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PROTECTION OF FORESTS IN EUROPE

LIAISON UNIT VIENNA



MCPFE Paper 3, April 2003

WHERE TO FIND FOREST DATA

A Pan-European Overview of
International Institutions and Networks

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A Pan-European Overview of International
Institutions and Networks for Data
Collection, Storage and Reporting Related
to Sustainable Forest Management in 2003

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Preface

During 2001 and 2002 the MCPFE conducted a process of improving the Pan-European Indicators for Sustainable Forest Management with the involvement of a broad range of actors. In the course of this improvement process the MCPFE aimed to build on up-to-date forest-related information and was looking into an overwhelming and complex amount of facts and figures. In order to get an overview of all this information the MCPFE Paper 3 “Where to Find Forest Data. A Pan-European Overview of International Institutions and Networks” was elaborated.

A multitude of institutions are working to monitor, assess and report forest-related information. The number of Internet web-sites, documents and databases on forest-related matters has rapidly increased during the last few years, making this information much more accessible for interested persons.

In a snapshot of information of early 2003, this paper intends to show which institutions contribute mainly to the provision of adequate forest-related databases and reports with a pan-European focus. It aims to help decision-makers, researchers and practitioners in locating sources of reliable, profound and updated data related to forests, forestry and sustainable forest management.

The compilation of the information contained in this paper would not have been possible without the kind support of many organisations and contact persons providing information on forest-related data sources. I sincerely want to thank all of them.

April 2003

A handwritten signature in black ink, appearing to read 'Peter Mayer', with a stylized, cursive script.

Peter Mayer
Head of the MCPFE Liaison Unit Vienna

Introduction

The MCPFE Paper *"Where to Find Forest Data – A Pan-European Overview of International Institutions and Networks for Data Collection, Storage and Reporting Related to Sustainable Forest Management in 2003"* has been compiled by the MCPFE Liaison Unit Vienna in the course of the improvement of the Pan-European Indicators for Sustainable Forest Management.

This paper provides a comprehensive overview of relevant data sources on forests, forestry and sustainable forest management (SFM) in Europe. It briefly introduces around 25 major international institutions as well as diverse networks which focus on data collection, data storage and reporting in this field of interest.

The paper should give an overview of the institutional landscape and the multiple activities that are on-going in Europe. The overview and information contained in the paper is based on a broad review of literature and the World Wide Web. All listed data providing institutions and networks were contacted directly in order to confirm or up-date the information.

After a brief description of each institution, listed in alphabetical order, the report provides SFM relevant data and information services, including periodical data reports. Also some further SFM relevant information services with no direct relation to a major co-ordinating institution are shortly presented.

The geographic focus of this overview is Europe. It presents multinational databases and reports which range from databases and reports covering only a few European countries (e.g. EU 15) to global databases and reports with a European component. If more than one organisation contributes to data collection, storage and distribution the databases or reports are listed under the co-ordinating institution.

1 COUNCIL OF EUROPE (COE)

The 'Council of Europe' is an intergovernmental organisation which aims to

- Protect human rights, pluralist democracy and the rule of law
- Promote awareness and encourage the development of Europe's cultural identity and diversity
- Seek solutions to problems facing European society (discrimination against minorities, xenophobia, intolerance, environmental protection, human cloning, Aids, drugs, organised crime, etc.)
- Help consolidate democratic stability in Europe by backing political, legislative and constitutional reform

The Council of Europe covers all major issues facing European society other than defence, including the environment and forests. More information is available at: <http://www.coe.int>

SFM relevant data and information services provided by CoE

1.1 Pan-European Ecological Network

The Pan-European Biological and Landscape Diversity Strategy seeks to conserve ecosystems, habitats, species, their genetic diversity, and landscapes of European importance through the development of the Pan-European Ecological Network within ten years. It contributes to achieving the main goals of the Strategy by ensuring that: a full range of ecosystems, habitats, species and their genetic diversity and landscapes of European importance are conserved; habitats are large enough to place species in a favourable conservation status; there are sufficient opportunities for the dispersal and migrations of species; and damaged elements of the key systems are restored and the systems are buffered from potential threats. More information is available at:

http://www.coe.int/t/e/Cultural_Co-operation/Environment/Nature_and_biological_diversity/Ecological_networks/PEEN/default.asp#TopOfPage

1.2 EMERALD Network of Areas of Special Conservation Interest

The EMERALD network is a network of 'Areas of Special Conservation Interest' (ASCI), which is to be established in the territory of the contracting parties and observer states to the Berne Convention¹, including, among others, Central and Eastern European countries and the European Union (EU) member states. For EU member states EMERALD network sites are those of the 'Natura 2000' network. The overall objective of the EMERALD network pilot project currently is to develop a pilot database, containing a fair proportion of the areas of special conservation interest and to submit a proposal for designation of the selected sites to the standing committee of the Berne Convention. More information is available at:

<http://www.nature.coe.int/english/main/econets/emerald/intro.htm>

¹ Council of Europe Convention on the Conservation of European Wildlife and Natural Habitats (1979).

1.3 European Network of Biogenetic Reserves

This network is designed to conserve representative examples of the European natural heritage which contain specimens of flora or fauna that are typical, unique, rare or endangered. So far 340 reserves have been incorporated into the network. More information is available at: <http://www.nature.coe.int/english/main/econets/biogen/resbiogen.htm>

1.4 European Diploma on Protected Areas

The diploma is awarded to sites of European importance from the point of view of fauna, flora and landscape and which are particularly well protected. The protected area must be subject to stringent protection and integrate successfully nature conservation and certain human activities. So far 61 diplomas have been awarded in 22 CoE member states and in one non-member state (Belarus). More information is available at:

http://www.coe.int/t/e/Cultural_Co-operation/Environment/Nature_and_biological_diversity/Ecological_networks/The_European_Diploma/

2 EUROPEAN COMMISSION (CEC)

The Commission of the European Community (CEC) embodies and upholds the EC's general interest. The treaties on European Union make no provision for a comprehensive common forestry policy. The management, conservation and sustainable development of forests are nevertheless vital concerns of existing common policies like the Common Agricultural Policy and the rural development, environment, trade, internal market, research, industry, development co-operation and energy policies and have been reflected inter alia in:

- Council Directive 79/409/EEC of 1979 on the conservation of wild birds
- Council Regulation 1615/89/EEC of 1989 on the establishment of a European Forestry Information and Communication System (EFICS)
- Council Directive 92/43/EEC of 1992 on the conservation of natural habitats and of wild fauna and flora
- Council Resolution C 56/01 of 1999 on a forestry strategy for the European Union

A Council Regulation concerning monitoring of forests and environmental interactions in the Community (Forest Focus) is presently under preparation (April 2002).

The CEC is organised in various Directorates General (DGs). Several DGs are in charge of forest related matters. Most important for SFM related data and information services are DG Agriculture, DG Environment and DG Enterprise. More information is available at: <http://www.europa.eu.int/inst-en.htm#3>

SFM relevant data and information services provided by CEC

2.1 European Network of Protected Sites - NATURA 2000

Council Directive 79/409/EEC of April 1979 on the conservation of wild birds and Council Directive 92/43/EEC of May 1992 on the conservation of natural habitats and of wild fauna and flora constitute a legal basis for the protection of rare and endangered species and natural habitats. The Special Protection Areas (SPAs) created under the "Birds Directive" and the Special Areas of Conservation (SACs) under the "Habitats Directive" make up the 'European network of protected sites - Natura 2000'.

EEA's European Topic Centre on Nature Protection and Biodiversity (ETC/NPB) provides scientific and technical support to the European Commission, DG Environment, in handling data provided by member states in this framework (cf. chapters 5.3.1-3). For SPAs, the work consists in incorporating annually the new sites designated by member states, as well as ensuring a permanent update of the full database through the incorporation of new data concerning already designated sites. This information is the basis for the preparation of the DG Environment annual report "Special Protected Areas". In the case of the Habitats Directive, the work consists in assessing data for evaluation of sites provided by member states as proposed Sites of Community Interest (SCIs) on a European biogeographic basis. If finally retained in the Community List, the SCIs have to be designated by member states as SACs before the year 2004. More information is available at:

http://nature.eionet.eu.int/activities/Natura_2000

2.2 Forest Fire Information System

In 1992, the European Union introduced a legal basis to protect the Community's forests against fire: Council Regulation 2158/92/EEC. Based on this regulation the member states collected from 1992 to 2002 data on at-risk areas and forest fire protection plans. Areas with a risk of forest fires are presented in a forest fire risk map which distinguishes between high-risk, medium-risk and low risk areas. More information is available at:

http://www.europa.eu.int/comm/agriculture/fore/fires/regul/zrisk_en.htm

Based on Article 3 of the above mentioned regulation member states have also provided information on forest fire protection plans for the areas classified as high risk and medium risk. In 2000, there were 48 plans for high-risk areas, 27 for medium-risk areas and nine for forests straddling high and medium risk areas. These plans ensure that there are coherent protection strategies which comprise the analysis of the causes of fires, creation and improvement of infrastructure for protection, monitoring, control and prevention. The protection plans also analyse the main causes of fires that have occurred. More information is available at: http://www.europa.eu.int/comm/agriculture/fore/fires/regul/plprot_en.htm

In 1994, the CEC adopted Regulation 804/94/EEC on implementing the Community Forest Fire Information System. This Regulation introduced the systematic collection of a minimum core set of data on each forest fire occurring for all areas at risk of fire in the member states. The Forest Fire Information System now covers 319 administrative areas (NUTS level III) in the following member states of the European Union with forest fire risk areas: Germany, Portugal, Spain, France, Italy and Greece. The system contains data on over 650 000 forest fires covering over 6 million hectares from 1985 to 1999. This information provides not only a very detailed description of forest fire at Community, national and regional level, but also an

operational tool for monitoring and assessing the measures taken by the member states and the European Commission. It also provides useful pointers for adapting forest protection plans and forestry strategies. More information is available at:

http://www.europa.eu.int/comm/agriculture/fore/fires/scif/index_en.htm

A new Council Regulation on monitoring of forests and environmental interactions to protect the Community's forests (Forest Focus) is under elaboration by the Council of the European Union (Status, April 2003). Forest Focus shall ensure the monitoring and collection of appropriate data on forest fires until the end of 2008. More information is available at:

<http://europa.eu.int/scadplus/leg/en/lvb/l28125.htm>

2.3 Monitoring of air pollution effects on forests

In 1986 the CEC adopted Regulation 3528/86/EEC on the protection of forests against air pollution. In order to contribute to a better understanding of processes affecting forest ecosystem conditions this Community scheme had for the period of 1987 to 2001 the following main objectives:

- to set up a forest observation network;
- on the basis of common methods, to produce periodic inventories of damage caused to forests, in particular by atmospheric pollution;
- to monitor forests intensively and continuously;
- to improve, through experiments, our understanding of the effects of this pollution, and to improve methods of observing and measuring damage to forests;
- through pilot projects, to devise methods of maintaining and restoring damaged forests

The Regulation is implemented by a co-operation of CEC and the Working Group on Effects/ICP Forests (see also chapter 19.1 f.) More information is available at:

http://europa.eu.int/comm/agriculture/fore/monitor/2000/strat_en.pdf

A new Community Regulation on monitoring of forests and environmental interactions to protect the Community's forests (Forest Focus) is under elaboration by the Council of the European Union (Status, April 2003). Forest Focus shall ensure the monitoring and collection of appropriate data on air pollution effects on forests until the end of 2008. More information is available at: <http://europa.eu.int/scadplus/leg/en/lvb/l28125.htm>

3 EUROPEAN COMMISSION - JOINT RESEARCH CENTRE (JRC)

The Joint Research Centre (JRC) is an integral part of the European Commission (CEC) providing customer-driven independent scientific and technical advice to the CEC, the European Parliament, the Council of Ministers and EU member states in support of EU policies. Its seven scientific institutes carry out research of direct concern to EU citizens. The JRC provides technical know-how both directly and through co-ordinating and contributing to numerous broader networks linking industry, universities and national institutes. The JRC is

playing an important role in helping establish the European Research Area and is working closely with applicant countries to assist in the development of their understanding of the body of EU law as a support to the EU enlargement process. More information is available at: <http://www.jrc.org/>

The most relevant JRC institute in relation to forests is the Institute for Environment and Sustainability (IES). It provides scientific and technical support to EU strategies for the protection of the environment and sustainable development. Prime objectives of IES are to investigate the level and fate of contaminants in the air, water and soil, to assess the effects of these contaminants upon the environment and individuals and to promote a sustainable energy supply. The IES uses earth observing satellites and other remote-sensing techniques to provide information for policy decisions on several subjects, including forestry. Within the IES work related to forest data is performed by the following three units:

- The Global Vegetation Monitoring (GVM) Unit's mission is to provide accurate information on changes in the world's vegetation cover. The focus is provision of information and methodologies that support the implementation of international environmental treaties and conventions (such as FCCC, CBD and CCD) and to support the EU's aid and development programmes. Research concentrates on the generation of information and products on forest condition, fire dynamics, land cover change and physical and biophysical parameters for bio-geological models. More information is available at: <http://ies.jrc.cec.eu.int/Units/gvm>
- The Land Management (LM) Unit is working in the thematic issues related to the spatial characterisation of the European territory in terms of landscape ecology, forestry, biodiversity, hydrology, agri-environment, urban and regional development, natural hazards related to forest fire and flooding. The LM Unit focuses as well on the creation of harmonised pan-European geographic databases and the European Geographic Information Infrastructure. More information is available at: <http://ies.jrc.cec.eu.int/Units/lm>
- The Soil and Waste (SW) Unit carries out research in support of EU policies regulating the environmental impacts of waste management strategies and protecting soil resources. The European Soil Bureau is incorporated in the SW Unit. Its main objective is to provide harmonised and coherent information on European soils to policy-makers and other users. This addresses both the current status and the indicators of future changes in soil quality. The geographic area covered by this activity corresponds to the EU and its accession countries and other areas of interest to EU policies. More information is available at: <http://ies.jrc.cec.eu.int/Units/sw/> and <http://ies.jrc.cec.eu.int/Projects/ESB/>

SFM relevant data and information services provided by JRC/IES

3.1 Global Environmental Information System (GEIS)

The objective of GEIS is to provide information on changes in the location and condition of global vegetation types and marine primary production. GEIS analyses global earth observation data from 1982 to 1998 and determines broad changes in vegetation cover and seasonality, and changes in global fire activity. This provides a global context for the Kyoto

reference year of 1990. It shows the impact of short-term climatic variations such as 'El Nino'/'La Nina'. A land cover map and seasonal parameters from 1999 onwards is created using vegetation data. Also quantitative information on the current global forest resources are provided. Deforestation risk models are developed to predict changes. GEIS also develops detection procedures to identify significant events, such as forest fires. More information is available at: <http://ies.jrc.cec.eu.int/Projects/GEIS>

3.2 Geo-Information for Development and Environmental Monitoring Project (EURO-Landscape)

This project aims to develop the application of earth observation data and geographical information to assess, map and monitor the European landscape with special emphasis on the development of criteria and indicators for sustainable development, environmental conditions and biodiversity.

