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COUNTRY PROFILE



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INTRODUCTION - 2002 COUNTRY PROFILES SERIES

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

NOTE TO READERS

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

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LIST OF COMMONLY USED ACRONYMS

ACS	Association of Caribbean States
AMCEN	Africa Ministerial Conference on the Environment
AMU	Arab Maghreb Union
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CARICOM	The Caribbean Community and Common Market
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
CSD	Commission on Sustainable Development of the United Nations
DESA	Department for Economic and Social Affairs
ECA	Economic Commission for Africa
ECCAS	Economic Community for Central African States
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	Foundation for International Development Assistance
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAEA	International Atomic Energy Agency
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development

IEEA	Integrated Environmental and Economic Accounting
IFAD	International Fund for Agricultural Development
IFCS	Intergovernmental Forum on Chemical Safety
IGADD	Intergovernmental Authority on Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
LA21	Local Agenda 21
LDCs	Least Developed Countries
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAs	Multilateral Environmental Agreements
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NSDS	National Sustainable Development Strategies
OAS	Organization of American States
OAU	Organization for African Unity
ODA	Official Development Assistance/Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Papers
SACEP	South Asian Cooperative Environment Programme
SADC	Southern African Development Community
SARD	Sustainable Agriculture and Rural Development
SIDS	Small Island Developing States
SPREP	South Pacific Regional Environment Programme
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNU	United Nations University
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund
WWW	World Weather Watch (WMO)

**CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE
DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC
POLICIES**

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES - TRADE

Decision-Making: The Ministries of: Foreign Affairs; and Trade and Industry are the main responsible bodies for questions related to the framework of international trade. The Ministry of Foreign Affairs and Norwegian Agency for Development Cooperation (NORAD) have particular responsibilities for establishing and maintaining sustainable trade with developing countries. A national reference group consisting of members from a range of ministries, trade and industry, trade unions and environment and development organizations were established in 1992 to consider trade- and environment related questions. The group has been actively involved in the national preparations prior to the Seattle World Trade Organization (WTO) Ministerial Conference. It is essential that the multilateral trading system prepares an agenda for forthcoming WTO negotiations that is broad enough to balance the interests of all members and that responds to the challenges of a rapidly changing international trading environment. Norway attaches particular significance to the integration of environmental concerns into the trading system so as to promote the objective of sustainable development. It is of fundamental importance that environmental concerns are taken into account in all fields subject to negotiations. It is necessary to recognize that the WTO members are at different levels of development and that special attention should be given to the needs of developing countries, particularly the least-developed countries (LDCs).

Decisions regarding which goods and services to export and import and how to specify production methods, contents and performance are taken by the entities that carry out the transaction – usually private companies and individuals. To facilitate quality control, certification systems such as ISO14000 and EMAS may be used. Usually, larger purchasing contracts are put out to tender, and for the public sector this is mandatory. As a result, foreign sources are awarded the contracts where they prove to be less expensive at the required level of quality and performance.

Programmes and Projects: See under **Decision-Making**.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: As with all commercial transactions, the costs are carried as agreed between the parties. The amount of government support available to facilitate trade with developing countries is small compared with the trade transactions themselves, but serve to focus the attention of Norwegian companies as well as to facilitate the task of businesses based in developing countries.

Cooperation: Norway has given high priority to the issue of trade and environment, and participates actively in the work of the Commission for Sustainable Development (CSD), the WTO, the United Nations Environment Programme (UNEP), the United Nations Conference on Trade and Development (UNCTAD), and the Organization for Economic Cooperation and Development (OECD).

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CHAPTER 3: COMBATING POVERTY

Decision-Making: Absolute poverty is not an issue of major concern in Norway, nor is there any national definition of “poverty” or related legislation. Relative poverty however is an increasingly important issue, since disadvantaged families are consistently overrepresented among the ill, underachievers in the educational system and in the crime statistics.

Programmes and Projects: Projects and programmes to combat world poverty are mainly financed through budget allocations to the multilateral development assistance system, to partner countries in line with their own poverty strategies and through Non-Governmental Organizations (NGOs).

