The Community Biodiversity Strategy therefore aims to anticipate, prevent and attack the causes of significant reduction or loss of biodiversity at the source. This will help both to reverse present trends in biodiversity reduction or losses and to place species and eco-systems, which includes agro-ecosystems, at a satisfactory conservation status, both within and beyond the territory of the European Union.

The Community's legal obligations under the CBD and are set out in section II of the strategy, in the context of four major themes. The objectives to be achieved in the context of the relevant Community policies and instruments in order to meet these obligations, are specified in section III of the strategy. The policy areas concerned are 1) conservation of natural resources, 2) agriculture, 3) fisheries, 4) regional policies and spatial planning, 5) forest, 6) energy and transport, 7) tourism and 8) development and economic cooperation

Specific sectoral and cross-sectoral Action Plans and other measures will subsequently define how to integrate biodiversity concerns into the main policy areas. By establishing a mechanism to ensure the integration of biodiversity concerns into other policy areas and instruments the strategy contributes to fill a gap in existing Community conservation policy.

Action Plans are envisaged for conservation of natural resources, agriculture, fisheries, regional policies and spatial planning and development and economic co-operation. For

the other policy areas, the objectives formulated in their respective sections will be taken directly into account for their further development and implementation. In the case of regional policies and spatial planning the specific Action Plan will have to ensure that the objectives pursued by the biodiversity strategy are directly incorporated in the future programming guidelines as well as relevant Community initiatives and this will not imply the development of specific new instruments. Proposals for action on forestry will be part of the proposal for a EU Forestry strategy. Energy and transport do not require new specific action plans as the development and implementation of the Community strategies on climate change and acidification, which have a focus on ecosystems, together with the implementation of adequate environmental assessment procedures should de adequate to achieve the biodiversity objectives in these policy areas. For tourism, the implementation of environmental assessment and initiatives to be taken in the field of regional policies and spatial planning should help achieving the biodiversity objectives. The Action plans will develop further the links between the objectives for each theme and the objectives in each sectoral policy.

Each Action Plan should as a general rule set out clear tasks, targets and mechanisms to assess their performance and to evaluate progress in the implementation of the strategy. The Commission will in co-operation with relevant bodies identify indicators in order to enable an evaluation ex ante and ex post of the implementation of the Action Plans. The process of further development, implementation and monitoring of the Action Plans is described in section IV of the strategy. Following the adoption of the Action Plans, it will be the responsibility of the Commission through its relevant services to ensure their implementation.

As the Community and its Member States participate in a number of international conventions and agreements relevant to the objectives of the Convention on Biological Diversity, this strategy provides guidance to ensure coherence in initiatives taken in different international fora. Implementing this strategy, therefore, will help achieve Community objectives under other Conventions.

All Member States of the Community are Contracting Parties to the CBD. As a consequence, they have either already developed their national strategies or are in the process of doing so. By developing and implementing their national strategies Member States make an essential contribution to achieve the aims of the Convention. An up to date review of this strategies is contained in the Member States´reports to the Conference of the Parties on the implementation of the CBD. However, successful implementation of the CBD requires co-operation both within Member States and at Community level. To develop and implement national strategies in all Member States is essential, but a number of Community policies and instruments also have an important impact on biodiversity. The Community therefore needs to take action in these areas to both complement and avoid frustrating national efforts. The Community strategy focuses on the further development and implementation of Community policies and instruments.

4.3 DEVELOPMENT OF A NEW ENVIRONMENTAL ACTION PLAN

The Community Biodiversity Strategy is an element of the 5th Environmental Programme. Looking to the future, the implementation of the Biodiversity Strategy will benefit from further developments of the Environmental Action Plan. A continued combination of emphasis on sectoral policy reform and certain cross-cutting measures provides the potential to improve prospects for conservation and sustainable use of biodiversity within the Community. Sectoral policy reform in the agriculture and

transport sectors will be particularly important.

Cross-cutting measures with the potential to include strategic environmental impact assessment; measures to internalise external costs (particularly in transport) and integration measures adopted within the Commission services are also likely to be a key feature.

Following the progress review of the Fifth Environmental Action Programme (described in Part 2 above), the European Commission made a proposal for a Decision on the review of the Fifth Environmental Action Programme by the Council of Ministers and the European Parliament. The proposal is currently under consideration.