The core elements of the EURO-Landscape project are forests, other wooded land, grasslands, terrain characteristics, drainage networks and catchment boundaries, their socio-economic importance and the impact of legislation. The project links closely to EU regulations and agendas on environmental conservation, rural development, forestry, desertification, biodiversity and water. In the field of forestry emphasis is placed on:

- The development of methods for the provision of geo-referenced information related to the distribution and composition of forests in Europe.
- The development, implementation and evaluation of techniques to aid the assessment of forest ecosystem diversity.
- Investigating the cause-effect relationships of forest condition and the impact of environmental stress factors.

In particular support is given to the European Forest Information and Communication System (EFICS). More information is available at: <http://eurolandscape.jrc.it/>

3.3 Forest Database

The forest database contains the results of a satellite interpretation of forest characterisation comprising coniferous, mixed, broadleaved and no forest as well as nine different soil depths, covering the territory of the 15 EU member states. The information is also presented in form of a 'Forest Characterisation Map' with the area divided into cells of 1*1 km. More information is available at: <http://www.aris.sai.jrc.it/en/data-dist/forest.html>

3.4 Global Fire Monitoring and Information Systems

The 'Global Fire Monitoring System' documents the evolution of global fire activity from 1982 to 1998. The 'Global Fire Information System' is a further development of the 'World Fire Web Network' which provides a global fire mapping system and a means to disseminate 'near real-time' fire related information. More information is available at:

<http://www.gvm.sai.jrc.it/fire/activities.htm>

3.5 European Soil Information System (EUSIS)

EUSIS is the only homogeneous soil information available at EU scale. It was developed by the JRC/ESB and the National Soil Surveys. Currently it extends to the EU, EFTA and the Central and Eastern European countries. EUSIS provides soil maps at 1 : 1 000 000 scale, appropriate to respond to the main issues relevant to the EU policies on soil. It also provides a number of interpretative models for more complex information of environmental interest such as soil erosion risk, soil organic carbon content and soil compaction risk. The system is fully accessible and includes the relevant indicators in support of the development of a coherent soil protection policy within Europe. More information is available at:

http://www.bgr.de/N2/PROCEED/1_4.pdf

4 EUROPEAN COMMISSION - STATISTICAL OFFICE (EUROSTAT)

Eurostat is the Statistical Office of the European Commission. In the framework of the European Statistical System (ESS) and in collaboration with the national statistical institutes (NSIs) in the member states and of the EFTA countries, Eurostat produces reliable, comparable and harmonised statistics covering the Euro-zone, the EU15 and the European Economic Area.

Eurostat disseminates statistics to decision-makers and the citizens but also provides European institutions and member states with the data they need to implement, monitor and evaluate community policies. Together with the NSIs Eurostat develops common statistical methods and standards. Eurostat supports the development of statistical systems in the accession countries to the EU and in countries moving towards market economy. Eurostat offers a web site which is updated daily at: <http://europa.eu.int/comm/eurostat>.

SFM relevant data and information services provided by Eurostat

4.1 European Production and Market Statistics (Europroms)

The European production and market statistics (Europroms) are the only source of information in Europe that supplies detailed and comparable data on the production, external trade and markets of almost 4 400 industrial products in the EU. It makes it possible to calculate in precise terms the domestic market for these products for most EU countries. Data are available for the period from 1993 to today. More information is available at:

<http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=OCEP001G-02-EN>

4.2 Geographical Information System of the European Commission (GISCO)

The GISCO database contains geographical information on a large range of subjects from

basic topographical data on administrative regions to data on the environment and natural resources. Thematic data comprise inter alia:

- Environment
- Industrial Themes
- Infra Regional Statistics
- Land Resources
- Nature Resources

More information is available at: <http://www.datashop.org/gisco/index.html>

4.3 COMEXT Database

COMEXT is a database for statistics on the EU's external trade and trade between member states. External trade statistics in COMEXT cover all transactions in movable goods like for example timber. For each type of good statistics indicate the:

- direction of trade flow (import, export and balance)
- reference period
- reporting country
- statistical procedure
- partner country
- type of data: statistical value expressed in thousands of Euro or in hundreds of national monetary units, quantity in tonnes or in items, pairs, hectolitres, etc.

Annual statistics are available from 1976 to 1987. Monthly, quarterly, half-yearly and annual statistics are accessible from 1988 to today. More information is available at:

<http://www.datashop.org/en/bases/comext.html>

4.4 New Cronos Database

New Cronos contains more than 270 million social and economic statistical data covering the European Union member states and also, in many cases, Japan, the United States, the accession countries to the EU and the principal economic partners of the EU. The data are available daily, monthly, quarterly, half-yearly or annual from 1960 to today.

New Cronos is subdivided into nine themes, comprising several domains, each covering a specific sector. Theme 5 contains data on agriculture and fisheries, theme 8 contains data regarding environment and energy. More information is available at:

<http://www.datashop.org/en/bases/newcronos2.html>

With regard to forestry Eurostat provides within the New Cronos database the following statistics:

4.4.1 *Economic Accounts for Agriculture and Forestry (EAAF)*

The Economic Accounts for Agriculture and Forestry contain the following data collections:

- Agricultural Labour Input Statistics (ALI)
- Economic Accounts for Agriculture (EAA)

- Economic Accounts for Forestry (EAF)
- Gross Domestic Product (GDP) data
- Income of the Agricultural Household Sector per socioprofessional group (IAHS statistics)
- Exchange rates (EUR, PPS) which have been used in the calculation of the derived series (data relevant for EAA and EAF)

The data collections are available at:

<http://www.uv.es/~euroinfo/eurostat/newcronos/TEMA%205/cosa.htm>

1973-2000 data of the Economic Accounts for Agriculture and Forestry and Agricultural Labour Input Statistics are also available on CD-Rom and can be ordered at:

<http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&theme=5-AgricultureandFishery&product=KS-41-01-002-3A-Z-EN>

4.4.2 Economic Accounts for Agriculture and Forestry for Candidate Countries

The Economic Accounts for Agriculture and Forestry for candidate countries include the following data collections:

- Agricultural Labour Input Statistics (ALI)
- Economic Accounts for Agriculture (EAA)
- Gross Domestic Product (GDP) data (data relevant for EAA/EAF)
- Exchange rates (EURO & PPS) (data relevant for EAA/EAF)

More information is available at: http://europa.eu.int/comm/eurostat/Public/datashop/print-product/EN?catalogue=Eurostat&product=COSA_CC-EN&mode=download

4.4.3 Forestry Statistics 1992-2000

This database gives a statistical insight into the forestry sector of the EU in 1992-2000. Besides the 15 EU member states, this database sets out the basic forestry statistics for Iceland, Liechtenstein, Norway and Switzerland and for the accession countries to the EU. The forestry statistics contain data on the following aspects:

- Forest resources
- Structures of forest holdings
- Forest condition
- Removals
- Production and trade for roundwood
- Production and trade for the major forest industry products

More information is available at: <http://europa.eu.int/comm/eurostat/Public/datashop/print-product/EN?catalogue=Eurostat&product=FOREST-EN&mode=download>

4.4.4 REGIO Data Bank

The REGIO data bank is Eurostat's database for regional statistics and covers the main aspects of economic and social life in the regions of the EU. Created in 1975, REGIO is subdivided into statistical domains like demography, economic accounts, unemployment, labour force sample survey, energy statistics, transport, agriculture, living conditions, tourism

and statistics concerning research and development. A reference guide describes in detail the various collections of the database and the tables they contain. It also gives basic definitions. The regions are classified according to NUTS (nomenclature of territorial units for statistics). More information is available at:

<http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=REGIO-EN>

4.5 Agriculture – Statistical Yearbook

The yearbook contains the most important information from Eurostat's publications on agriculture, forestry and fisheries in abbreviated form. Forestry is as one topic presented. More information is available at: <http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-AQ-02-001-3A-C-EN>

4.6 Environment Statistics - Pocketbook

This booklet summarises the most important figures collected or calculated by Eurostat in the field of environment statistics. Information is given on the pressure of the economy on the environment, such as the emissions of various pollutants, the consumption of natural resources, and the production of waste. More information is available at:

http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=KS-41-01-074-__-C-EN

4.7 European Framework for Integrated Environmental and Economic Accounting for Forests (IEEAF)

The IEEAF is a statistical handbook with production tables for integrated environmental and economic accounting for forests. Accounts included are monetary and physical balance sheets for forest land and for standing timber, economic accounts for forestry and logging, monetary and physical supply-use tables for wood products and material balances. Non-wood products and non-timber functions of forests are also addressed. More information is available at: http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&product=CA-27-99-241-__-C-EN

4.8 Europe in Figures

'Europe in figures' provides easy access to salient facts about the European Union and its member states. With sections on history, institutions, relations with the rest of the world, environment, population, education, research and development, labour market, living standards, agriculture including forests and forestry, fishing, energy, industry, services, external trade, etc., 'Europe in figures' looks at Europe in all its many facets. Up to date editions are published every five years. More information is available at:

http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat&collection=04-Panorama%20of%20the%20EU&product=CA-21-99-036-__-C-EN

5 EUROPEAN ENVIRONMENT AGENCY (EEA)

Council Regulation 1210/90/EEC established the European Environment Agency (EEA) and also set-up the European Environment Information and Observation Network (EIONET). EEA came into function in 1994. EEA is one of the agencies of the European Community but not part of the European Commission. The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy making agents and the public. More information is available at: <http://www.eea.eu.int/>

5.1 European Environment Information and Observation Network (EIONET)

EIONET is a collaborative network of the European Environment Agency and its member countries, connecting i.a. National Focal Points in the EU and in accession countries to the EU and European Topic Centres. These organisations jointly provide the information that is used for making decisions for improving the state of environment in Europe and making EU policies more effective. EIONET is both a network of organisations and an electronic network (e-EIONET). Currently there are 31 member countries and 5 collaborating countries as well as 6 the following European topic centres:

- European Topic Centre on Nature Protection and Biodiversity - ETC/NPB (<http://nature.eionet.eu.int/>)
- European Topic Centre on Water - ETC/WTR (<http://water.eionet.eu.int/>)
- European Topic Centre on Air and Climate Change - ETC/ACC (<http://etc-acc.eionet.eu.int/>)
- European Topic Centre on Terrestrial Environment - ETC/TE (<http://terrestrial.eionet.eu.int/>)
- European Topic Centre on Waste and Material Flows - ETC/WMF (<http://waste.eionet.eu.int/>)
- European Topic Centre on Catalogue of Data Sources - ETC/CDS (<http://www.mu.niedersachsen.de/cds/>)

European Topic Centres have been designated by the EEA for the period 2001-2003 to assist in its work of collecting, analysing, evaluating and synthesising information relevant to national and international policies for the environment and sustainable development. More information is available at <http://www.eionet.eu.int>

SFM relevant data and information services provided by EEA

5.2 Data Service

In the EEA and its Topic Centres large amounts of data sets are being produced concerning environmental issues. This data is not easily accessible through EEA's reports. The Data

Service provides access to these data sets which contain aggregated national data with a geographical coverage of at least the 15 EU member states. Data Service is available at: <http://dataservice.eea.eu.int/dataservice/>

5.2.1 Nature/Land Cover Information Package (NATLAN)

NATLAN is an information package in the Data Service. Information on the environment is linked to nature sites and areas, e.g. the geographical distribution of forests. The purpose of NATLAN is to give public access to this information with the help of maps. NATLAN allows navigation and viewing of information on different topics for any chosen area in Europe. More information is available at: <http://org.eea.eu.int/news/Ann979228840>

5.2.2 Database on Bio-geographical Regions

The bio-geographical regions map and the underlying database created by ETC/NPB contain the official spatial delineations of reference units used in the Habitats Directive (cf. chapter 2.1) and for the EMERALD network set up under the Bern Convention (cf. chapter 1.2). More information is available at:

<http://dataservice.eea.eu.int/dataservice/metadetails.asp?table=bioregions&i=1>

5.2.3 Co-ordination of Information on the Environment (CORINE)

From 1985 to 1990 the European Commission set up the CORINE programme. As a result an information system on the state of the environment in the European Community (EC) was created (the CORINE system). It consists of a series of data bases describing the environment in the EC and recently also on countries of Central and Eastern Europe. A number of the CORINE data sets are now disseminated and maintained by EEA.

5.2.3.1 CORINE Land Cover Database

One of the major tasks undertaken in the framework of the CORINE programme has been the establishment of a computerised inventory on the land cover. CORINE Land Cover is a key database for integrated environmental assessment. In this database most Central and Western European countries, Morocco and Tunisia used one methodology to digitise land cover while interpreting 'Landsat Thematic Mapper Satellite' images. The database covers information on 3.2 million km² at an original scale of 1:100 000 using 44 classes of the CORINE nomenclature. The extension of the work to other European and North African countries is intended. More information is available at: <http://terrestrial.eionet.eu.int/CLC2000> or <http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=188>

5.2.3.2 CORINE Biotopes Database

The CORINE biotopes database is an inventory of major nature sites with information about vulnerable ecosystems, habitats and species for Community environmental assessment. Data is collected by the European Topic Centre on Nature Protection and Biodiversity for the EU 15 (with the exception of Austria, Sweden) and the accession countries to the EU (with the exception of Cyprus, Malta, Slovenia, Turkey). More information is available at:

<http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=548>

5.3 European Nature Information System (EUNIS)

The European Nature Information System (EUNIS), developed by the ETC/NPB, has the objectives to facilitate the use of data by promoting harmonisation of terminology and definitions and to build a European source of information on environmental aspects of species and habitats as well as sites.