Status: All inhabitants of Norway are guaranteed an adequate standard of living by law. Absolute poverty does not exist. All Norwegians have access to primary health care, clean water and sanitation, and primary education. Primary, secondary education, universities and hospital services are without user fees and paid for through general taxation. There is a minimal user fee for most primary health services.

Capacity-Building, Education, Training and Awareness-Raising: Training courses for the fight against poverty in developing countries are prepared and rendered by the Foreign Service Training Centre. Information on Norway’s contribution to world poverty reduction is widely publicized over the Internet as well as in the traditional press, in special reports and publications and in seminars and addresses and speeches in a wide range of fora. Active relations with the private sector and NGOs are maintained i.e. through fora especially established for this purpose.

Information: The Research Council of Norway (Division of Environment and Development) promotes environmental research, development research and research in the interface between environmental and social conditions.

Research and Technologies: The Research Council is presently planning a new effort to promote research in the field of development and North-South issues. Poverty reduction will most probably become a high-priority area of research. The planning of this new initiative is taking place in close contact with the Ministry of Foreign Affairs and its work on a new strategic plan to strengthen human resource development and research related to Norway’s relations with developing countries.

Financing: In 2000 Norwegian development assistance was 0.80 per cent of GNP. The government aims to increase this to 1 per cent within 2005.

Cooperation: In light of the complexity and vastness of the poverty problem Norway emphasizes i.e. the need for adequate and efficiently use of development assistance, for harmonized and well coordinated donor approaches and for stronger partner country leadership of development processes. Norway also advocates greater policy coherence across industrialized countries’ policies towards poor developing countries and has endorsed the Millennium/International Development Goals as well as the OECD/DAC “Guidelines for Poverty Reduction.” In 2001 a Norwegian action plan for poverty reduction has been prepared based on international Cooperation in this field.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: While investors and private industry make most of the decisions affecting production, both industry and the public sector make decisions on procurement and private individuals decide on the use of goods and services. Sustainable production follows from the discussion in other chapters; hence this chapter will focus on consumption. The basic responsibility for reacting adequately to the challenges of sustainable consumption lies with the managers in the private and public sectors as well as with each individual. The Government action mentioned below aims at providing tools for making better decisions.

The Ministry of Environment and the Ministry of Children and Family Affairs are the central authorities focusing on consumption issues. The Ministry of Finance has the primary responsibility for economic policy and through the design of taxes and charges consumption is shaped. Activities in many areas of sustainable development implementation contribute to changes in consumption patterns, for example, voluntary agreements with industry on the responsibility for waste generated by their products, and the CO₂ tax and measures for energy efficiency. In 1995, the Ministry of Environment established the Norwegian Center for Sustainable Production and Consumption (GRIP). GRIP collaborates with organizations in specific business areas to develop, field test, and promote methods that increase eco-effectiveness (value added per unit environmental load). GRIP functions like a catalyst for more efficient use of energy and other resources: GRIP's work reflects the views of a wide range of organizations, its board includes representatives from the Norwegian Confederation of Industry, the Norwegian Confederation of Trade Unions, the Norwegian Confederation of Trade and Service Businesses, the Norwegian Association of Local Authorities, the Norwegian Society for the Conservation of Nature, and the State Pollution Control Authority.