The proposal reconfirms the commitment to the approach set out in the Fifth Environmental Action Programme and aims at ensuring its more efficient implementation for the remaining period up to the year 2000, in particular by intensifying effort on ten key issues which are summarised in *Box 5.1* below. These range from a greater emphasis on integration, implementation and enforcement to broadening the range of policy instruments used, including promotion of new concepts and general awareness raising.

Box 4.1 Proposals in the draft Decision on the Review of the Fifth Environmental Action Programme

Key priorities for implementation

(i) Specific measures integrating the environment in agriculture; transport; energy; industry; tourism

(ii) Broadening the range of instruments
- develop the use of market-based instruments
- targeted revision to improve effectiveness of European Union regulations
- further develop Eco-Management and Audit Scheme (EMAS)
- sustainable use of Community financial mechanisms

(iii) Implementation and enforcement
- improve legislation
- improve reporting requirements
- enhance cooperation between authorities at different levels
- consider sanctions for non-compliance

(iv) Awareness-raising and information
- prepare targeted information and communication strategy
- improve access to information
- enhance training and education

(v) International cooperation
- reinforce role in international sustainable development issues
- integrate environment and trade policies
- strengthen cooperation particularly with central and eastern Europe and the Mediterranean countries
- improve the environmental dimension of development cooperation

Other priorities for implementation

(vi) Improve the data and research and development basis for environmental policy-making

(vii) Promote sustainable production and consumption

(viii) Promote shared responsibility and partnership

(ix) Promote local and regional initiatives

(x) Give further attention to the main environmental themes
(climate change and ozone depletion, acidification and air quality, management of water resources, waste management, noise, nature protection and biodiversity, management of risks and accidents)

4.4 AGENDA 2000

The European Community's policies do not operate in a vacuum. The setting within which the European Community pursues its objectives is fast-moving: demographic trends; globalisation; and the development of new technologies all present new challenges; the prospective enlargement of the European Union represents potential for a historic turning point. These and other developments will have an impact on the Community's future actions for implementing its commitments under the Biodiversity Convention.

The Commission's July 1997 Communication *Agenda 2000: for a Stronger and Wider Union* (1) outlines broad perspectives for the development of the Union and its policies beyond the turn of the century; the horizontal issues related to enlargement; and the future financial framework beyond 2000, taking account of the prospect of an enlarged Union. Key chapters deal with the Structural Funds; agricultural policy; and enlargement. A number of initiatives put forward in the paper may have implications for biodiversity. It will be an important challenge to ensure that those initiatives will contribute to meeting the Community's commitments under the Biodiversity Convention.

The main elements of Agenda 2000 are as follows:

- Reform of the structural funds. For the next period (2000-06) it is proposed that 275,000MECU be set aside for the Structural Funds and the Cohesion Fund. In pursuit of greater concentration, effectiveness and simplification of structural measures, it is proposed that the number of Objectives under the Structural Funds be reduced from seven to three.

- Enlargement will bring with it greater heterogeneity to the EU, requiring sectoral and regional adjustments, particularly in relation to agriculture and the structural funds. Substantial investments are envisaged in a number of the key areas for biodiversity, including environmental protection; transport; energy; industrial restructuring; agricultural infrastructure and rural society. Total pre-accession assistance over the period 2000-2006 is proposed at 21,000MECU.

- A new financial framework is put forward by the Commission, designed to enable the Union to finance its essential requirements over the medium term.

- The reforms suggested for agriculture policy involve further shifts from price support to direct payments for environmental benefits provided by farmers, coupled with the development of a coherent rural policy to accompany this process. The Commission sets out a number of objectives for the CAP, including integration of environmental goals into the CAP and the promotion of sustainable agriculture.

The Community Biodiversity Strategy defines how biodiversity concerns will be taken account of in this process.

(1) COM(97)2000 final

INTRODUCTION TO THE EUROPEAN COMMUNITY

Introduction

This Annex briefly outlines the structure of the European Community and describes how legislation and decisions are made in the Community at the time of the report. It does not attempt to give an exhaustive account of the institutions and workings of the Community but is intended to help the reader who is unfamiliar with the Community.