The contribution to the EEA reporting activities and the support to the DG Environment of the CEC for implementing NATURA 2000 (cf. chapter 2.1) are priority projects for the ETC/NPB. Therefore, most data in EUNIS were collected in the framework of these projects. EUNIS consists of a central unit integrating data models on species, habitats and sites, several secondary databases which are managed by different partners and an increasing number of satellite databases. The data include not only those provided by member states (for example when describing the proposed NATURA 2000 sites), but also reference data collected by the ETC/NPB from literature and other sources on species and habitats in the related biogeographical regions. EUNIS also includes information on sites designated under national instruments. More information is available at:

<http://nature.eionet.eu.int/activities/products/eunis> or
<http://eunis.eea.eu.int/eunis3/eunis.jsp>

5.3.1 EUNIS Species Database

The EUNIS Species Database includes relevant information on a selection of plants and invertebrates species (at least those listed under the Habitats and Birds Directives (cf. chapter 2.1) and under the Bern Convention (cf. chapter 1.2)) and all European vertebrates. EUNIS is planned to be extended to cover other environmentally important species in the future.

By mid 2002, the database contained around 35 000 records on 2 659 valid species or subspecies. They include:

- Data on species collected by the ETC/NPB from literature and other sources as reference data
- Information on species and habitats taken into account in relevant international conventions
- Specific data collected in the framework of the EEA reporting activities, which also constitute a core set of data to be up-dated periodically

More information and the database are available at: <http://eunis.eea.eu.int/eunis3/eunis.jsp> ;
http://nature.eionet.eu.int/activities/products/eunis_sp

5.3.2 EUNIS Habitats Database

The habitat concept is the foundation for several EU and international initiatives such as NATURA 2000 (cf. chapter 2.1) and EMERALD (cf. chapter 1.2). Therefore, it is intended to gradually include in EUNIS basic information such as habitat description and distribution on habitat types of European concern. By mid 2002 the EUNIS habitats database contained around 20 000 records corresponding to the 198 habitat types listed in annex 1 of the Habitats Directive. As for the species, the amount of information on each habitat varies in accordance with the use of the data. Despite the difficulty of accessing harmonised spatio-temporal data on habitats, the EUNIS habitats model already hold more than 18 000

geographical records on habitat types, which are extracted also from the CORINE biotopes databases. More information is available at:

<http://nature.eionet.eu.int/activities/products/eunishaben.html>

5.3.3 EUNIS Sites Database

The EUNIS Sites Database includes relevant information on nationally, European Community and internationally designated areas and selected other areas of environmental interest. It consists of several separate data sets according to the type of area.

Presently there are 44 000 records. The sites are listed according to the official designations at national level. This list of designation types has about 600 individual designations registered according to national or sub-national law. For the first time, for a number of countries, the inventory also includes for each site the direct link to the site code in the national data base on designated areas. This should allow a more automated updating procedure in the near future. More information is available at:

http://nature.eionet.eu.int/activities/EUNIS/data_coll/sites

5.4 European Common Database on Designated Areas (CDDA)

The Common Database on Designated Areas is a joint project between the EEA, Council of Europe (CoE) and the UNEP World Conservation Monitoring Centre (UNEP-WCMC) initiated in 1995. This co-operative project aims at fulfilling different reporting needs, from national to European and international level.

The database contains the geographic location and size of the nationally designated areas. There are basically three broad categories of designations:

- Legal country commitment in the framework of international or regional conventions and programmes (Ramsar, World Heritage, Bern, Barcelona, Helsinki conventions; UNESCO Biosphere Reserves)
- Legal country commitment under the Birds and Habitats Directives
- Specific national designations, with considerable variability from one country to another (National parks, nature reserves, regional parks etc.)

The ETC/NPB collects data on nationally designated areas in EEA countries. UNEP-WCMC collects information on internationally designated areas from relevant secretariats and on nationally designated areas from non-EEA countries, while the CoE provide their data (European Diploma on Protected Areas, European Network of Biogenetic Reserves). In 2001 a collaboration began with the MCPFE Liaison Unit Vienna to co-ordinate with their data collection on protected and protective forest and other wooded land to produce one unified list of designation types.

By mid 2002 there were 44 000 records (29 000 for EEA member countries and 15 000 for other European countries). The database contains the geographic location and size of the designated areas as well as the year of designation. The sites are listed according to the official designations at national level. This list of designation types has about 600 individual designations registered according to national or sub-national law (of which about 350 for EEA member countries). More information is available at:

http://www.eionet.eu.int/Best_Practice/Acronyms/CDDA

5.5 European Community Clearinghouse Mechanism (EC-CHM) for Biodiversity

The EEA maintains the 'European Community Clearinghouse Mechanism' (EC-CHM) for biodiversity for the CEC. It is a service in accordance with the provisions of the UN Convention on Biological Diversity (CBD) that allows sharing biodiversity information held by EC institutions and to establish links with national clearinghouse mechanisms and other international information sources. It contains information and links to documents and databases and person networks on:

- Convention and biodiversity policy documents (global, European Community, European, national)
- Biodiversity Networks of people and institutions
- Information on biodiversity
- Cooperation on research, funding and transfer of technology and capacity
- Information on events, including possibilities for announcing own events

The information is based on published datasets used for or as biodiversity indicators. Data is collected from datasets for national and international biodiversity strategies and reports and international indicator datasets such as upcoming CBD indicators, EU headline indicators, EEA indicators and data, OECD and EUROSTAT indicators. More information is available at: <http://biodiversity-chm.eea.eu.int/>

5.6 Sustainability Targets and Reference Value (STAR) Database

The STAR database is an inventory of current environmental policy targets and sustainability reference values (SRVs) which apply in the EU, in a range of countries in the European Free Trade Association (EFTA), in Central and Eastern Europe, and in the Newly Independent States. The database gives information on:

- standards or targets set down in EU law relating to acidification
- international laws established to regulate hazardous waste and related restrictions
- proposed air quality standards (by scientific bodies and international organisations)

Currently, the database is in an advanced stage in terms of targets and SRVs at international level (i.e. EU standards, international conventions, etc). A large number of targets which are solely applicable to individual countries (national targets) have also been included, but only if they are more stringent than those at international level, or are in some way innovatory. However, STAR is not intended to include a comprehensive set of national targets or SRVs. More information is available at: <http://star.eea.eu.int/default.asp>

5.7 Environmental Assessment Reports

These are comprehensive reports which present key information and an integrated assessment, covering all links in the DPSIR chain. They are the Agency's main brand reports, but differ somewhat in terms of scope and frequency. More information is available at: http://org.eea.eu.int/documents/brochure/brochure_needs.html

5.7.1 Environmental Signals Reports

The annual environmental signals reports present regular updates of key environmental indicators by focusing on different areas of interest. The 'Environmental Signals 2002 - Benchmarking the Millennium' is the third of the EEA's environmental signals reports. The publication includes a chapter on forest which is as well based on indicators. More information is available at:

http://reports.eea.eu.int/environmental_assessment_report_2002_9/en

5.7.2 Europe's Environment Report

At the ministerial conference "Environment for Europe" in Dobruška/Czech Republic, in 1991 the Environment Ministers requested a report on Europe's Environment. Published by the EEA in 1995, 'Europe's Environment: The Dobruška Assessment' gives a broad overview of the state of the environment, of what the trends in the past have been and of what the future might look like. Based on data from a wide range of sources, it covers 46 countries and identified twelve prominent environmental problems of European concern.

'Europe's Environment: The Second Assessment' is the follow-up report to The Dobruška Assessment and was presented to Europe's Environment Ministers at the ministerial conference in Århus/Denmark, in 1998. It measures progress in the continent's environmental quality over recent years. Analysing the same twelve key environmental indicators as the initial report, The Second Assessment shows how environmental problems develop in relation to socio-economic factors and environmental and sector policies.

Presently the third Report on Europe's Environment is prepared by the EEA for the next ministerial conference of the Environment Ministers in Kiev/Ukraine in May 2003. More information is available at: http://org.eea.eu.int/documents/brochure/brochure_needs.html

5.8 Topic reports

These are reports resulting from the monitoring and data collecting activities of the EEA, describing the pressures, state and quality of the environment in specific topic areas. Topic reports describe and/or analyse, often on a regular basis, the specific topics and related environmental problems based on data collected through the EEA work programme. Topic reports are intended as reference information sources for scientists and specialists in clearly defined areas, as well as information for a broader audience on certain topics. More information is available at: http://org.eea.eu.int/documents/brochure/brochure_needs.html and http://org.eea.eu.int/documents/ar2001/annex1_2001

6 EUROPEAN FOREST INSTITUTE (EFI)

The European Forest Institute (EFI) is an international association guided by its members which form an extensive researcher network across Europe and beyond. The institute undertakes research on forest policy, including its environmental aspects, ecology, multiple use, resources and health of European forests, supply and demand for timber and other

forest products, and prepares forecasts on future development of European forest resources and their utilisation. More information is available at: <http://www.efi.fi/>

SFM relevant data and information services provided by EFI

6.1 European Forestry Information and Data Analysis System (EFIDAS)

EFIDAS aims to provide comprehensive European forestry information and user-friendly data analysis systems to promote the improved utilisation and analysis of European forestry statistics in conducting pan-European forestry research. Its main components are:

- Long-term European forest resources assessment data

Based on international forest resources assessment of FAO and UNECE the database contains time series data from 1950 to 1990. Data from search results can be downloaded.

- Forest products statistics and trade flows

This database covers a time span from 1962 to 1999 and contains data on trade flows for more than 200 countries and five aggregate products.

- Regional forest resource and socio-economic statistics in European Union countries

Socio-economic data at the sub-regional level were prepared for EU 15 based on the 'Euroavain 1999. Key on Europe, Statistics Finland, Classification Services'.

- Forest law and legislation

The data results from a project for collecting forest laws from European countries implemented by EFI Programme 3 'Policy Analysis'. The documents in the database can be searched by key words.

- Virtual forestry data bank

This is a meta-database based on key words search or free text search. It provides meta information on terms, definitions, source for forestry statistics available in European countries. It provides links to individual websites.

EFIDAS also runs a meta information system whose main components are an EFIDAS data catalogue as well as a European forest and vegetation map catalogue.

More information is available at: <http://www.efi.fi/efidas/>

6.2 Forest Reserves Research Network Databank (FRRN)

The Forest Reserves Research Network Databank (FRRN) serves as a tool for co-operation and co-ordination of research in forest reserves, mainly in the framework of COST Action E4 'Forest Reserves Research Network'. It describes forest areas that have the potential to be useful for research in Europe. The databank includes:

- Description of various national reserve classes which includes forests left for free development
- List of forest reserves including near-natural forests

- Description of the ecological and administrative conditions of each forest reserve
- On-going research experiments in the reserves

More information is available at: http://www.efi.fi/Database_Gateway/FRRN/

6.3 Certification Information Service (CIS)

The Certification Information Service (CIS) is a service provided by EFI and funded by DG Development of the European Commission. The goals of CIS are the provision of African, Caribbean and Pacific (ACP) countries with information on the progress of forest certification and the development of national and international certification schemes as well as the provision of European countries with information on progress of certification within ACP countries. Progress on certification schemes and related activities are monitored, analysed and documented by CIS. More information is available at: <http://www.efi.fi/cis/>

6.4 Database on Forest Research Capacities in 18 European Countries

This database on Forest Research Capacities in 18 European Countries is the result of a contract awarded by the European Co-operation in the Field of Scientific and Technical Research (COST) to update the study on 'Inventory of Scientific and Technical Research Resources in Forestry, Wood and Wood-based Products, Pulp and Paper' looking specifically at forestry research. The database covers 770 research units from 18 European countries. Apart from updated contact information the database contains data on the numbers of personnel employed by research units and the allocation of research time to forestry topics. The database is available at: <http://www.efi.fi/projects/forc/database.html>

6.5 EFISCEN European Forest Resource (EEFR) Database

The EFISCEN European Forest Resource Database has been established as an extension of EFI's Forest Scenario Modelling Project. In this project, a large scale matrix model, the 'European Forest Information Scenario Model' (EFISCEN), is used to project the development of Europe's forest resources under various scenarios. Data are available for 30 European countries and the Leningrad region of the Russian Federation.

The basis of the EEFR database are the individual national forest inventories. Each country lists different 'forest types', defined according to region, owner class, structure, site class and tree species. The level of detail between countries does vary, as not all have presented information at every level (e.g. region, owner class, tree species etc.). For each forest type and age class, the forest area, the total and mean volume, the total annual increment and the current annual increment may be retrieved from the EEFR database for those countries that have distinguished even-aged forest structure. For uneven-aged forests information is given by diameter classes. For the individual diameter classes the number of trees, the total volume, the mean volume per tree, the total annual increment and the mean annual increment per tree are available. More information is accessible at:

<http://www.efi.fi/projects/eefr/>

6.6 Database on Forest Disturbances in Europe (DFDE)

The EFI, together with Alterra (part of Wageningen University and Research Centre), has launched the Database on Forest Disturbances in Europe (DFDE). This database aims at providing historic information about disturbances in the forests of Europe. Information is collected by means of a literature review, both from scientific papers as well as from 'grey' literature. Every reference to a disturbance event is put in a single record, containing information on the year of occurrence, exact date, country, region, district, disturbance type, tree species affected, volume, area, number, percentage, underbark/overbark, other comments and the literature reference. The user can search the database by country, year or period and disturbance type group (abiotic, biotic, anthropogenic). The database is accessible at: <http://www.efi.fi/projects/dfde>

6.7 Forest Information Services Network for Europe (FINE)

FINE offers user-friendly access to information about forests at the regional, national and European level. Based on data from TBFRA 2000 (cf. chapter 18.1) thematic maps on the distribution of, for instance, forest area, forest per inhabitant and forest ownership are available as well as separate information on forest resources in 39 European countries. Furthermore, FINE has produced a database including 'Questions and Answers' on Europe's Forests and a set of forest pages for children. More information is available at: <http://www.efi.fi/fine/>

6.8 European Forest Information System (EFIS)

The Council Regulation 1615/89/EEC of 1989 stated that the European Commission should set up a European Forest Information and Communication System (EFICS) in order to address the need for sound forestry information at the European level. The EFIS project, which started end of 2000, represents a contribution to the overall European Forestry Information and Communication System (EFICS). The main objective of EFIS is to build a fully operational prototype of a reliable forest information system. It will compile, process, analyse and disseminate available forestry information of various heterogeneous data sources on international, national and regional levels. More information is available at: <http://www.efi.fi/news/2001/efis.htm>

7 EUROPEAN SPACE AGENCY (ESA)

The European Space Agency (ESA) is an intergovernmental organisation, in charge of research and development in the space field and its applications for exclusively peaceful purposes. ESA has 15 member states: Austria, Belgium, Finland, France, Denmark, Germany, Italy, Ireland, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom and Portugal. Canada takes part in some project under a co-operation agreement.