Programmes and Projects: The Norwegian Government has initiated a programme for greener Government procurement. The proposal covers environmental criteria for choice of products and suggests how these can be incorporated into procurement practices. This work has been followed up with a guidebook for Procurement officers. A programme on sustainable local communities was established in 1995 in order to develop ideas and advice on how families, local authorities, industry and NGOs can initiate change in consumption and production patterns themselves. There is a Nordic eco-labeling scheme with the objective of providing consumers with guidance to help them choose products and services that are less harmful to the environment. This encourages product development, which takes environmental factors as well as other quality considerations into account. Criteria for about 40 product groups have been developed so far. The Norwegian Foundation administers the scheme for Environmental Labeling, with subsidies from the Ministry of Children and Family Affairs. Seventeen Norwegian NGOs have established a network called "The Environmental Home Guard" (EHG). The aim is to motivate and educate people to make environmentally friendly choices, to reduce the use of non-renewable natural resources, reduce waste production, reduce energy consumption, and eliminate the use of harmful substances. The strategy is to approach individuals and groups, and assist them in making new choices individually and collectively by providing information and other tools for change. There are currently eight regional service bureaus, supported by a central secretariat. Approximately 70,000 individuals are "enlisted" in the EHG, and a large number of schools, public and private institutions, companies, municipalities, and housing cooperatives are involved in EHG programmes. In the autumn 1996, the project "Green families" was launched. After a couple of months, more than 100 municipalities took initiatives to start networks of "green families" among their citizens. Other NGOs, like the "Future in our Hands," have carried out research projects on the possibilities of changing lifestyles and consumption patterns.

Status: As documented by the EU's Environmental Agency (EEA), production side measures to curb pollution and other environmental degradation has not been sufficient to keep up with the growth in volume of consumption. As in the rest of Europe, fields such as transport, energy use and waste handling needs action by the end user in order to achieve sustainability. The Government Institute has performed a survey of Norwegian youth attitudes to consumption for Consumption Research (SIFO) and this has been compared with other countries in a study

published by UNEP. Detailed data on current purchasing behaviour in Norwegian households as well as an extensive time series is available from Statistics Norway (www.ssb.no).

The status of the Greening of Government programme has recently been evaluated by the Government Consulting Agency (Statskonsult). They conclude that the programme has unclear aims and has not yet led to large improvements in public procurement and management.

Capacity- Building, Education, Training and Awareness-Raising: The general education system gives a basis for understanding the need for more sustainable consumption, and trains a sufficient number of experts, but does not focus explicitly on this. The aim of the NGO-network “The Environmental Home Guard” is to motivate and educate people to make environmentally friendly choices, to reduce the use of non-renewable natural resources, reduce waste production, reduce energy consumption, and eliminate the use of harmful substances. The objective of the Nordic eco-labeling scheme is to provide consumers with guidance to help them choose products and services that are less harmful to the environment. Examples of manuals that GRIP has published are “GRIP Build” on how to build eco-efficient commercial buildings; “GRIP Office” on how to increase eco-effectiveness in the office operation; and “GRIP Bicycle tourism” on how to develop bicycle based tourism packages. GRIP also has projects aimed at increasing market shares for eco-efficient products (for example, Eco-profile for Buildings) and companies (for example, a prize for good environmental reporting). “Naturlig Vis - Naturally Wise” is an environmental training scheme, which aims at enabling employees to understand their company’s environmental policy and make strategic and tactical decisions that support this policy. GRIP and the Norwegian School of Management have sent 1,500 businesses a questionnaire on attitudes and response to environmental threats in order to measure the business community’s reaction to Agenda 21. The analysis of the approximately 500 responses was presented at a major Conference on Sustainable Business, GRIP Forum 1996.

Information: A representative sample of household spending has been maintained over a long time by Statistics Norway in order to calculate the cost of living. The Government Institute collects information on consumption behaviour for Consumer Research (SIFO) as well as by commercial behaviour research institutes. All publicly available information on consumption patterns in Norway is given at www.ssb.no. Information on how to achieve better energy efficiency is given by public utilities as well as by regional energy saving centres. The GRIP foundation, the Environmental Home Guard and the Local A21 give information on other aspects of sustainable consumption. The Programme for Research and Documentation for a Sustainable Society was established to conduct strategic research and documentation for the realization of a sustainable society. The Programme for Research and Documentation for a Sustainable Society (ProSuS) was established to conduct strategic research and documentation for the realization of a sustainable society at the local, national and global levels, to monitor Norway’s development with respect to the Rio Declaration, Agenda 21 and the guidelines of the United Nations Commission on Sustainable Development, to disseminate information on research directed toward sustainable development and on global ethics.