The European Community is a supra-national entity in which its Member States have pooled part of their sovereignty and thus the capacity to take internal action as well as to commit themselves internationally. The Community was originally founded by 6 Countries but has since then expanded to its current number of fifteen Member States: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

It is likely that the enlargement of the Community will continue, as a number of countries in Europe have applied for Membership. The European Council of December 1997 decided that negotiations for accession will start soon with the following six countries Poland, Czech Republic, Hungary, Estonia, Slovenia and Cyprus.

The European Community's constitutional framework is set out in the 1957 Treaty of Rome (which established the European Economic Community), as amended through subsequent negotiations by the Single European Act and the Treaty on European Union (the 'Maastricht Treaty') which amended the Treaty of Rome and established the 'European Union'. A further revision to the treaties (the Amsterdam Treaty) which was agreed at the Amsterdam Summit in June 1997 and signed on 2nd October 1997, is currently open for ratification.

Box 4.1 European Community or European Union?

The terms 'European Union' and 'European Community' are sometimes used interchangeably, but in fact the European Union is broader than the European Community, encompassing not only the activities of the European Community, but also the still intergovernmental areas of a Common Foreign and Security Policy and co-operation in the field of Justice and Home Affairs. The European Union is however a political entity and does not have legal personality nor the capacity to adhere to international legally binding instruments such as the Convention on Biological Diversity. It is therefore the European Community which is a Party to the Convention.

Community Institutions

Introduction

The European Community has five institutions. The Council, the European Parliament, the European Commission and the European Court of Justice which provide its executive, legislative and judicial arms of governance. The Court of Auditors carries out the audit and examines the accounts of the revenue and expenditure of the Community. Their respective roles are set out in the European Community's constitutional framework, the Treaty on European Union. In addition the Economic and Social Committee as well as the Committee of the Regions fulfil consultative functions. Finally, a series of decentralised agencies were established at the beginning of the 1990s to provide technical advice to Community institutions and Member States, among them the European Environment Agency, which plays an important role in implementation of the Biodiversity Convention within the Community.

The Council

The Council is the main legislative body of the Community. The European Council is the twice yearly meeting of all the European Heads of State or Government and the President of the European Commission, assisted by Foreign Ministers and a Member of the European Commission. The Council is made up of representatives from the Member States at Ministerial level. Meetings are attended by different ministers according to the subjects under discussion. Hence Council meetings on foreign affairs are attended by Foreign Ministers and meetings about environmental issues are attended by Environment Ministers. There is also a Permanent Representatives Committee comprised of Member States' Ambassadors to the Union (COREPER), which prepares the work of the Council. Specialised Council Working Groups prepare the work of the COREPER. The Council formally adopts European laws and directs intergovernmental co-operation under the headings of Community activities, common foreign and security policy, and justice and home affairs. The Presidency of the Council rotates every six months between the Member States.

The European Parliament

The European Parliament is directly elected. It shares legislative power with the Council in a large amount of areas among those the budget of the Community. The Parliament acts also as a watchdog body and can question the Council and the Commission. It can demand the resignation of the European Commission as a measure of last resort.

The European Court of Justice

The European Court of Justice is responsible for legal review and the settlement of disputes on rights and obligations of Community institutions or the Member States under Community law. It is also the competent authority in matters of Treaty interpretation, and is empowered to enforce, interpret or overturn legislation or other acts of the Council, the European Parliament and the European Commission at the request of Community institutions, Member States, national courts or individuals.

The European Commission

The European Commission is the executive body of the European Union. It is the guardian of the Treaties of the Union and has the sole right to initiate legislation. The European Commission has 20 members (two each from France, Spain, UK, Germany and Italy, and one from each of the remaining Member States). Commissioners are appointed by national governments but sit independently. Each Commission Member is responsible for one or more policy areas, although decision-making within the Commission is collegiate.
The tasks of the European Commission are divided among twenty-four Directorate-Generals, together with a number of 'Service' divisions including the legal service and Eurostat. The Commission is staffed by an independent 'civil service' drawn from all of the Member States. *Box 1.2* below sets out the overall structure of the Commission Services.

Community action and law making

The Community has the possibility to legislate in a wide number of areas such as trade, agriculture, fisheries, industry, environment, social affairs, etc. The Community's institutional structure allows for effective implementation and enforcement of policy through a wide range of means.