ESA's involvement spans the field of space science, earth observation, telecommunications,

satellite navigation (Galileo Programme), space segment technologies including orbital stations and platforms. Activities are carried out at ESA's head office in Paris and through its specialised centres in the Netherlands (European Space Research and Technology Centre - ESTEC), Germany (European Space Operation Centre - ESOC and European Astronautical Centre - EAC) and Italy (European Space Research Institute - ESRIN), whereas only the latter provides SFM relevant data and information services. More information is available at: <http://www.esa.int>

The European Space Research Institute (ESRIN) governs data and products from ESA (ERS-2, ENVISAT) and third-party earth observation missions (e.g. SPOT, Landsat). It manages the largest archives of environmental data in Europe. ESRIN operates ground infrastructures consisting of 30 data reception stations scattered all over the world. ESRIN tasks include also the development of on-line catalogues and directories. More information is available at: http://www.esa.int/export/esaCP/GGGYA78RVDC_index_0.html

SFM relevant data and information services provided by ESA

7.1 Earth Observation Satellite Data

During the last decade ESA has launched three Earth Observation Satellites, ERS-1, ERS-2 and ENVISAT which have been providing useful data for forest management. The latter two are currently operated by ESA, whereas ERS-1 is no longer in operation, but its archived data are still an important information source.

The imaging radar (SAR) onboard ERS-2 provides data suitable for mapping forests. It is especially useful for detecting forest clear-cuts, and particularly in areas with frequent cloud cover, where it is very difficult to obtain images from optical sensors. ERS-2 has also an optical sensor onboard (ATSR) that is able to detect the hot spots caused by forest fires and monitor the effects of smoke particles floating in the highest layers of the atmosphere. More information on ERS-2 is available at: <http://earth.esa.int/ers/>

The ENVISAT satellite which was launched early 2002, ensures the continuity of the data provided by ERS. In addition, new features of ENVISAT are providing invaluable data to help protect forest resources. By combining multi-source data from both radar and optical sensors onboard (ASAR, AATSR and MERIS), it will be possible to derive bio-geo information worldwide that can distinguish between forest cover, clear-cut logging and agricultural land, as well as monitor land-use changes. This will help to assess forest damage, and to quantify wood supply and production. In areas which are at risk and/or difficult to access, ENVISAT data can be used to provide reports every three days on how forest cover is changing. More information on ENVISAT is available at:

http://earth.esa.int/services/esa_doc/symposia/envisat_mission_2001/brochure/is2_8_5.html

7.2 ATSR World Fire Atlas

Based on earth observation data the Advanced Along Track Scanning Radiometer (ATSR) World Fire Atlas covers data from 1995 up to now (ERS-2 lifetime). The ESA Web Map Server enables an easy visualisation of the fires. Monthly global fire maps and statistics of global fire are available at: <http://shark1.esrin.esa.it/ionia/FIRE/AF/ATSR/>

The related GLOBSCAR Project provides one complete year of burn scar at 1 km resolution for the year 2000. An upgraded archive of global burnt surface occurrence is directly available on the Web at: http://shark1.esrin.esa.it/ionia/FIRE/BS/ATSR/atsr_pd.html

8 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

FAO is a specialised agency of the United Nations and the UN lead agency in issues related to forestry. FAO's goal in forestry is to enhance human well-being by supporting member countries in the sustainable management of the world's trees and forests. Article I/1 of the Constitution mandates FAO to, 'collect, analyse, interpret and disseminate information relating to nutrition, food and agriculture'. The Constitution specifies that the term 'agriculture' and its derivatives, include fisheries, marine products, forestry and primary forestry products. FAO serves as a facilitator and neutral forum for policy and technical dialogue and as a source of global information. More information is available at: <http://www.fao.org/>

SFM relevant data and information services provided by FAO

8.1 FAOSTAT

FAOSTAT is an on-line and multilingual statistical database. Ranging from 1961 to the present FAOSTAT contains over 1 million time-series records covering international statistics in the following SFM relevant areas:

- Production
- Trade
- Fertiliser and pesticides
- Land use and irrigation
- Forest products

The database is available at: <http://apps.fao.org/>

8.2 Forest Products Database

The FAO Forest Products database has been compiled by the Forestry Department of FAO in collaboration with the UN Economic Commission for Europe (UNECE) in forms of annual questionnaires. The database contains annual data on the production and trade (quantity and value) in forest products from the year 1961 onwards. The forest products covered are:

- Roundwood
- Sawnwood
- Wood panels
- Pulp
- Paper and Paperboards

The database is available at: <http://www.fao.org/waicent/faostat/agricult/fore-e.htm>

8.3 Forestry Information System (FORIS)

FORIS provides services for decentralised information management serving primarily the needs of forestry department's technical units, but also provides a platform for information exchange with partner organisations. FORIS Stat is a web-based tool for structuring and maintaining statistical data, e.g. by country, including references, source data, transformation to other classification systems or time series handling. More information is available at:

<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=1700&langId=1>

8.4 Forestry Country Profiles

The Forestry Country Profiles enable search for forestry data and information by country. Profiles on 214 countries include e.g. the following forestry related information:

- Criteria and indicators
- Ecological zones
- Fires
- Forest cover and change
- Forest land ownership
- Forests under management
- Forest services
- Geographic description
- Industrial wood production, products and trade
- Legislation, legal texts, definitions
- Non-wood forest products
- Plantations
- Protected areas
- Trees outside forests
- Vegetation
- Volume and biomass

More information is available at: http://www.fao.org/forestry/fo/country/nav_world.jsp

8.5 World-wide Information System on Forest Genetic Resources (REFORGEN)

The development of REFORGEN was initiated in 1993 to fill an identified gap in information. It has been developed for use by national institutions which, at the same time, are the main providers of the information stored in the system. The overall objective is to make available reliable and up-to-date information on forest genetic resources for use in planning and decision making at national, sub-regional, regional and international levels. Presently the database contains information for 157 countries on:

- Data by species on status and activities in the field of forest genetic resources
- Data on institutions active in the field of forest genetic resources

The database is available at: <http://www.fao.org/montes/for/form/FOGENRES/reforgen/>

8.6 Non-Wood Forest Products Database

The data stored in the non-wood forest products information system is based exclusively on replies to a questionnaire sent out to the people on the mailing list of the FAO and on further direct online input. The information is categorised into different geographical areas, organisations, fields, activities, and production. The database is available at:

<http://www.fao.org/FORESTRY/FOP/FOPW/NWFP/nwfpdb-e.stm>

8.7 Global Information and Early Warning System on Food and Agriculture (GIEWS)

GIEWS is the Global Information and Early Warning System on Food and Agriculture which is located in the Commodities and Trade Division of FAO. The aim of GIEWS is to collect, aggregate and analyse data inter alia on forest fire outbreaks, areas affected and damage caused, and from this, to help to detect trends. GIEWS is a system used for fire warning to predict weather patterns which may increase the risk of forest fires and thus be used in early warning to ensure national and regional level action towards control. GIEWS provides access to the following databases:

- GeoWeb server
- Data base on Western and Central Africa (in French)
- Data base on Eastern Africa
- Data base on Southern Africa
- Satellite images in Latin America and the Caribbean

More information and the databases are available at: <http://www.fao.org/ES/giews/>

8.8 Global Terrestrial Observation System (GTOS)

GTOS is a system for observations, modelling, and analysis of terrestrial ecosystems to support sustainable development. The central mission of GTOS is to provide data for detecting, quantifying, locating and giving early warning of changes in the capacity of terrestrial ecosystems to sustain development and improvements in human welfare. The core of GTOS will be a permanent observing system for the world's key managed and natural ecosystems. The system is based on a five-tier data sampling strategy involving large-scale studies of the earth's major environmental gradients, agricultural and ecological research centres, field stations and a gridded series of some 10 000 sampling sites. GTOS focuses on five issues of global concern:

1. Changes in land quality
2. Freshwater resources availability
3. Pollution and toxicity
4. Loss of biodiversity
5. Climate change

More information is available at: <http://www.fao.org/gtos/>

8.8.1 Terrestrial Ecosystem Monitoring Sites (TEMS)

The TEMS database is an international directory of sites and networks that carry out long-

term terrestrial monitoring and research activities. The database provides information on long-term terrestrial monitoring that can be useful to both the scientific community and policy-makers. TEMS was built by GTOS and contains an advanced query system, a new set of core variables (e.g. forest cover change), interactive ecological maps and access to satellite data catalogues. More information is available at:

<http://www.fao.org/gtos/tems/index.jsp>

8.9 EcoPort

EcoPort is an access portal to ecology knowledge for natural resource managers. It is an open source public-domain, internet-based information service that provides controlled input but open access to reliable knowledge about the biological entities of the earth's life support systems and the resource management decisions that determine their sustainability. More information is available at:

http://www.fao.org/forestry/fop/fopw/nwfp/digest/sent/digest09_01.stm#P10_385

8.10 Global Forest Resources Assessment (FRA)

FAO reports on the world's forest resources through the 'Forest Resources Assessment Programme' about every decade with intermediate updates every 5 years. The forest resources assessment reports provide data on parameters relevant to productive, environmental and socio-economic aspects of forests and forestry. They provide therefore comprehensive information on the status, dynamics and responses of the forest ecosystem and management in single countries as well as regional overviews.

The report 'Global Forest Resources Assessment 2000' (FRA 2000) reviews the state of the world's forests at the end of the millennium. TBFRA 2000 data (c.f. chapter 18.1) have been included in the FRA 2000 data set to provide a single global source of data on the world's forests, with comparable terms and definitions for all countries. FRA 2000 tables include, among others, data on:

- Forest area and area change
- Wood volume and woody biomass
- Forest plantations
- Trees outside the forest
- Biodiversity
- Forest under management
- Forests in protected areas
- Forest fires
- Wood supply
- Non-wood forest products
- Basic country data

The results of FRA 2000 are available as printed reports as well as in Internet in the form of country profiles, synthesis reports and global maps. More information is available at:

<http://www.fao.org/forestry/fo/fra/index.jsp>

8.11 State of the World's Forests

The State of the World's Forests reports are published every two years. They contain information on the status of forests, recent major policy and institutional developments and key issues concerning the forest sector. The purpose of the publication is to provide current, reliable and policy-relevant information.

The State of the World's Forests report 2003 focuses on the situation and recent developments in the forest sector as well as on selected current issues in the forest sector.

Data is provided for 213 countries on:

- Population, GDP, land areas
- Forest area in 2000
- Forest cover change, 1990-2000
- Forest types, volume and biomass
- Production, trade and consumption of forest products in 2000
- International conventions and agreements

This publication provides a diverse and extensive profile of the current state of world's forest resources and the progress in and challenges to their sustainable management. It is a resource which can facilitate informed discussion and decision-making about the world's forests. The State of the World's Forests report 2003 is available at:

<http://www.fao.org/forestry/FO/SOFO/sofo-e.stm>

8.12 Yearbook of Forest Products

The Yearbook of Forest Products includes statistics on production, imports, exports, inter-country trade and apparent consumption of wood products, compiled by FAO for all countries (using UNECE data for UNECE members). The latest Yearbook of Forest Products 2000 was published in 2002. More information is available at:

<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=1800&langId=1>

8.13 Global Fibre Supply

In 1995 the FAO Advisory Group on Paper and Wood Products and the FAO Forestry Department initiated the Global Fibre Supply Model (GFSM). Along with a simple forecasting model, the global fibre supply report includes a compilation of the then most recent forest inventory statistics, information and analysis on industrial fibre sources and their utilisation as well as data on recovered fibre and non-wood fibre. The report is available at:

<http://www.fao.org/forestry/fop/fopw/gfsm/gfsmint-e.stm>

9 INTERNATIONAL LABOUR ORGANIZATION (ILO)

The International Labour Organization is the UN specialised agency which seeks the promotion of social justice and internationally recognised human and labour rights. It was

founded in 1919 and it became the first specialised agency of the UN in 1946. The ILO formulates international labour standards in the form of Conventions and Recommendations setting minimum standards of basic labour rights: freedom of association, the right to organise, collective bargaining, abolition of forced labour, equality of opportunity and treatment, and other standards regulating conditions across the entire spectrum of work related issues. It also provides technical assistance in work related fields.

SFM relevant data and information services provided by ILO

9.1 LABORSTA

LABORSTA is an International Labour Office database on labour statistics operated by the ILO Bureau of Statistics. It contains statistics and metadata for over 200 countries or territories. Yearly statistics from 1969-2001 are accessible for data on employment, unemployment, hours of work, wages, labour cost, consumer price indices, occupational injuries, strikes and lockouts. Monthly statistics from 1976-2002 are accessible for data on employment, unemployment, hours of work, wages, consumer price indices: Data on wages and hours of work in 159 occupations are available for 1983-2001. The occupations are characterised by ISIC categories, including ISIC 0.2 Agriculture, Hunting and Forestry. The database is available at. <http://laborsta.ilo.org>

9.2 Yearbook of Labour Statistics

Since 1921 labour statistics are published annually in the Yearbook of Labour Statistics which provides the principal labour statistics for over 190 countries, areas and territories, with tables providing detailed data from the last ten years.