Research and Technologies: A programme for environmental technology was established in 1990. In addition, the European Union’s Eco-Management and Audit Scheme was implemented by Norway in 1995. As of 1998, the Norwegian Pollution Control Agency will grant economic support to the development of sustainable production and consumption within industry. The main purpose of the Research Programme on Sustainable Production and Consumption (1996-2001) is to contribute to an increased insight into the relationship between production and consumption patterns, distribution and environment - nationally and globally as well as across generations. The programme has clearly applied components with the intention of supplying knowledge as a basis for political actions.

Financing: Most changes to more sustainable consumption are self financing due to reduced costs of energy and other resources. For some resources, such as non sustainable timber, or for imports where the polluter pays principle is not fully applied, the full costs are not reflected in prices. In such cases the consumer or the procuring agency will have to cover the costs and sustainable consumption may be the more expensive option. As of 1998,

the Norwegian Pollution Control Agency will grant economic support to the development of sustainable production and consumption within industry. The main objective of these grants is to encourage the use and development of ESTs. Green taxes ensure that consumers take the environmental costs of consumption of energy, materials, and natural resources into account. Norway has introduced several green taxes, such as a CO2 tax and a sulfur tax. A tax is levied on packaging and on car wrecks to strengthen collection and recycling systems. In December 1994, the Government formed a committee to consider how fiscal policy could act to the mutual benefit of the environment and increased employment. The committee's recommendations were presented in the Norwegian Official Report 1996:9. The GRIP Center received about US\$ 1.5 million in 1996 from the Ministry of Environment. The Nordic product labeling scheme received US\$ 1.1 million in 1995 from the Ministry of Environment and the Ministry of Children and Family Affairs. The Ministry of Industry and Energy, and the Ministry of Environment have spent US\$ 40.7 million per year on the programme for environmental technology. The Government provides core funding (about 75% of the total budget) for the EHG. In 1996, this amounted to 5.4 million NOK.

Cooperation: Norway has hosted a series of international meetings on sustainable consumption. Reports from these are available on www.miljo.no.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

Decision-Making: The Norwegian Water Resources and Energy Directorate manage the programme for energy conservation. Local energy agencies are responsible for running energy conservation programmes. The Ministry of Petroleum and Energy emphasizes projects promoting energy saving and renewable energy sources. In 2002 a national Fund for investments in renewable energy and rational use of energy will be established. The Fund will be managed by a national agency called New Renewable Energy and Environmentally Friendly Natural Gas Solutions (ENOVA). The Ministry of Petroleum and Energy will be responsible for the Fund and for ENOVA. The Government gives high national priority to the use of more energy efficient and environmentally safe technologies in industry, transport, energy production, and to Environmental Impact Assessments. The Government also continues to maintain and strengthen the system of grants to new renewable energy sources, such as bio-energy.

Programmes and Projects: In 1991, Norway introduced a CO₂ tax, which at present is applied to sources of 60% of Norwegian CO₂ emissions, but covers almost all energy related emissions. Exemptions from the CO₂ tax are intended to preserve international competitiveness related to, for example, mineral oils used in air transport. In 1995, the Government submitted a report to parliament on the Norwegian policy to mitigate climate change and reduce emissions of nitrogen oxides (NO_x). This White Paper introduces measures that enhance the national climate change policy programme. These include measures aimed at improving energy efficiency, promoting renewable energy sources, introducing voluntary agreements in industrial sectors not currently subject to the CO₂ tax, setting requirements for methane (CH₄) recovery from landfills, and promoting activities implemented jointly in the pilot phase (as decided by the Conference of the Parties of the UNFCCC). In addition, a strategy has been developed to give priority to ESTs and programmes that may contribute to reducing the greenhouse effect. There are several local programmes in action.

Status: Green taxes ensure that consumers take the environmental costs of consumption of energy, materials, and natural resources into account. Norway has introduced several green taxes, such as a CO₂ tax and a sulfur tax. Within the special programme for energy conservation and indoor climate (MEIS) it is documented that schools have saved up to 20 % of their energy consumption and made a contribution to improving the indoor climate. Databases for energy saving programmes and indoor climate programmes are established. Ninety nine percent of the electricity generated in Norway is hydro-generated. Thus water plays a crucial role in the country's energy supply, with an ensuing potential for conflict between industry interests and conservation considerations.