Through its institutions, the European Community has power to make binding legislation as well as the power to undertake other non-binding acts.
Community legislation may take a number of forms (highlighted in *Box* below), with or without legally binding effect. Depending on its precise form and content, it may be binding throughout the Community not only on Member States, but also individuals, companies and other legal entities.
The procedures for adopting the various legal instruments vary according to their subject matter, and in accordance with detailed requirements set out in the Treaty. Most measures relevant to environmental protection are proposed by the Commission and adopted in the Council of Ministers by means of a 'qualified majority' vote under which individual Member State votes are weighted in accordance with allocations set out in the Treaty.

The European Parliament also has a key role in the legislative process, in particular by proposing amendments and with a right of co-decision in a large number of areas, including many environmental matters.

Box 4.2 The Commission Directorates-General and Services

Secretariat-General of the Commission
Legal Service
Inspectorate-General
Spokesman's Service
Joint Interpreting and Conference Service
Statistical Office
Translation Service
Informatics Directorate

DGI External Relations:	Commercial Policy and Relations with North America, the Far East, Australia and New Zealand
DGIA External Relations:	Europe and the New Independent States, Common Foreign and Security Policy and External Missions
DGIB External Relations:	Southern Mediterranean, Middle and Near East, Latin America, South and South-East Asia and North-South Co-operation
DGII	Economic and Financial Affairs
DGIII	Industry
DGIV	Competition
DGV	Employment, Industrial Relations and Social Affairs
DGVI	Agriculture
DGVII	Transport
DGVIII	Development
DGIX	Personnel and Administration
DGX	Information, Communication, Culture, Audio-visual
DGXI	Environment, Nuclear Safety and Civil Protection
DGXII	Science, Research and Development
DGXIII	Telecommunications, Information Market and Exploitation of Research
DGXIV	Fisheries
DGXV	Internal market and financial services
DGXVI	Regional Policies and Cohesion
DGXVII	Energy
DGXIX	Budgets
DGXXI	Customs and Indirect Taxation
DGXXII	Education, Training and Youth
DGXXIII	Enterprise Policy, Distributive Trades, Tourism and Co-operatives
DGXXIV	Consumer Policy and Consumer Health Protection

European Community Humanitarian Office
Euratom Supply Agency
Office for Official Publications of the European Communities

Box 4.3 Instruments of the European Community

- *Regulations:* Regulations are legally binding on Member States, individuals, companies and other legal entities directly, without the need for national implementing measures. An example of a Regulation relevant to biodiversity is Council Regulation 338/97 on the implementation in the Community of the Convention on International Trade in Endangered Species of wild flora and fauna (CITES).

- *Directives:* Directives are binding on all those to whom they are addressed as to the results to be achieved and the time within which to achieve it, but leave the choice of the means of implementation to individual Member States. An example of a Directive relevant to biodiversity is Directive 92/43/EC on the conservation of natural habitats and of wild fauna and flora (the habitats directive).

- *Decisions:* Decisions of the Council or the Commission are binding in their entirety only on their addressees, who may be Member States or individuals or other legal entities. An example of a Council Decision relevant to the Biodiversity Convention is Council Decision 93/626/EEC concerning the conclusion of the Convention on Biological Diversity.

- *Recommendations and Opinions:* Commission or Council Recommendations and opinions are not legally binding.

- *Communications:* Commission Communications have no legal force, simply providing policy guidance or suggested actions. An example relevant to biodiversity is the Communication to the Council and to the Parliament on a European Community Biodiversity Strategy (COM(98) 42 final).

ANNEX B

INTERNATIONAL CONVENTIONS AND AGREEMENTS TO WHICH THE EUROPEAN COMMUNITY IS A PARTY AND WHICH ARE RELEVANT TO ITS INTERNATIONAL ACTION IN FAVOUR OF BIODIVERSITY

1. Convention for the prevention of marine pollution from land-based sources (04.06.1997, Paris).

2. Convention for the protection of the Mediterranean Sea against pollution (16.02.1976, Barcelona).

3. Convention for the protection of the Rhine against chemical pollution and an Additional Agreement to the Agreement, signed in Berne on 29.4.1963 concerning the International Commission for the Protection of the Rhine against Pollution (03.12.1979, Bonn).

4. Convention on the conservation of migratory species of wild animals (23.06.1979 Bonn).

5. Convention of the conservation of European wildlife and natural habitats (19.09.1979, Bern).

6. Convention on long-range transboundary air pollution (13.11.1979, Geneva).

7. Convention on the conservation of Antarctic marine living resources (20.0501980, Canberra).

8. Convention on fishing and conservation of the living resources in the Baltic Sea and the Belts as amended by the Protocol to the Conference of the representatives of the states parties to the Convention signed in Warsaw to permit the accession of the Community (11.11.1982, Warsaw).