In the Yearbook of Labour Statistics 2002 nine comprehensive chapters focus on economically active population, employment, unemployment, hours of work, wages, labour costs, consumer prices, occupational injuries, and strikes and lockouts. Data is available for ISIC categories, including ISIC 0.2 Agriculture, Hunting and Forestry. More information is available at: <http://www.ilo.org/public/english/bureau/stat/child/actrep/yearbook.htm>

9.3 Key Indicators of the Labour Market (KILMnet)

ILO launched in 1999 a new programme on Key Indicators of the Labour Market (KILM) in order to complement the regular data collection and dissemination programmes, to make labour market information more accessible for analysis and to facilitate the comparison of the key elements of national labour markets. KILM was designed to present a core set of labour market indicators and to improve the availability of the indicators to monitor new employment trends. More information is available at:

<http://www.ilo.org/public/english/employment/strat/kilm/overview.htm>

The publication Key Indicators of the Labour Market 2001-2002 is available at:

<http://www.ilo.org/public/english/support/publ/subs.htm>

10 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

Recognising the problem of potential global climate change, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. Its main objective is to assess scientific, technical and socio-economic information relevant to the understanding of human induced climate change, potential impacts of climate change and options for mitigation and adaptation. It is open to all members of the UN and WMO. More information is available at: <http://www.ipcc.ch/>

The IPCC Data Distribution Centre works towards the provision of observed global climate data sets, socio-economic scenario information and results from global climate model experiments. More information is available at: <http://ipcc-ddc.cru.uea.ac.uk/>

SFM relevant data and information services provided by IPCC

10.1 Database on Greenhouse Gas Emission Factors (EFDB)

EFDB is a database on various parameters to be used in calculation of anthropogenic emissions by sources and removals by sinks of greenhouse gases. It covers not only the so-called "emission factors" but also the other relevant parameters. EFDB contains the IPCC default data and data from CORINAIR94. More information is available at: <http://www.ipcc-nggip.iges.or.jp/EFDB/main.php>

11 INTERNATIONAL PLANT GENETIC RESOURCES INSTITUTE (IPGRI)

Founded in 1974, IPGRI is the world's largest international institute dedicated solely to the conservation and use of plant genetic resources. It has a staff of over 170, in 15 offices around the world. IPGRIS's Plant Genetic Resources Programme supports the efforts of national, regional and international systems to conserve and use plant genetic resources. It consists of regional offices and two thematic groups: Genetic Resources Science and Technology, and Documentation, Information and Training. More information is available at: <http://www.ipgri.cgiar.org/index.htm>

SFM relevant data and information services provided by IPGRI

11.1 European Forest Genetic Resources Programme (EUFORGEN)

The European Forest Genetic Resources Programme (EUFORGEN) is a collaborative programme among European countries aimed at ensuring the effective conservation and sustainable use of forest genetic resources in Europe. EUFORGEN was established as an

international mechanism to implement Strasbourg Resolution 2 of the First Ministerial Conference on the Protection of Forests in Europe (MCPFE) in 1990. It is financed by its thirty-two participating countries and is co-ordinated by IPGRI in collaboration with the Forestry Department of FAO. It operates through five species-oriented networks (Conifers, Noble Hardwoods, Black Poplar (*Populus nigra*), Mediterranean Oaks and Temperate Oaks and Beech). The activities concern the production of technical guidelines for genetic resources management of the different mandate species, as well as establishment of widely accepted information standards in support of genetically sustainable forest management in Europe. Individual EUFORGEN networks developed species-specific tools for data collection and storage (i.e. availability of genetic material for breeding programmes or for reforestation). Further information is available at: <http://www.ipgri.cgiar.org>

11.1.1 EUFORGEN Online Bibliography

The multi-species EUFORGEN Online Bibliography was created on the basis of the different bibliographic databases that were initiated within the species networks, through the contributions of individual network members. The first bibliographic database on Norway spruce (*Picea abies*) was developed in close collaboration with the IUFRO Working Party. The purpose of the database is to provide easy access to literature published mainly in journals with limited distribution. It mainly includes references to 'grey literature' associated with the broad thematic area of conservation and use of forest genetic resources. The database currently has 1 770 records and is available at:

<http://www.ipgri.cgiar.org/networks/euforgen/Biblio/search.asp>

Since the establishment of EUFORGEN in 1995, network members provided more than 600 introductory country reports and brief progress reports on the species concerned. The country reports, along with main information outputs of the networks have been published in printed network publications.

11.2 Information Platform on Forest Genetic Resources Activities in Europe

The 'Information Platform on Forest Genetic Resources Activities in Europe' was developed in order to improve the availability and accessibility of the data from the country reports on the information on genetic resources in sustainable forest management. The information is closely linked with the FAO Information System on Forest Genetic Resources (REFORGEN) (cf. chapter 8.5). The information can be searched through multi-criteria search options (by country, by species, by year) at: http://www.ipgri.cgiar.org/networks/euforgen/euf_home.htm

12 INTERNATIONAL TROPICAL TIMBER ORGANIZATION (ITTO)

The International Tropical Timber Organization (ITTO) was created in 1983 and has its headquarters in Yokohama, Japan. The ITTO facilitates discussion, consultation and international co-operation on issues relating to the international trade and utilisation of

tropical timber and the sustainable management of its resource base. More information is available at: <http://www.itto.or.jp>

SFM relevant data and information services provided by ITTO

12.1 Annual Review and Assessment of the World Timber Situation

This annual publication provides information on production and consumption of logs, sawnwood, veneer and plywood, market developments, trade and prices, major importers and exporters of secondary processed wood products as well as prices for these products, and country notes covering Africa, Asia-Pacific, Latin America and the Caribbean and consumer countries. The 'Annual Review and Assessment of the World Timber Situation 2001' is available at: <http://www.itto.or.jp/inside/review2001/index.html>

12.2 Tropical Timber Market Report

ITTO offers free Internet access to the market reports which are updated every two weeks, as well as access to the Market Information Service Archives of the market reports since 1998. The reports contains international log prices, domestic log prices, international sawnwood prices, domestic sawnwood prices, international ply and veneer prices, domestic ply and veneer prices, other panel product prices, prices of added value products, rubberwood and furniture prices, market news from the main tropical log exporters and importers, reports from, for instance, Japan, China, Germany, UK, and US market. More information is available at: http://www.itto.or.jp/market/Market_information.html

13 INTERNATIONAL UNION OF FOREST RESEARCH ORGANIZATIONS (IUFRO)

The International Union of Forest Research Organizations (IUFRO) is an international scientific body founded in 1892. IUFRO is a non-profit, non-governmental and non-political organisation, which unites more than 15,000 co-operating member scientists in over 700 member institutions in over 110 countries. The mission is to promote the co-ordination of and the international co-operation in scientific studies embracing the whole field of research related to forests and trees. More information is available at: <http://iufro.boku.ac.at/>

SFM relevant data and information services provided by IUFRO

13.1 Global Forest Information Service (GFIS)

This Internet-based system seeks to enhance access to and provision of quality forest-related information, especially available through electronic media. GFIS is an international initiative co-ordinated by IUFRO in co-operation with FAO, CIFOR, EFI and in partnership with a series of international institutions.

GFIS is based upon the notion of a distributed network of databases which catalogue the information resources of contributing GFIS partners using a common metadata standard. The Internet is used to facilitate the location and searching of metadata catalogues. It is proposed that GFIS will function by providing a standardised core of metadata, a standardised set of key words on which to search and a standardised interface between web sites and the databases. More information is available at: <http://www.gfis.net/>

13.2 International Bibliography of Forestry Dictionaries, Glossaries and Terminological Publications in Forestry and Related Sciences

This bibliography was designed to provide an overview of the existing dictionaries, glossaries and other papers and publications in the field of forestry. Compiled since 1995, it gives references to more than 370 publications covering a wide range of text types: there are thesauri, monolingual, multilingual dictionaries as well as terminologies and papers discussing terminological issues or classification problems. More information with links to on-line glossaries are available at: <http://iufro.boku.ac.at/iufro/silvavoc/>

13.3 SilvaTerm Database

This multilingual database provides the user with access to the meaning of the most frequently used terms in forestry. A technical term is presented together with a definition and additional explanations as well as the respective IUFRO Unit which has approved the information provided. Equivalent terms are given in up to eight languages. The database is available at: <http://iufro.boku.ac.at/iufro/silvavoc/svdatabase.htm>

14 IUCN – THE WORLD CONSERVATION UNION

The World Conservation Union, founded in 1948, brings together states, government agencies and a diverse range of non-governmental organisations in a world partnership of 980 members in 140 countries. Through its six commissions, IUCN draws together over 10 000 expert volunteers in project teams and action groups, focusing in particular on species and biodiversity conservation and the management of habitats and natural resources. More information is available at: <http://www.iucn.org/>

SFM relevant data and information services provided by IUCN

14.1 2000 IUCN Red List of Threatened Species

In the 2000 IUCN Red List of Threatened Species listings of animals and plants have been combined for the first time. It includes new assessments, including all bird species, many bat species, most primates, molluscs, and many others, with those from previous publications (1997 Red List of Threatened Plants and 1996 Red List of Threatened Animals). The

combined list of animals and plants contains now assessments of more than 18 000 taxa. Of this 11 000 are threatened species. The data was inter alia derived from the UNEP-WCMC Threatened Plants Database (cf. chapter 21.3), UNEP-WCMC Animals database (cf. chapter 21.5) and from the BirdLife Publication "Threatened Birds of the World" (<http://www.birdlife.net>). The multitude of data and the move towards improved documentation of each species on the list led to the exclusively annual release of the Red List in electronic format, via the Internet, and as a CD-ROM. The 2000 IUCN Red List of Threatened Species is available at: <http://www.iucn.org/bookstore/>

14.2 Global Red List of Conifers

The report 'Conifers: Status Survey and Conservation Action Plan' reveals that of the 630 conifer species, 355 are listed as of conservation concern, with 200, or 25% of species, threatened with extinction. This Action Plan assesses conifer diversity and its threats. It is unique among IUCN's Plant Action Plans so far published, in that it gives the complete Global Red List of Conifers using the 1994 IUCN Red List Categories and criteria. Data is analysed to identify "conifer hot spots", where conservation should be a priority, and a short-list of threatened species is prioritised. More information is available at: <http://www.iucn.org/bookstore/SpeciesAP4.htm>

14.3 United Nations List of Protected Areas

The 1997 United Nations List of Protected Areas, prepared by the World Conservation Monitoring Centre and IUCN World Commission for Protected Areas, reveals a global network of over 30 000 protected areas designated under national legislation which covers 13.2 million square kilometres of land, freshwater and sea and accounts for nearly 8% of the world's land area, as well as 1.5 million square kilometres of sea. This definitive list is arranged by country and classified by management aims, ranging from strict protection to protected areas managed for the sustainable use of natural ecosystems. Many protected areas designated by national authorities are also recognised for their international importance under global or regional conventions and programmes. Listed are 891 Ramsar Wetlands, 114 World Heritage sites, 352 Biosphere Reserves and 1 470 Special Protection Areas. All data is derived from the UNEP-WCMC Protected Areas Database (cf. chapter 21.1). The 2002 United Nations List of Protected Areas is presently under preparation. More information is available at: <http://www.iucn.org/bookstore/pro-areas-4.htm>

14.4 Environmental Law Information (ELIS/ECOLEX)

The Environmental Law Information System (ELIS) is a computer-based reference system, which holds bibliographic and descriptive data on environmental law related documents such as multilateral treaties, national legislation and law and policy literature. Based in Bonn, Germany, ELIS and its corresponding libraries are jointly maintained by the IUCN Environmental Law Centre (ELC) and the International Council of Environmental Law (ICEL). ELIS covers the entire spectrum of issues related to the conservation of the natural environment from pollution issues to natural resource use and conservation. This information

is available at: <http://www.iucn.org/themes/law/elc01.html>

In a joint project, IUCN and UNEP established the Internet-based information system ECOLEX to provide global access to information on environmental law. ECOLEX contains bibliographic references and links to full texts where available. A number of search facilities enables the user to find comprehensive legal information. ECOLEX is available at: www.ecolex.org

In a new development, FAO has joined IUCN and UNEP to contribute its huge national legislation database FAOLEX to the information offered in ECOLEX. FAOLEX is currently only linked with ECOLEX, but it is hoped to merge both databases and develop a common keyword indexation.

15 MINISTERIAL CONFERENCE ON THE PROTECTION OF FORESTS IN EUROPE (MCPFE)

The MCPFE is a high-level political initiative for co-operation. It addresses common opportunities and threats related to forests and forestry and promotes sustainable management of forests in Europe. Launched in 1990, it is the political platform for the dialogue on European forest issues. 44 European countries and the European Community are represented in the MCPFE. Furthermore non-European countries and international organisations participate as observers. Thus, the MCPFE provides not only a forum for co-operation of ministers responsible for forests, but also allows non-governmental and intergovernmental organisations to contribute with their knowledge and ideas. More information is available at: <http://www.mcpfe.org>

SFM relevant data and information services provided by MCPFE

15.1 State of Europe's Forests 2003

The MCPFE Report on Sustainable Forest Management in Europe gives an overview of the latest facts and figures on forests as well as a picture of the status of sustainable forest management in Europe. The purpose of this report, jointly prepared by the MCPFE Liaison Unit Vienna and UNECE/FAO, is to provide the most recent, objective, quantified and comparable data about sustainable forest management in Europe. It also provides an updated information source for decision makers and other stakeholders and should serve as a background document for new commitments. This report is mainly based on 2002 updates of the forest resource assessment data of UNECE/FAO (cf. chapters 8.10 and 18.1). Additionally, new data on protected and protective forest areas were collected by UNECE and MCPFE in 2002 according to the "MCPFE Assessment Guidelines for Protected and Protective Forest and Other Wooded Land in Europe". The report is structured according to the six Pan-European Criteria for Sustainable Forest Management which define the goals of sustainable forest management. Detailed data on all aspects of sustainable forest management were in general provided by 40 countries. A special focus of this report is put

on changes that occurred in European forests between former forest resource assessments and the recent updates. More information is available at:

<http://www.mcpfe.org/livingforests Summit/>

16 ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)

The Organisation for Economic Co-operation and Development (OECD) is an international organisation of 30 member countries providing governments a setting in which to discuss, develop and perfect economic, social, environmental and sectoral policy. The OECD compares experiences, seeks answers to common problems and works to co-ordinate domestic and international policies that increasingly in today's globalised world must form a web of even practice across nations. More information is available at: <http://www.oecd.org>

SFM relevant data and information services provided by OECD

16.1 Statistics Portal

The Statistics Directorate of the OECD collects economic statistics from OECD member countries. These are standardised to make them internationally comparable and are regularly published. More than 25 statistical databases are obtainable on CD-ROM and also available online from January 1998 onwards. OECD statistics comprise SFM relevant data in the following fields:

- Agriculture and fisheries
- Demography and population
- Education
- Energy
- Environment
- Health
- Industry and services
- International trade
- Labour
- National accounts
- Prices and purchasing power parities
- Short term economic statistics
- Territorial statistics

More information is available at: <http://www.oecd.org/std> and <http://www.oecd.org/statistics>