Capacity-Building, Education, Training and Awareness-Raising: In 1995, the Ministry of Environment established the Norwegian Center for Sustainable Production and Consumption (GRIP). GRIP collaborates with organizations in specific business areas to develop, field test, and promote methods that increase eco-effectiveness (value added per unit environmental load). GRIP functions like a catalyst for more efficient use of energy and other resources. Seventeen Norwegian NGOs have established a network called "The Environmental Home Guard." The aim is to motivate and educate people to make environmentally friendly choices, to reduce the use of non-renewable natural resources, reduce waste production, reduce energy consumption, and eliminate the use of harmful substances. The strategy is to approach individuals and groups, and assist them in making new choices individually and collectively by providing information and other tools for change.

Information: No information available.

Research and Technologies: The programme "Technology for Reduction of Greenhouse Emissions" (KLIMATEK) began early 1997. The Government and the industry support development and implementation of technology, especially in the energy and industrial production sectors. In 1995, the Ministry of Environment established the Norwegian Center for Sustainable Production and Consumption (GRIP). GRIP collaborates with organizations in specific business areas to develop, field test, and promote methods that increase eco-effectiveness

(value added per unit environmental load). GRIP functions like a catalyst for more efficient use of energy and other resources.

Financing: KLIMATEK is co-financed by the Ministry of Environment, the Ministry of Trade and Industry, and the Ministry of Petroleum and Energy. The Ministry of Petroleum and Energy finances the programme for energy conservation.

Cooperation: No information available.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: The users and managers of transport have the primary responsibility for decisions to make transport more sustainable. The users may choose less polluting and damaging modes of transport while managers can ensure that intermodal and integrated planning and payment systems give better results. Local and national Government influence transport patterns through fuel and road pricing policies as well as through the level of support for investment and operation of transport systems. Under the Planning and Building Act, the Government can lay down national policy guidelines, which shall apply to the planning processes at local and regional levels across the country. National Policy Guidelines for Coordinated Land-use and Transport Planning include instructions about which considerations and solutions should receive priority to achieve better coordination of land use, the pattern of development, and the resulting need for transport. Environmental impact assessments (EIA) should be carried out for major projects.

Land use planning and management have been developed and are discussed in a White Paper on Regional Planning and Land Use Policy presented in March 1997. This White Paper deals, among other topics, with planning in urban areas and gives guidelines for reducing transport through spatial planning. A temporary ban on the construction of shopping centres outside central areas of cities and towns was laid down by Royal Decree of 8 January 1999. The intention of this national policy provision is to strengthen existing city and town centres, to avoid developments, which lead to unnecessary urban sprawl, and to hinder increased dependency on cars and poorer accessibility for those who do not own a car.

Programmes and Projects: A programme for the development of environmental cities initiated by the central authorities in cooperation with five Norwegian cities was finished in September 2000. The main idea was to develop a holistic approach through which measures to alleviate many problems connected with living conditions and the environment can be integrated. Coordinated land use and transport planning, with emphasis on environmentally sound transport, was one of six priority areas. One recommendation is to reestablish public transport as the backbone of a sustainable city. Furthermore, the Ministry of Environment has initiated a project in which the experiences of a number of municipalities with regard to the use of EIA principles in land use planning are collected and analyzed. The Ministry, in cooperation with other ministries, is also encouraging the application of EIA principles to sectoral programmes including transport. See also under **Status**, and **Research and Technologies**.