9. Convention on the Law of the Sea (10.12.1982, Montego Bay, Jamaica)

10. Convention for the protection and development of the marine environment of the wider Caribbean region (24.03.1983, Cartagena de Indias).

11. Agreement for the cooperation in dealing with pollution of the North Sea by oil and other harmful substances (13.09.1985, Bonn).

12. Convention for the protection of the Ozone Layer (22.03.1985, Vienna).

13. Convention for the protection, management, and development of the marine and coastal environment of Eastern Africa region (21.06.1985, Nairobi).

14. Agreement between the Federal Republic of Germany and the EEC, on one hand, and the Republic of Austria, on the other, on cooperation on management of water resources in the Danube Basin (01.12.1987, Regenburg).

15. Convention on the control of transboundary movements of hazardous wastes and their disposal (22.03.1989, Basel).

16. Convention on the International Commission for the protection of the Elbe (08.10.1990).

17. Cooperation Agreement for the protection of the coasts and waters of the North East Atlantic against accidental pollution (17.10.1990, Lisbon).

18. Convention on Environmental Impact Assessment in a transboundary context (25.2.1991, Espoo).

19. Convention on the protection of the Alps (07.11.1991, Salzburg).

20. Protocols to the Convention for the Protection of the Alps.

21. Convention on transboundary effects of industrial accidents (17.03.1992, Helsinki).

22. Convention on the protection and use of transboundary watercourses and international lakes (17.03.1992).

23. UN Agreement on the conservation of small cetaceans of the Baltic and North Seas (17.03.1992, New York).

24. Convention on the protection of the marine environment of the Baltic Sea area (1991 revised Helsinki Convention) (09.04.1992, Helsinki).

25. Convention on the protection of the marine environment of the Baltic Sea area (1974 Helsinki Convention) 22.03.74, Helsinki).

26. Framework Convention on Climate Change (09.05. 1992, New York).

27. Convention for the protection of the marine environment of the North East Atlantic (Revised Oslo / Paris Convention, 22.09.1992, Paris).

28. Convention on cooperation for the protection and sustainable use of the Danube (29.06.1994, Sofia).

29. Convention on Desertification (UN-Rio follow-up, 14.10.1994, Paris).

In addition, the Community has implemented the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES - 03.03.73, Washington) and intends to become a party.

ANNEX C

Table 4.2 Legal Instruments Referenced in the report

Theme/Sector	Legal Instruments Directly Related to the Biodiversity Convention
Conservation of Natural Resources	• Directive 79/409 on the conservation of wild birds • Directive 92/43 on the conservation of natural habitats and of wild fauna and flora • Regulation 1973/92 establishing a financial instrument for the environment, as amended by Regulation 1404/96 • Directive 85/337 on Environmental Impact Assessment, as amended by Directive 97/11 • Regulation 1467/94 on conservation, characterisation, collection and utilisation of genetic resources in agriculture
Agriculture	• Regulation 2078/92 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside • Regulation 1467/94 on conservation, characterisation, collection and utilisation of genetic resources in agriculture • Regulation 1765/92 establishing a support system for producers of certain arable crops • Regulation 805/68 on the common organisation of the market in beef and veal • Directive 74/63 on the fixing of maximum permitted levels for undesirable substances and products in feedingstuffs • Directive 76/895 related to the fixing of maximum levels for pesticide residues in and on fruit and vegetables • Directive 86/362 on the fixing of maximum levels for pesticide residues in and on cereals • Directive 86/363 on the fixing of maximum levels for pesticide residues in and on food stuffs of animal origin • Directive 90/642 on the fixing of maximum levels for pesticide residues in and on certain products of plant origin, including fruit and vegetables • Directive 79/117 prohibiting the placing on the market and use of plant protection products containing certain active substances • Directive 91/414 concerning the placing of plant protection products on the market • Directive 77/93 on spread of organisms harmful to plants on protective measures against the introduction into the Member States of harmful organisms of plants or plant products • Directive 77/93 on protective measures against the introduction into the Member States of harmful organisms of plants or plant products • Directive 90/219 on the contained use of genetically-modified micro-organisms • Directive 90/220 on the deliberate release into the environment of genetically-modified organisms • Directive 93/114 amending Directive 70/524 concerning the additives in feeding-stuffs • Regulation 2309/93 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing the European Agency for the Evaluation of Medicinal Products • Regulation 258/97 concerning novel foods and novel food ingredients • Regulation 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs

Theme/Sector	Legal Instruments Directly Related to the Biodiversity Convention
	• Regulation 2081/92 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs • Regulation 2082/92 on certificates of specific character for agricultural products and foodstuffs • Regulation 2100/94 on Community variety plant rights • Directive 75/268 on mountain and hill farming and farming in certain less-favoured areas • Regulation 2328/91 on improving the efficiency of agricultural structures
Forestry	• Regulation 1610/89 laying down provisions for implementing Regulation 4256/88 as regards the scheme to develop and optimally utilise woodlands in rural areas in the Community • Regulation 2080/92 instituting a Community aid scheme for forestry measures in agriculture • Regulation 3528/86 on the protection of the Community's forests against atmospheric pollution • Regulation 2158/92 on protection of the Community's forests against fire • Regulation 1615/89 establishing a European Forestry Information and Communication System (Efics) • Regulation 2381/94, amending Regulation 2082/91 on organic production of agricultural products and indications thereto on agricultural products and foodstuffs • Regulation 1256/96 applying multiannual schemes of generalised tariff preferences from 1 July 1996 to 30 June 1999 in respect of certain agricultural products originating in developing countries • Regulation 3381/94 setting up a Community regime for the control of exports of dual-use goods • Regulation 3062/95 on operations to promote tropical forests • Regulation 1467/94 on conservation, collection and utilisation of genetic resources in agriculture
Fisheries	• Regulation 3760/92 establishing a Community system for fisheries and aquaculture
Regional Policies and Spatial Planning	• Directive 85/337 on Environmental Impact Assessment, as amended by Directive 97/11
Transport and Energy	• Directive 88/609 on the limitation of emissions of certain pollutants into the air from large combustion plants • Directive 93/12 relating to the sulphur content of certain liquid fuels
Tourism	• Decision 92/421, Action Plan to Assist Tourism
Development and Economic Co-operation	• Lomé IV Convention • Regulation 722/ 97 on environmental measures in developing countries in the context of sustainable development • Regulation 443/92 on financial and technical assistance to, and economic co-operation with, the developing countries in Asia and Latin America • Regulation 1488/96 on financial and technical measures to accompany (MEDA) the reform of economic and social structures in the framework of the Euro-Mediterranean partnership
Conservation and sustainable use of biodiversity	• Directive 79/409 on the conservation of wild birds • Directive 92/43 on the conservation of natural habitats and of wild fauna and flora • Regulation 1973/92 establishing a financial instrument for the environment, as amended by Regulation 1404/96 • Regulation 938/97 implementing Regulation 97/338 on the protection of species of wild fauna and flora by regulating trade therein • Regulation 2078/92 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside

Theme/Sector	Legal Instruments Directly Related to the Biodiversity Convention
	• Directive 77/93 on protective measures against the introduction into the Member States of harmful organisms of plants or plant products • Directive 90/219 on the contained use of genetically-modified micro-organisms • Directive 90/220 on the deliberate release into the environment of genetically-modified organisms • Directive 93/114 amending Directive 70/524 concerning the additives in feeding-stuffs • Regulation 2309/93 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing the European Agency for the Evaluation of Medicinal Products • Regulation 258/97 concerning novel foods and novel food ingredients • Regulation 1467/94 on conservation, collection and utilisation of genetic resources in agriculture • Directive 85/337 on Environmental Impact Assessment, as amended by Directive 97/11 • Regulation 92/880 on a Community ecolabelling award scheme • Regulation 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs • Regulation 2081/92 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs • Regulation 2082/92 on certificates of specific character for agricultural products and foodstuffs
Equitable sharing of benefits	• Regulation 2100/94 on Community plant variety rights
Identification and Monitoring	• Regulation 1467/94 on the conservation, characterisation, collection and utilisation of genetic resources in agriculture • Regulation 1210/90 establishing the European Environment Agency
Research and exchange of information	• Regulation 1210/90 establishing the European Environment Agency • Directive 90/313 on freedom of access to information on the environment
Education, training and awareness	• Regulation 1973/92 establishing a financial instrument for the environment, as amended by Regulation 1404/96 • Directive 90/313 on freedom of access to information on the environment