16.2 Environmental Indicators

The OECD Core Set of Environmental Indicators, which is a commonly agreed set of indicators for OECD countries, is published regularly. The publications incorporate major indicators derived from sectoral sets as well as from environmental accounting (e.g. intensity of forest use). The recent publication 'Environmental Indicators: Towards Sustainable Development 2001' presents indicators organised by issues such as climate change, air

pollution, biodiversity, waste or water resources. More information is available at: <http://www.oecd.org/env/indicators>

Drawn from the OECD Core Set 10 Key Environmental Indicators cover topics from climate change to biodiversity, including forest resources. The publication 'Key Environmental Indicators 2001' is available at: <http://www.oecd.org/pdf/M00019000/M00019613.pdf>

16.3 Environmentally Related Taxes Database

This database provides information about environmentally related taxes, fees and charges levied in OECD member countries. The database has been developed in co-operation with OECD and the European Commission. The information has for the major part been provided by contact persons in the respective countries, in most cases in the Ministries of Finance. In some cases, information has also been taken from official web-sites of the relevant authorities. More information is available at: <http://www.oecd.org/env/tax-database>

16.4 Energy Statistics

The Energy Statistics which comprise also data on biomass are collected and maintained by the 'International Energy Agency' (IEA). The IEA is an autonomous agency linked with the OECD and is the energy forum for 25 member countries. IEA member governments have agreed to share energy information, to co-ordinate their energy policies and to co-operate in the development of rational energy programmes. The IEA publishes e.g. the 'Key World Energy Statistics 2002' and the 'Renewables Information 2002' and maintains the IEA Energy Technology Research and Development Statistics Database. More information is available at: <http://www.iea.org/statist/index.htm> and <http://www.oecd.org/statistics/energy>

16.5 Short-term Economic Statistics

OECD's 'Short-term Economic Statistics' comprise data and information in the following fields:

- Balance of payments statistics
- Exchange rates statistics
- Financial statistics (interest rates, monetary aggregates, etc.)
- Industry and services
- International trade statistics
- Labour statistics
- Leading indicators and tendency surveys
- Price statistics
- Quarterly national accounts
- Main economic indicators

More information is available at: <http://www.oecd.org/statistics/indicator>

16.6 OECD Environmental Data

Every two years the OECD publishes a compendium of environmental data to monitor environmental conditions and trends in OECD countries and to promote international harmonisation of data. The compendium is a key reference for international environmental data. The compendium presents data linking pollution and natural resources with activity in such economic sectors as energy, transport, industry and agriculture. It provides a statistical report on the state of the environment with respect to air and climate, inland waters, land, forest, wildlife, etc., for OECD member countries including Canada. More information is available at: <http://www.oecd.org/env/data>

16.7 Towards Sustainable Development: Indicators to Measure Progress

This book contains the proceedings of an OECD conference held in December 1999. It presents the wide range of initiatives and indicators that were already in place and outlines the challenges that remain in measuring progress towards sustainable development. The publication is available at:

<http://www1.oecd.org/scripts/publications/bookshop/redirect.asp?972000111P1>

17 UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT (CSD)

The Commission on Sustainable Development (CSD) was created in 1992 to ensure an effective follow-up of UNCED, i.e. to monitor and report on implementation of the Earth Summit agreements at the local, national, regional and international levels. The CSD is a functional commission of the UN Economic and Social Council (ECOSOC) with 53 members. More information is available at: <http://www.un.org/esa/sustdev/csdgen.htm>

SFM relevant data and information services provided by CSD

17.1 Indicators of Sustainable Development

The 1992 Earth Summit recognised the important role that indicators can play in helping countries to make informed decisions about sustainable development. Chapter 40 of Agenda 21 calls on countries at the national level, as well as international, governmental and non-governmental organisations to develop and identify indicators of sustainable development. The CSD's Programme of Work on Indicators of Sustainable Development (1995-2001) main objective was to make indicators of sustainable development accessible to decision-makers at the national level, by defining them, explaining their methodologies and providing training and other capacity building activities.

The CSD indicators have been organised in a thematic framework comprising of 15 themes, 38 sub-themes and 58 core indicators. One sub-theme focuses specifically on 'Forests' and

contains two core indicators 'Forest Area as a Percent of Land Area' and 'Wood Harvesting Intensity'. Closely related themes focus on 'Biodiversity' (three indicators) and 'Land' (five indicators besides two forest indicators). The 2001 CSD indicators and related methodology sheets in addition to guidelines for national implementation are available at:

<http://www.un.org/esa/sustdev/indisd/indisd-mg2001.pdf> or

http://www.un.org/esa/sustdev/indisd/isdms2001/table_4.htm

18 UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE) TIMBER COMMITTEE

The UNECE was set up in 1947 and reports to the 'Economic and Social Council' (ECOSOC). It is one of five regional commissions of the UN. Its primary goal is to encourage greater economic co-operation among its member states. UNECE activities include policy analysis, development of conventions, regulations and standards, and technical assistance. All countries of Europe, the Commonwealth of Independent States, the United States of America, Canada and Israel are members of the UNECE and participate in its work. Over 70 international professional organisations and other non-governmental organisations take part in UNECE activities. The main areas of activity of UNECE are:

- Economic analysis
- Environment and human settlements
- Statistics
- Sustainable energy
- Trade
- Industry and enterprise development
- Timber
- Transport

The UNECE has an Ad Hoc Group of Experts on the Programme of Work and seven principal subsidiary bodies:

- Committee on Environmental Policy
- Inland Transport Committee
- Committee for Trade, Industry and Enterprise Development
- Timber Committee
- Committee on Human Settlements
- Committee on Sustainable Energy
- Conference of European Statisticians

More information is available at: <http://www.unece.org>

SFM relevant data and information services are provided by the UNECE Timber Committee which constitutes a forum for co-operation and consultation between member countries on forestry, forest industry and forest product matters. It provides member countries with the information and services needed for policy- and decision-making within their forest and forest industry sector, including the trade and use of forest products. The Timber Committee also keeps under review its structure and priorities and co-operates with other international and intergovernmental organisations active in the sector, and in particular with the FAO and

its 'European Forestry Commission' and with the International Labour Organisation (ILO), in order to avoid duplication and thereby to optimise the use of resources. More information is available at: <http://www.unece.org/trade/timber/Welcome.html>

SFM relevant data and information services provided by the UNECE Timber Committee

18.1 Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)

This UNECE/FAO publication, most known as TBFRA 2000, is a comprehensive set of internationally comparable data on the temperate and boreal forests world wide. TBFRA 2000 contains data, by country, on all aspects of the forests of North America, Europe, CIS, Australia, New Zealand and Japan. It is a contribution to the global Forest Resource Assessment 2000 (FRA), led by FAO (c.f. chapter 8.10). All data were supplied by national correspondents, adjusted to conform to international definitions, and validated by UNECE/FAO. Altogether over 700 parameters were requested for each country for TBFRA 2000 presented in about 100 main tables, with statistics and comments by 55 countries. TBFRA 2000 is structured according to the following chapters:

- I Area of forest and other wooded land: status and changes
- II Ownership and management status of forest and other wooded land
- III Wood supply and carbon sequestration: status and changes
- IV Biological diversity and environmental protection
- V Forest condition and damage to forest and other wooded land
- VI Protective and socio-economic functions

More information and the report are available at:

<http://www.unece.org/trade/timber/fra/welcome.htm>

18.2 Timber Database 1964-2000

The Timber database is a collaborative effort of country correspondents, FAO, Eurostat and ITTO. The file contains some 15 000 records covering the period 1964-2000. It is organised by country, product, flow (removals, production, imports and exports) and unit showing data for each year. The database can be downloaded at:

<http://www.unece.org/trade/timber/mis/fp-stats.htm>

18.3 Forest Products Statistics 1997-2001

The database on forest product statistics contain data from 1997 to 2001 on 115 different forest products, like roundwood, wood fuel, wood charcoal, sawnwood, etc. for all UNECE countries. The database can be downloaded at:

<http://www.unece.org/trade/timber/mis/fp-stats.htm>

18.4 Forest Products Prices 1997-1999

The database on forest products prices contain data from 1997 to 1999 on 20 different forest products, like various types of roundwood, sawnwood, wood-based panels, woodpulp, and paper for countries where data was available. The database can be downloaded at:

<http://www.unece.org/trade/timber/mis/fp-stats.htm>

18.5 Forest Products Annual Market Reviews

The Forest Products Annual Market Reviews provide general and statistical information on the forest products markets in the UNECE region. The Reviews begin with general overviews of forest products markets in the region, followed by a description of the current economic situation. Standard chapters examine the markets for sawn softwood, sawn hardwood, roundwood, wood-based panels, certified forest products and tropical timber. Special chapters are included on topical issues. For each sector, production, consumption and trade are considered and relevant developments in the markets are included. Tables present detailed information and reference material. The 'Forest Products Annual Market Review, 2001-2002' is available at: <http://www.unece.org/trade/timber/mis/fpamr.htm>

18.5.1 Market Forecasts

Following the Timber Committee's annual market discussions about the current and next year's forest products markets, the Timber Committee issues a statement in the Timber Committee Market Forecasts which includes:

1. Overview of the forest products sector
2. Developments in specific forest products markets sectors for
 - Softwood (sawnwood and logs)
 - Hardwood (sawnwood and logs)
 - Wood-based panels (particle board, fibreboard and MDF, OSB, plywood)
 - Roundwood including pulpwood, pulp and paper
 - Certified forest products
3. Tables summarise forecasts in Europe and North America

Information on the 'Timber Committee Market Statement on Forest Products Markets in 2002 and 2003', 'Market Forecast Tables from Forest Products Markets: Prospects for 2003' and 'Forest Products Markets: Prospects for 2003' are available at:

<http://www.unece.org/trade/timber/mis/forecasts.htm>

18.6 European Forest Sector Outlook Studies (EFSOS)

EFSOS is focusing on an analysis of the long term development of the forest and forest products sector. The baseline study 'European Timber Trends and Prospects' (ETTS VI), to be issued in 2003, will describe the development of the forest sector including forecasts and will be complemented by specific studies, analysing the impact of changes in policy, markets and exogenous factors (e.g. climate change). More information is available at:

<http://efsos.fastnet.ch>

18.6.1 European Timber Trends and Prospects into the 21st Century

The fifth study of European timber trends and prospects (ETTS V), presents past trends and scenarios for the outlook for the supply and demand of roundwood and forest products in Europe, from 1965 to 2020. It reviews the policy context, the economic and demographic background, the outlook for the forest resource (area, growing stock and removals), external influences on the forest (pollution, climate change, European forest's contribution to the carbon budget), supply and demand for forest products, use of wood residues, waste paper recycling, Europe's trade with other regions, wood energy. The study also presents two quantified base scenarios for the sector to 2020, as well as alternative scenarios, with differing assumptions about prices, raw material costs, construction activity, waste paper recovery, energy prices and policy, environmental policies and reduced global availability of wood. More information is available at:

http://www.unece.org/efsos/fichiers/Outlook_history/main.asp?chemin=etts5.html

18.7 Forest and Forest Industries Country Fact Sheets

The forest and forest industries country fact sheets provide an overview of forest resources and forest products in 49 countries of the UNECE region. For each country profiled, statistics are presented on its forest resources and their utilisation by forest industries in production, trade and consumption of primary forest products like roundwood, sawnwood, wood-based panels, woodpulp, paper and paperboard, fuelwood and waste paper. A contact for further information is given for each country. More information is available at:

<http://www.unece.org/trade/timber/tim-fact.htm>

18.8 Certified Forest Products

General information on certified forest products markets and forest certification are available for Europe, Canada and the United States. Annual updates on the status of forest certification in the ECE region and developments in the region are published and online available since 1998. More information is available at:

<http://www.unece.org/trade/timber/mis/cfp.htm>

18.9 Timber Bulletin

The Timber Bulletin provides regularly detailed information on the forest products sector containing statistics on production, removals, trade (total and by origin and destination), prices, results of an annual survey on forest fires, analyses of market developments and prospects for the coming year. More information is available at:

<http://www.unece.org/trade/timber/tc-publ.htm#Timber Bulletin>

18.10 Forest Fire Statistics

Covering the UNECE region these statistics show the number and size of fires by forest

types and causes. Since 1994 the forest fire statistics are published under the Timber Bulletin and are online available at: <http://www.unece.org/trade/timber/ff-stats.html>

18.11 International Forest Fire News (IFFN)

The International Forest Fire News, published twice a year in co-operation with the Global Fire Monitoring Center (GFMC), includes detailed fire reports and statistics from 70 nations. More information is available at:

<http://www.unece.org/trade/timber/tc-publ.htm#International Forest Fire News>

19 UNECE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION (CLRTAP)

The UNECE Convention on Long-range Transboundary Air Pollution (CLRTAP) was drafted after scientists demonstrated the link between sulphur emissions in continental Europe and the acidification of Scandinavian lakes and later studies confirmed that air pollutants could travel several thousand kilometres before deposition and damage occurred. This implied that co-operation at international level was necessary to solve problems such as acidification. The convention was the first internationally legally binding instrument to deal with problems of air pollution on a broad regional basis. It was signed in 1979 and came into force in 1983. Since then the convention has been extended by eight protocols. More information is available at: <http://www.unece.org/env/lrtap/>

A Working Group on Effects (WGE) was established under the CLRTAP to develop the necessary international co-operation in research and the monitoring of pollutant effects. The group provides information on the degree and geographic extent of the impacts on human health and the environment of major air pollutants, such as sulphur and nitrogen oxides, ozone and heavy metals. Its six 'International Co-operative Programmes' (ICPs) identify the most endangered areas, ecosystems and other receptors by considering damage to human health, terrestrial and aquatic ecosystems and materials. All ICPs report to the WGE. The ICPs are:

- ICP on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests)
- ICP on Assessment and Monitoring of Acidification of Rivers and Lakes (ICP Waters)
- ICP on Effects of Air Pollution on Materials, including Historic and Cultural Monuments (ICP Materials)
- ICP on Effects of Air Pollution on Natural Vegetation and Crops (ICP Vegetation)
- ICP on Integrated Monitoring of Air Pollution Effects on Ecosystems (ICP Integrated Monitoring)
- ICP on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (ICP Modelling and Mapping)

More information is available at: <http://www.unece.org/env/wge/>

19.1 International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests)

ICP Forests was launched in 1985 reflecting the growing public awareness of possible adverse effects of air pollution on forests. ICP Forests monitors forest condition in Europe, in co-operation with the EU, using two monitoring intensity levels. The first grid (level I) was established in 1986. Since then the crown condition has annually been monitored on a systematic transnational grid of 16x16 km throughout Europe, complemented by assessments on national grids of varying densities (33 600 sample plots with about 622 000 sample trees). Between 1992 and 1996 soil condition and foliar nutrient status were also assessed. The second monitoring intensity level (level II) has been installed since 1994 in selected forest ecosystems in Europe on 863 permanent observation plots. In addition to annual crown condition assessments the following are measured:

- air concentration measurements,
- deposition of air pollutants
- foliar nutrient status,
- ground vegetation,
- forest growth,
- litterfall,
- meteorological condition,
- phenological observations,
- soil and soil solution chemistry,

Currently 38 countries participate in the ICP Forests. More information is available at: <http://www.icp-forests.org/>

SFM relevant data and information services provided under the CLRTAP

19.2 Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)

The main objective of the EMEP programme is to provide governments and subsidiary bodies under the CLRTAP convention regularly with qualified scientific information to support the development of national and international air pollution abatement policies and the review of the international protocols on emission reductions negotiated under this convention. The EMEP programme relies on four main elements:

1. Collection of air emission and projection data
2. Measurements of air and precipitation quality
3. Modelling of atmospheric transport and deposition of air pollution
4. Integrated assessment modelling

Through the combination of these four elements, EMEP fulfils its required assessment and regularly reports on:

- Emissions and projections
- Concentrations and/or depositions of air pollutants
- Quantity and significance of transboundary fluxes and related exceedances to critical loads and levels

- Cost-effective abatement strategies to reach environmental targets

More information is available at: <http://www.emep.int/>

19.3 The Condition of Forests in Europe

The annual Forest Condition Reports are prepared under the auspices of the CLRTAP, ICP Forests and the European Commission. They present the latest results of the forest monitoring programme. The early forest condition monitoring in the 1980's mainly comprised the assessment of crown condition. Currently, the monitoring results in a broad-scale overview on forest condition involving many monitoring sites, and in in-depth studies at fewer sites to establish forest ecosystem reactions to multiple stress factors.