Status: In 1991, Norway introduced a CO₂ tax, which at present is applied to sources of 60% of Norwegian CO₂ emissions, but covers almost all energy related emissions. Exemptions from the CO₂-tax are intended to preserve international competitiveness related to mineral oils used in air transport, ships engaged in foreign trade, the North Sea supply fleet and the national fishing fleet. Road traffic in cities still causes some of the most serious environmental problems. Fuel and vehicle taxes serve to increase Government revenue and limit car use. The present rate for petrol (gasoline) is about 1,10 US\$/litre, annual road tax is about 250US\$ and the tax rate on new cars is about 100%. The major cities of Oslo, Bergen and Trondheim all have a road payment scheme where all cars that wish to pass into the main part of the city pay through an electronic system as they drive past the toll points at the ordinary road speed. The charge for entering Oslo is currently about 1,50US\$. The income is used to improve the road system, mainly by making road tunnels to get rid of surface traffic but a substantial amount goes towards investments in public transport.

Capacity-Building, Education, Training and Awareness-Raising: The educational system gives adequate basic knowledge and trains sufficient experts. Major information campaigns are aimed at transport users.

Information: Data on transport is available both on www.ssb.no and on www.miljo.no.

Research and Technologies: the Norwegian Institute of Transport Economics Research (TØI) carries out substantial research on transport user behaviour and economics. Technological projects are carried out in the design of ships as well as in the use of low emission fuels for ferries. Norway also produces the electric car that one of the major global car makers is marketing.

Financing: Investment is mostly carried by the entity concerned, but national and local governments as well as transfers from road pricing contribute to targeted investments particularly in rail and light rail services. Both publicly subsidized bus lines and air connections are let for tender. User charges cover the costs of air traffic management and building and maintenance of airports.

Cooperation: In improving the environmental performance of shipping, the private sector cooperates with the association of tanker owners. On the state level, Norway cooperates with the IMO. Norway implements all EU directives on emissions from mobile sources and cooperates through the UN-ECE to obtain similar strong rules throughout the entire continent. Norway operates some joint train services with our neighbour Sweden. The Scandinavian Airlines System (SAS) is jointly owned by some private investors and the governments of Denmark, Norway and Sweden, but is operated as a commercial entity entirely separate from the state interests.

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CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: The Ministries of: Health and Social Affairs; and Environment; and the National Institute of Public Health are the main agencies responsible for promoting and protecting public health. Norwegian policies and measures in the area of human health are based on the principles and tenets of the strategy “Health for all” by the year 2000, adopted by the Member States of the World Health Organization (WHO). In March 1988, the Government of Norway submitted to the Parliament a White Paper on national health policy towards the year 2000, which outlined the strategy for health and identified priority areas, including health promotion, prevention of diseases, and community health care. Subsequently, a number of policy documents concerning health and health services have been adopted with a view to translating the strategy into action. In April 1993, the Government submitted a White Paper identifying the challenges of health promotion and prevention of diseases to Parliament. Norway signed the WHO Ministerial Statement for Promoting Health in Mexico in June 2000. As a follow up to the adherence to this statement, the Norwegian Government will present a national action plan 2000 – 2010 for public health promotion by the end of 2001. The importance of the following areas was highlighted in particular: psycho-social problems; musculoskeletal disorders; accidents and injuries; and asthma, allergy, and indoor-environment related problems. Action plans have been established for each of these priority areas. These plans have two strategic features in common: they focus on the local community and they involve cooperation across professional and sectoral divisions. Achieving the national goal in these areas will also implies inter ministerial cooperation. The main objective of Norwegian assistance to the health sector is to improve primary health services, and it is targeted primarily towards women, mothers, and children. Norway stresses the importance of reproductive health as part of an integral approach. Health promotion and causes of disease and primary risk factors to which the Government continues to give priority include substance abuse (ant), indoor climate and food and nutrition.

Programmes and Projects: See under **Cooperation**.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: See under **Cooperation**.