Table 4.2 Policy Documents Referred to in this report

Theme/Sector	Policy Documents Directly Related to the Biodiversity Convention
Conservation of Natural Resources	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Fourth Research Framework Programme • Proposal for a Fifth Research Framework Programme (COM (97) 142) • Pan-European Biological and Landscape Diversity Strategy • Understanding biodiversity: an agenda for research into Biodiversity prepared by the European Working Group on Research and Biodiversity
Agriculture	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Fourth Research Framework Programme • Mid-term report on the First Workprogramme under Regulation 1467/94 on conservation, characterisation and utilisation of genetic resources in agriculture, June 1997
Forestry	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Work Programme on the Conservation and Enhancement of Biological and Landscape Diversity in Forest Ecosystems • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Fourth Research Framework Programme • Workprogramme on the Conservation and Enhancement of Biological and Landscape Diversity in Forest Ecosystems (Council of Europe, UNEP, European Centre for Nature Conservation) • Tropical Forest Programme (to be finalised in 1998) • Pan-European Biological and Landscape Diversity Strategy • Commission Communication to the Council on the role of the Community in the preservation of forests, 1989

Theme/Sector	Policy Documents Directly Related to the Biodiversity Convention
	• Forest Sector Development Guidelines, defined in Resolution 2 of the Ministerial Conference on the Protection of Forests in Europe, Helsinki, 1993
Fisheries	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Fourth Research Framework Programme • Multi-Annual Guidance Programme (MAGP)
Regional Policies and Spatial Planning	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • European Spatial Development Perspective • Europe 2000+
Transport and Energy	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • Environment in the European Union • Fourth Research Framework Programme • Commission Communication on the Energy Dimension of Climate Change (COM (97) 196) • Auto-Oil Programme • Trans-European Transport Networks (TEN) Guidelines • EC Strategy to Combat Acidification
Tourism	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • Environment in the European Union • Environment and the Regions: Towards Sustainability • Community Actions Affecting Tourism, 1997
Development and Economic Co-operation	• 'Towards Sustainability': The Fifth Environmental Action Programme

Theme/Sector	Policy Documents Directly Related to the Biodiversity Convention
	• 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • Environment in the European Union • Barcelona Declaration, 1995 • Short and Medium Term Environmental Action Programme of the Euro-Mediterranean Ministerial Conference on the Environment • Resolution of the Council and Member States on Environmental Impact Assessment in Development Co-operation • Agenda 2000
Conservation and sustainable use of biodiversity	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Fourth Research Framework Programme • Green Paper on Remedying Environmental Damage, 1993 • White Paper on Community Action as regards environmental liability, 1997 • Work Programme on the Conservation and Enhancement of Biological and Landscape Diversity in Forest Ecosystems • Pan-European Biological and Landscape Diversity Strategy • Understanding biodiversity: an agenda for research into Biodiversity prepared by the European Working Group on Research and Biodiversity
Equitable sharing of benefits	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • The Innovation Programme, Council Decision 94/914 • Environment in the European Union
Identification and Monitoring	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Fourth Research Framework Programme • Proposal for a Fifth Research Framework Programme (COM (97) 142) • Europe's Environment: The Dobris Assessment • Indicators for Sustainable Development • State of the Environment Reports for Europe, 1995 • Environment in the European Union

Theme/Sector	Policy Documents Directly Related to the Biodiversity Convention
Research and exchange of information	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Fourth Research Framework Programme • Proposal for a Fifth Research Framework Programme (COM (97) 142) • The Innovation Programme, Council Decision 94/914 • Framework Programme for Priority Action in the Field of Statistical Information • Europe's Environment: The Dobris Assessment • State of the Environment Reports for Europe, 1995 • Environment in the European Union • Understanding biodiversity: an agenda for research into Biodiversity prepared by the European Working Group on Research and Biodiversity
Education, training and awareness	• 'Towards Sustainability': The Fifth Environmental Action Programme • 'Towards Sustainability': The European Commission's Progress Report and Action Plan on the Fifth Environmental Action Programme • Europe's Environment: The Dobris Assessment • Fourth Research Framework Programme • The Innovation Programme, Council Decision 94/914 • Commission Communication on Environment and Employment