The 2002 Executive Report, summarising the main programme findings, is available at: <http://www.icp-forests.org/RepEx.htm>

Level I Technical Report 2002 is available at: <http://www.icp-forests.org/RepTecl.htm>

Forest Intensive Monitoring in Europe - Technical Report 2002 is available at: <http://www.icp-forests.org/RepTecll.htm>

20 UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

The United Nations Environment Programme (UNEP), established in 1972, works to encourage sustainable development through sound environmental practice everywhere. Its activities cover a wide range of issues, from environmental monitoring, assessment and information to policy development and implementation and from early warning to emergency response of both natural and man-made environments: such as atmosphere, water and terrestrial ecosystems, as well as industry, trade and infrastructure. UNEP's forestry related cross-sectoral and multidisciplinary activities concern:

- Identification, monitoring and assessment of major environmental problems
- Climate research
- Assessment of land cover and land degradation
- Biodiversity

More information is available at: <http://www.unep.org> or <http://www.unep.net>

SFM relevant data and information services provided by UNEP

20.1 Global Environment Outlook (GEO) Data Portal

The GEO Data Portal was first initiated in October 2000 to provide a comprehensive, reliable and timely supply of data for the preparation of UNEP's GEO reports. Since then, it has matured into a unique data and information application which responds to the needs of the global environmental community for easy access to systematic and well-documented data on the environment, including the state of natural resources, as well as the societal driving forces and root causes of environmental change and degradation.

The GEO Data Portal holds global environmental statistics and maps, presently amounting to some 300 data sets in total. These can all be displayed, queried and explored on-line through maps, graphs and tables, and downloaded for further use. As the GEO reporting process is organised along regional lines (mainly continents) and sub-regions, national data sets have been aggregated at those levels. The contents are guided by the data strategy for the GEO process, and can be related to:

- societal driving forces (economic development, population)
- environmental pressures (emissions, pollution)
- state-of-the-environment (air, land and water)
- impacts on natural ecosystems and human health (biodiversity loss, diseases, life expectancy etc.)

Thus, the Data Portal hosts data sets such as: population size and growth, educational enrollment, GDP per capita, land cover, CO₂ and other green-house gas emissions, natural disasters and others. The GEO Data Portal can be accessed at <http://geodata.grid.unep.ch>

20.1.1 Global Environmental Outlook (GEO) Report

The Global Environmental Outlook series make periodic reviews of the state of the world's environment, and provides guidance for decision-making processes such as the formulation of environmental policies, action planning and resource allocation. More information is available at: <http://www.unep.org/geo>. The topical Third Global Environmental Outlook Report is available at: <http://www.unep.org/geo/geo3>

20.2 State of the Environment (SoE) Reports

SoE Reports exist for various countries in Asia, CIS, Europe, North and South America as well as Australia. These present an aggregate overview of the state of the environment in these countries to the general public in a user-friendly form. The Internet reports are based on environmental indicators which though limited are easily understandable and based primarily on graphs, pictures, maps and tables. The reports are available at: <http://www.unep.org/soe/>

20.3 Environment and Natural Resources Information Network in Central and Eastern Europe and the Newly Independent States (CEE/NIS ENRIN)

The main objective of this network is to improve the availability of environmental data and information for decision-makers and the general public. Through ENRIN participating national and sub-regional partner institutions and agencies are enabled to collate, store, manage and disseminate environmental data and information and to use modern information technologies to assess environment and development issues for decision-making, policy setting and planning. The benefit for UNEP is better access to information of significance for international assessments. One output of ENRIN are the State of the Environment Reports. More information is available at: <http://www.grida.no/enrin/index.htm>

20.4 Global Resource Information Database (GRID)

GRID is a global network of environmental data centres facilitating the generation and dissemination of key environmental geo-referenced and statistical data-sets and information products, focusing on environmental issues and natural resources. The GRID database is maintained for the purpose of assisting the international community and individual nations in making sound decisions about resource management and environmental planning and where applicable, providing data for scientific studies. GRID centres typically have the ability, expertise and specialised information technology (environmental data management, remote sensing/Geographic Information Systems) to prepare, analyse and present the environmental data and information which form the basis for reliable environmental assessments. Information on GRID centres in Europe as well as worldwide is available at:

<http://www.grid.unep.ch/> or <http://www.grida.no/about/nodesjs.htm>

20.4.1 GRID-Arendal's Online GIS, Map and Graphics Database

The GRID-Arendal's online database comprises GIS datasets, maps and graphics, metadata, reports as well as other GIS links. The GIS datasets contain, for instance, a number of datasets on biodiversity, protected areas, terrestrial geography or wilderness. The database is available at: <http://www.grida.no/db/index.htm>

20.4.2 GRID-Geneva's Global and European Databases

GRID-Geneva's Global and European databases cover a wide variety of thematic layers, such as climate, soils, vegetation and water-related digital geo-referenced data sets, as well as infrastructural and socio-economic data sets on human population, boundaries, roads and railways. These data sets are fully documented in an electronic catalogue (meta-database). More information is available at: www.grid.unep.ch

20.5 INFOTERRA

INFOTERRA was established in 1974 as a decentralised worldwide network of information centres to ease the exchange of environmental information and expertise. These are the 177 National Focal Points (NFPs). At the national level, INFOTERRA provides a wide range of traditional environmental information products and services including environmental bibliographies, directories of sources of information, query-response services, and environmental awareness leaflets. The INFOTERRA network is contributing input to the Environment Directory - a comprehensive metadata tool developed to support the global environmental portal UNEP.Net (www.unep.net). The Environment Directory is accessible on-line at: www.environment-directory.org and more information on INFOTERRA is available at: <http://www.unep.org/infoterra>

21 UNEP WORLD CONSERVATION MONITORING CENTRE (UNEP-WCMC)

The 'UNEP World Conservation Monitoring Centre', based in Cambridge, UK, provides information for policy and action to conserve the living world. Being an office of the UN the Centre's work is an integral part of the United Nations Environment Programme. The Centre supports international programmes for conservation and sustainable development by providing reliable scientific data on the world's biodiversity. The Centre's activities include assessment and early warning studies in forest, dryland, freshwater and marine ecosystems. Research on endangered species and biodiversity indicators is undertaken with the use of geographic information systems (GIS) and other analytical technologies that help to visualise trends, patterns and emerging priorities for conservation action. More information is available at: <http://www.unep-wcmc.org>

SFM relevant data and information services provided by UNEP-WCMC

UNEP-WCMC maintains a large and varied collection of databases concerning nature conservation, developed in collaboration with a range of partners, particularly IUCN. For more information see: <http://www.unep-wcmc.org/forest/ho>

21.1 Protected Areas Database

UNEP-WCMC has been working with information on protected areas since 1981 in close collaboration with the World Commission on Protected Areas and the IUCN Programme on Protected Areas. It manages a database on internationally and nationally designated protected areas that includes records on approximately 18 000 national parks and protected areas. The data are updated regularly as they form the basis of the UN List of Protected Areas and are linked in many cases to detailed spatial data on reserve locations and boundaries, which are maintained in GIS format. The database also contains overviews of the species and habitats to be found within protected areas. The United Nations List of Protected Areas (cf. chapter 14.3) is as well included. More information is available at: http://www.unep-wcmc.org/protected_areas/index.html

21.2 Datasets and Maps of Forests and Protection

Since 1987, UNEP-WCMC has been gathering and compiling spatial data on the extent and conservation status of forests from a variety of national and international sources. GIS data were first assembled for closed moist tropical forests and used to publish the three volumes of the Conservation Atlas of Tropical Forests. The first digital 'World Forest Map' was produced in 1996 showing actual forest extent and protected areas with forested land. UNEP-WCMC updates its mapped data on the global distribution of forests continuously, by collaborating with other organisations to obtain and exchange forest. Data from a wide range of sources compiled at a wide range of scales and using many different classifications, are harmonised to provide regional and global overviews of forest cover and biodiversity. More information is available at: http://www.unep-wcmc.org/forest/fp_background.htm

UNEP-WCMC also provides data on some unique forest types at global and regional scales. For example, it has generated the first 'Global Map of Mountain Forests' (see <http://www.unep-wcmc.org/habitats/mountains/index.html>).

Using the forest cover and protected areas data, UNEP-WCMC produces regular updates on the protection status of forests worldwide. The first of these was completed in 1997 in collaboration with the Center for International Forestry Research (CIFOR) and published on the CD ROM 'A Global Overview of Forest Conservation', which contained both a statistical analysis of the protection status of 25 forest types and GIS files of the data used in the analyses. The most recent analysis was performed in 2000 and made available via the Internet. For more information see: <http://www.unep-wcmc.org/forest/statistics.htm>

A separate analysis has also been performed for Europe using a regionally appropriate forest classification to provide information on the extent, distribution and protection status of 20 broad and 66 specific forest types. For further information see: http://www.unep-wcmc.org/forest/eu_gap/index.htm

21.3 Threatened Plants Database

The Threatened Plants Database currently contains data on more than 140 000 plant names, conservation status and data concerning all taxa listed on CITES (Convention on International Trade in Endangered Species of Fauna and Flora) providing a unique overview of plants threatened at global level. The 'IUCN Red List of Threatened Species' is produced directly from this database (cf. chapter 14.1). More information is available at: <http://www.unep-wcmc.org/species/plants/overview.htm>

21.4 Tree Conservation Database

The tree conservation database links with the forest and trade programmes providing data on habitats and use, and with the Global Trees Campaign. The database was developed from the 'Threatened Plants Database' and contains updated information on over 8 000 tree species which are threatened with extinction at a global level. It includes the IUCN Red List Categories, information on distribution, uses, ecology, threats and conservation measures. Summary information on individual species is published in 'The World List of Threatened Trees'. More information can be found at: <http://www.unep-wcmc.org/trees/index.html>

21.5 Animals Database

The UNEP-WCMC Animals Database holds information on threatened animals of the world. Part of this database is common to 'The IUCN Red List of Threatened Species' (cf. chapter 14.1). This database is a result of long-term collaboration between scientists worldwide and many organisations, notably the Species Survival Commission of IUCN, BirdLife International and UNEP-WCMC. More information is available at: http://www.unep-wcmc.org/index.html?http://www.unep-wcmc.org/species/animals/animal_redlist.html~main

22 THE WORLD BANK GROUP

Founded in 1944, the World Bank Group is one of the world's largest sources of development assistance. The World Bank Group consists of the following five closely associated institutions: The International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA) and the International Centre for Settlement of Investment Disputes (ICSID). Each institution plays a distinct role in the mission to fight poverty and improve living standards for people in the developing world. The term 'World Bank' refers specifically to IBRD and IDA.