Cooperation: A substantial part of Norwegian support to protect and promote public health is provided as multilateral aid directed through UN agencies and international NGOs. Norway is one of the major donors to the United Nations Children’s Fund (UNICEF), WHO, the United Nations Population Fund (UNFPA), and the International Planned Parenthood Federation (IPPF). Norway supports efforts to strengthen sustainability of primary health care by promoting greater local participation, governance, and funding of health services. Norway also emphasizes the responsibility of cooperating governments to secure equitable access to health services for all. Support to HIV-AIDS related services have been given particular attention in Norwegian development assistance to the health sector. To enhance this support, a special budget line for HIV-AIDS projects has been included in the development cooperation budget. Bilateral support to health programmes are provided to a number of Norway’s main partner countries, for example, Tanzania, Sri Lanka, Botswana, Bangladesh, Mozambique, and Zimbabwe. Bilateral assistance has also been provided for three specific programmes for control of communicable diseases: tuberculosis in Mozambique and Madagascar, leprosy in India, and immunization programmes in India and Nepal. Approximately 20% of the assistance given to Norwegian and local NGOs is also for primary health programmes.

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: Since 1995, the environmental impacts of all new legislation and policy decisions must be assessed taking into consideration sustainable development aspects. According to a revised administrative order of 1994, not only the administrative and economic effects, but also the environmental effects of all proposals submitted to the King in Council, the Cabinet, and the ministry responsible for the proposal must assess Parliament. The Ministry of the Environment must be consulted in these preparations. Furthermore, the Ministry of the Environment has initiated a project in which the experience of a number of municipalities, in using EIA principles in land-use planning, is being collected and analyzed. The Ministry, in cooperation with other ministries, is also encouraging the application of EIA principles to sector programmes, for example for transport, energy, and agriculture.

Provisions on environmental impact assessment (EIA) for certain projects were introduced into the Planning and Building Act in 1990, and regulations on EIA were also brought in. The Act and regulation were revised in 1996 to meet the requirements of European Community (EC) Directive 85/337, and were updated again in 1999. The EIA process is recognized as an important tool for integrating environmental considerations into decision-making. The geographically limited focus of national EIA legislation has resulted in a growing interest in EIA for projects that are likely to have a transboundary impact. Provisions on EIA in a transboundary context were incorporated into the Norwegian regulations when they were revised in 1999. The new EU directive on Strategic Environmental Assessment will be integrated into Norwegian law. This will not only allow alternatives to single projects to be considered but will require entire programmes of action to be analyzed. The most important integrated financial policy planning document presented by the Norwegian Government to Parliament at regular intervals is “The long-term Programme”, which is presented every fourth year; the National Budget presented every year; and the State Budget which is also presented every year.

Programmes and Projects: A number of interdepartmental plans and working groups have been established to review and coordinate important areas of work, for example, the Interdepartmental Biodiversity Plan and the Interdepartmental Working Group on Climate and Acid Rain. A research project has been established to look into current practice in the transport sector and propose improvements.

Status: Since 1990, about 500 projects have been subject to an EIA process. The mandate for the Ad hoc Group on EIA under the Nordic Council of Ministers ended in 1998. In order to continue the coordinated Nordic efforts on research and development on environmental impact assessment, strategic environmental assessment and regional development in the Nordic context, the Nordic Network was established in 1999. The Nordic Centre for Spatial Development (Nordregio) administrates the Network. Interest among scientists and educational institutions in both land use planning and EIA, as well as the integration of these two functions, has increased.

Capacity-Building, Education, Training and Awareness-Raising: Assessment and monitoring of capacity-building is ensured through the following: Tools and methodologies to assess and monitor—Project reviews, assessments regarding level of achievements and quality of work/professional output, tests, examinations, assessment reliability and sustainability of educational facilities and institutions, etc; and, Learning from lessons coming out of monitoring process—By using external and internal consultants for reviews and evaluations with special focus on the subject, production of reports and special written material, such as manuals etc., development of in-house training courses custom-made to selected categories of personnel.

Information: The Government stated that it would continue to develop a result monitoring system for the state of the environment, environmental pressures and environmental measures that have been implemented. This would provide the necessary basis for steering towards a sustainable path of development, for instance by making it possible to observe the aggregate environmental impact of activity in various sectors. The report on an environmental policy for sustainable development also specified indicators of sustainable development for both the

private and the public sectors; in order to provide a basis for a system of environmental accounting related to the development of sectoral action plans. The report identified the responsibilities of various parties who contribute significantly to undesirable environmental changes.