The Bank, which provided US\$ 17.3 billion in loans to its client countries in fiscal year 2001, is working in more than 100 developing economies, bringing a mix of finance and ideas to improve living standards and eliminate the worst forms of poverty. The World Bank is owned by more than 180 member countries. More information is available at:

<http://www.worldbank.org/>

SFM relevant data and information services provided by the World Bank Group

Almost all the data reported by the World Bank are derived from official national statistical systems. More information is available at: <http://www.worldbank.org/data>

22.1 World Development Indicators (WDI)

The World Development Indicators (WDI) is the World Bank's premier annual compilation of data about development. WDI 2002 includes approximately 800 indicators in 87 tables, organised in six sections:

- World view
- People
- Environment, including land use, deforestation, biodiversity, protected areas
- Economy
- States and markets
- Global links

The tables cover 152 economies and 14 country groups with basic indicators for a further 55 economies. WDI 2002 print edition offers the current overview of reliable data from the past few years. More information is available at:

<http://www.worldbank.org/data/wdi2002/index.htm>

For timeseries data from 1960 and onwards more information is available at:

<http://www.worldbank.org/data/wdi2001/cdrom.htm>

22.2 The Little Green Data Book

The Little Green Data Book is based on the World Development Indicators, 2002. Under the headings of agriculture, forests, biodiversity, energy, emissions and pollution, water and sanitation, and 'greener' national accounts, the Little Green Data Book presents key indicators of the environment and its relationship to people for more than 200 countries. The

data can also be downloaded from Internet. More information is available at:

<http://lnweb18.worldbank.org/ESSD/essdext.nsf/44DocByUnid/2883C0E2AEF37CB985256C40004D5F84?Opendocument>

22.3 Environmental Performance Indicators (EPIs)

Environmental Performance Indicators are selected indicators for various broad categories of environmental problems. Addressed are:

- Forestry
- Biodiversity
- Land use
- Air pollution
- Water pollution
- Global environmental problems
- Institutional issues

The publication is available at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2000/02/09/000094946_00012505400754/Rendered/PDF/multi_page.pdf

23 WORLD RESOURCES INSTITUTE (WRI)

The World Resources Institute (WRI), is an environmental think tank that goes beyond research to find practical ways to protect the earth and improve people's lives. Founded in 1982, its goal is to place questions of natural resource destruction, environmental pollution, and ecosystem degradation on the global agenda. Today WRI comprises 150 professionals from more than 20 nations and partner institutions in more than 50 countries, using new information and communication technology to influence decisions, provide information, ideas, and solutions to global environmental problems. More information is available at: <http://www.wri.org>

SFM relevant data and information services provided by WRI

23.1 Global Forest Watch (GFW)

Global Forest Watch is an international data and mapping network that combines on-the-ground knowledge with digital technology to provide accurate information about the world's forests. GFW promotes transparency and accountability into the decision making processes that determine how forests are managed and for whom, by:

- Tracking the actors (corporations, government agencies, individuals) that are sponsoring development activities
- Mapping out where these actors are operating
- Monitoring the degree to which these actors are following national and local management laws and regulations

All GFW data and products undergo a formal review process that includes national forest experts from the country of focus as well as international forest experts. More information is available at: <http://www.globalforestwatch.org/english/index.htm>

23.2 World Resources Report

The regularly published reports on the World's Resources are prepared by UNDP, UNEP, the World Bank and WRI as a guide to the global environment. The report 'World Resources 2002-2004 - Decisions for the Earth: Balance, voice, and power' focuses on the importance of good environmental governance. It also presents national statistics on current environmental, social, and economic trends in more than 150 countries. This edition departs from previous ones by making the full World Resources database freely accessible and searchable on-line in the companion website EarthTrends (www.earthtrends.wri.org). The EarthTrends site also provides data tables, country profiles and maps about current conditions. The report is forthcoming in May 2003. More information is available at: http://pubs.wri.org/pubs_description.cfm?PubID=3764

24 WORLDWATCH INSTITUTE

Worldwatch is a non profit public policy research organisation dedicated to informing policymakers and the public about emerging global problems and trends and the complex links between the world economy and its environmental support systems. By providing compelling, accessible, and fact-based analysis of critical global issues, Worldwatch informs people around the world about the complex interactions between people, nature, and economies. More information is available at: www.worldwatch.org

SFM relevant data and information services provided by Worldwatch

24.1 State of the World

The annual publications of Worldwatch on the state of the world include comprehensive, up-to-date, and accessible summaries on the global environment and are published in 20 different languages. The 2003 State of the World Edition focuses, inter alia, on habitat loss, extinct bird species and renewable energies. The report is available at: <http://www.worldwatch.org/pubs/sow/2003/>

24.2 Vital Signs

Worldwatch provides regularly comprehensive, user-friendly information on key trends and developments. The current edition of 'Vital Signs 2002: Trends that are shaping our future' presents more than 50 key indicators of long-term trends in the fields of food and agriculture, environment, energy, atmosphere, economy, transportation, communication, health and military. Unchecked forest loss is a special feature. The report is available at:

<http://www.worldwatch.org/pubs/vs/2002/>

25 WORLD WIDE FUND FOR NATURE (WWF)

The World Wide Fund For Nature (WWF) is the world's largest independent conservation organisation. WWF is committed to halting and reversing forest loss and degradation worldwide. Presently, it has more than 300 forest related on-the-ground projects. In 1996, WWF launched the Forests for Life Campaign, which is working to achieve greater forest protection and promoting sustainable forest management world-wide.

The World Bank/WWF Alliance for Forest Conservation & Sustainable Use was founded in 1997 as a response to the depletion of the world's forest biodiversity, and of the forest-based goods and services essential for sustainable development. Since its inception the Alliance has mobilised approximately US\$4.5 million in new funding to support close to 100 forest conservation projects and fundamental forest research. More information is available at: <http://www.panda.org/>

SFM relevant data and information services provided by WWF

25.1 WWF European Forest Scorecards

WWF European Forest Scorecards 2000 provide comparative information on the way European nations treat forests. The scorecard is a simple evaluation where the current situation on a range of issues, like environment, social and cultural aspect, production, multiple use, consumption and pollution, is compared to a set of common goals. These goals are derived from the agreements of the United Nations Conference on Environment and Development (UNCED) including the forest principles, and the Resolutions of the MCPFE. WWF European Forest Scorecards 2000 include, for the first time, countries from Eastern Europe and the Baltic States and are available at:

http://www.panda.org/forests4life/pubs/Report_Jan2000.doc

26 OTHER SFM RELEVANT DATA AND INFORMATION SERVICES

26.1 COST E27 - Protected Forest Areas in Europe (PROFOR)

COST is an intergovernmental framework for scientific and technical co-operation allowing the co-ordination of national programmes on European level. COST Action E27 PROFOR was established in 2001 (until 2006) and signed by 21 European countries. Working Group III "A clearing house mechanism for European Protected Forest Areas", co-ordinated by EFI, will create a communication platform for information on bibliography and terminological terms and works towards the standardisation of data collection. More information is available at: <http://www.efi.fi/projects/coste27/Introduction.html#five> or <http://cost.cordis.lu/src/home.cfm>

26.2 Dendrome

Dendrome is a collection of forest tree genome databases and other forest genetic information resources for the international forest genetics community. Dendrome is part of a larger collaborative effort to construct genome databases for major crop and forest species. The primary genome database of Dendrome is called TreeGenes. It includes genetic map, DNA sequence, germplasm, and other related information for a large number of forest tree species. The Dendrome server also contains the IUFRO World Directory of Forest Geneticists and Tree Breeders. There are currently about 2700 entries in the directory. More information is available at: <http://dendrome.ucdavis.edu/index.html>

26.3 Global Biodiversity Information Facility (GBIF)

GBIF is an international co-operative scientific initiative to make the world's biodiversity information freely available through the Internet. Initially it is focusing on specimen level and ultimately will link to molecular, genetic and ecosystem level data. The purpose of GBIF is to design, implement, co-ordinate and promote the compilation, linking, standardisation, digitisation and global dissemination of the world's biodiversity data, within an appropriate framework for property rights and due attribution. GBIF is designed to work in close co-operation with established programmes and organisations that compile, maintain and use biological information resources. The participants will establish and support a 'distributed' information system that will enable users to access and utilise vast quantities of new and existing information and generate new knowledge. More information is available at: <http://www.gbif.org/>

26.4 Monitoring of Non-Timber Forest Resources (MNTFR)

Forest resource assessments on the national level are carried out in all EU member states and Switzerland and provide mainly information on the productive function of forests.

Information on non-wood goods and services (e.g. soil protection, avalanche protection, recreation, habitat functions) is to a large extent missing. Therefore the EC-Project FAIR CT98 4045 'Scale Dependent Monitoring of Non-Timber Forest Resources Based on Indicators Assessed in Various Data Sources' has four main objectives:

- Development of methods that increase the degree of detail of the provided information on non-wood goods and services in relation to their resolution scale,
- Harmonising the information at European level,
- Analysis of the cost-efficiency of the proposed alternative methods,
- Validation of the proposed methods in selected test sites.

More information is available at: <http://www.forst.tu-dresden.de/Informatik/mntfr/index.html>

26.5 Networking of Long-term Integrated Monitoring in Terrestrial Systems (NoLIMITS)

NoLIMITS started as a two year EC preparatory action funded by the European Network for Research in Global Change (ENRICH). The aim was to develop a strategy for the creation of a pan-European long-term integrated monitoring site network. The network, based on existing sites, will serve the data and information needs of European-scale users for the detection and interpretation of global environmental change in terrestrial systems. To succeed, the network must deliver policy relevant information that either cannot be provided by alternative mechanisms or is better and more cost effective than information available through existing channels. More information is available at:

<http://nolimits.nmw.ac.uk/details.html>

Abbreviations

ACP	African, Caribbean and Pacific
AFWC	African Forestry and Wildlife Commission
AGPP	Agriculture Plant Protection Service
ALI	Agricultural Labour Input Statistics
ASCI	Areas of Special Conservation Interest
ATSR	Advanced Along Track Scanning Radiometer
AVHRR	Advanced Very High Resolution Radiometer
CBD	UN Convention on Biological Diversity
CCD	UN Convention on Combating Desertification and Drought
CCE	Co-ordination Center for Effects
CDDA	Common Database on Designated Areas
CDS	Catalogue of Data Sources
CEC	European Commission (Commission of the European Community)
CEDAR	Central European Environmental Data Request Facility
CEE	Central and Eastern Europe
cf.	confer
CIFOR	Center for International Forestry Research
CIS	Certification Information Service
CIS	Commonwealth of Independent States
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
CLC	Corine Land Cover
CLRTAP	UNECE Convention on Long Range Transboundary Air Pollution
CoE	Council of Europe
COMEXT	Database for statistics on the EU's external trade and trade between member states
CORINE	COoRdination d'INformation Environmental (Information System on the Co-ordination of Information on the Environment)
COST	European Co-operation in the Field of Scientific and Technical Research
CSD	Commission on Sustainable Development
DFDE	Database on Forest Disturbances in Europe
DG	Directorate General
EAA	Economic Accounts for Agriculture
EAAF	Economic Accounts for Agriculture and Forestry
EAF	Economic Accounts for Forestry
EAC	European Astronautical Centre
EC	European Community
ECB	European Central Bank
EC CHM	European Community Clearinghouse Mechanism
ECOSOC	Economic and Social Council of the UN
EDS	Environmental Data System
EEA	European Environment Agency
EEFR	EFISCEN European Forest Resource Database
EFC	European Forestry Commission
EFI	European Forest Institute
EFICS	European Forestry Information and Communication System
EFIDAS	European Forestry Information and Data Analysis System
EFIS	European Forest Information System
EFISCEN	European Forest Information Scenario Model
EFSOS	European Forest Sector Outlook Studies
EFTA	European Free Trade Association
EIONET	European Environment Information and Observation Network

ELC	IUCN Environmental Law Centre
ELIS	Environmental Law Information System
EMEP	Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
EMU	European Monetary Union
ENRICH	European Network for Research in Global Change
ENRIN	Environment and Natural Resources Information Networks
ERS	Earth Observation Satellite
ESA	European Space Agency
ESB	European Soil Bureau
ESOC	European Space Operation Centre
ESRIN	European Space Research Institute
ESS	European Statistical System
ESTEC	European Space Research and Technology Centre
ETC/NPB	European Topic Centre on Nature Protection and Biodiversity
ETTS	European Timber Trends Study
EU	European Union
EUFORGEN	European Forest Genetic Resources Programme
EUNIS	European Nature Information System
Eurostat	European Statistical Office
EUSIS	European Soil Information System
FAO	Food and Agriculture Organisation of the United Nations
FCCC	UN Framework Convention on Climate Change
FIMCI	Forest Intensive Monitoring Co-ordinating Institute
FINE	Forest Information Services Network for Europe
FIRS	Forest Information from Remote Sensing
FORIS	Forestry Information System
fPAR	fraction of Photosynthetically Active Radiation absorbed by vegetation
FRA	Forest Resource Assessment
FRRN	Forest Reserves Research Network Databank
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GEIS	Global Environmental Information Systems
GEMET	General Multilingual Environmental Thesaurus
GEO	Global Environment Outlook
GFIS	Global Forest Information Service
GFMC	Global Fire Monitoring Center
GFSM	Global Fibre Supply Model
GFW	Global Forest Watch
GIEWS	Global Information and Early Warning System on Food and Agriculture
GIS	Geographic Information Systems
GMES	Global Monitoring for Environment and Security Project
GPPIS	Global Plant and Pest Information System
GRID	Global Resource Information Database
GTOS	Global Terrestrial Observation System
GVM	Global Vegetation Monitoring
IBRD	International Bank for Reconstruction and Development
ICEL	International Council of Environmental Law
ICP	International Co-operative Programme
ICSID	International Centre for Settlement of Investment Disputes
IDA	International Development Association
IEA	International Energy Agency

IEEAF	European Framework for Integrated Environmental and Economic Accounting for Forests
IFC	International Finance Corporation
IFFN	International Forest Fire News
ILO	International Labour Organization
IMF	International Monetary Fund
IPGRI	International Plant Genetic Resources Institute
ISEP	International Society for Environmental Protection
ITTO	International Tropical Timber Organization
IUCN	The World Conservation Union
IUFRO	International Union of Forest Research Organizations
JRC	Joint Research Centre of the European Commission
KILMnet	Key Indicators of the Labour Market
LAI	Leaf Area Index
LM	Land Management
MAB	Man And the Biosphere
MCPFE	Ministerial Conference on the Protection of Forests in Europe
MIGA	Multilateral Investment Guarantee Agency
MIS	Market Information Service
NATLAN	Nature/Land Cover Information Package
NEFC	Near East Forestry Commission
NFP	National Focal Point
NIS	Newly Independent States
NOAA-AVHRR	National Oceanic and Atmospheric Administration polar orbiting satellites carrying an Advanced Very High Resolution Radiometer
NSIs	National Statistical Institutes
NUTS	Nomenclature of territorial units for statistics (nomenclature des unites territoriales statistiques)
NWFP	Non-wood forest products
OECD	Organisation for Economic Co-operation and Development
PCC	Programme Co-ordinating Centre
pSCIs	proposed Sites of Community Interest
REFORGEN	FAO World-wide Information System on Forest Genetic Resources
REGIO	Eurostat database for regional statistics
RIVM	Dutch National Institute of Public Health and the Environment
SACs	Special Areas of Conservation
SCIs	Sites of Community Interest
SERIS	State of the Environment Reports Information System
SoE	State of the Environment
SPAs	Special Protection Areas
SPOT	Système Pour l'Observation de la Terre
SRV	Sustainability Reference Value
STAR	Sustainability Targets and Reference Database
TBFRA	Temperate and Boreal Forest Resources Assessment
TEMS	Terrestrial Ecosystems Monitoring Sites
TESEO	Treaty Enforcement Service Using Earth Observation
TFU	Tropical Forest Update
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme

UNEP-WCMC	UNEP World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSD	United Nations Statistical Division
WHO	World Health Organisation
WMO	World Meteorological Organization
WRI	World Resources Institute
WWF	World Wide Fund for Nature