Research and Technologies: A national EIA Research Center and a Network Center on Planning. Research has been established at the Norwegian Institute of Urban and Regional Research during the last few years. See also under **Programmes and Projects**.

Financing: The full costs are carried by the relevant entities. Also, see under **Decision-Making**.

Cooperation: Norway participates in the working party of the Development Assistance Committee, Organization for Economic Cooperation and Development on Development Assistance and Environment (DAC/ OECD), which was established in 1989. The party is showing leadership in shaping policies and strategic focus on the follow-up of the United Nations Conference on Environment and Development (UNCED) and Agenda 21.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: The national institution responsible for atmospheric protection is the Ministry of Environment, which is a member of the National Committee for Sustainable Development and the National Committee for International Environmental Questions. An Inter-ministerial Steering Committee On Climate Change and Acid Rain was established in 1991 to coordinate Norway's policies on these issues at the national and international level, and to ensure a cross-sectoral and cost-effective approach in the identification and implementation of these policies. National legislation to protect the atmosphere has generally been reviewed and revised in light of Agenda 21. In 1995, the Government submitted a report to parliament on the Norwegian policy to mitigate climate change and reduce emissions of nitrogen oxides (NO_x). This White Paper introduces measures, which enhance the national climate change policy programme. These include measures aimed at improving energy efficiency, promoting renewable energy sources, introducing voluntary agreements in industrial sectors not currently subject to the CO₂ tax, setting requirements for methane (CH₄) recovery from landfills, and promoting activities implemented jointly in the pilot phase (as decided by the Conference of the Parties of the UNFCCC). The White Paper reiterates the important principle in Norway's climate policy that all policies and measures at both national and international levels should be cost-effective. Four major Norwegian environmental NGOs (Norwegian Society for Conservation of Nature, Nature and Youth, Greenpeace Norway, and The Future In Our Hands) have formed an alliance on climate change issues.

Programmes and Projects: The programme "Technology for Reduction of Greenhouse Emissions" (KLIMATEK) began early 1997. KLIMATEK is co-financed by the Ministry of Environment, the Ministry of Trade and Industry, and the Ministry of Petroleum and Energy. The Ministry of Petroleum and Energy emphasizes projects promoting energy saving and renewable energy sources. In the policy area, there is a joint programme involving the Norwegian oil industry and Norwegian authorities. Voluntary agreements with the industry limit emissions of greenhouse gases that are not subject to the CO₂ tax.

Status: Norway does not produce ozone depleting substances. The consumption of halons was phased out on 1 January 1994, the consumption of chlorofluorocarbons (CFCs) and carbon tetrachloride on 1 January 1995, and the consumption of methyl chloroform and hydrobromofluorocarbons (HBFC) on 1 January 1996. Methyl bromide is going to be phased out by 2010 and hydrochlorofluorocarbons (HCFC) by 2015. Emissions of greenhouse gases totaled 51,000 gigagrammes (Gg) in CO₂ equivalents in 1994, which is roughly the same as in 1989 and 1990. This total level of emissions does not take into account the increased uptake of CO₂ stemming from the enhancement of sinks, implying that Norway's net contribution to climate change has been reduced since the turn of the present decade. In 1991, Norway introduced a CO₂ tax, which at present is applied to sources of 64 % of Norwegian CO₂ emissions, but covers almost all energy related emissions. Exemptions from the CO₂ tax are intended to preserve international competitiveness related to mineral oils used in air transport, ships engaged in foreign trade, the North Sea supply fleet, and the national fishing fleet, as well as to CO₂ emissions associated with the production of steel, aluminum, cement, and concrete. Norway will maintain its current high CO₂ tax level, while adopting a more comprehensive approach to combating climate change. The Government gives high national priority to the use of more energy-efficient and environmentally safe technologies in industry, transport, energy production, and to Environmental Impact Assessments.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: See under **Status**.

Research and Technologies: The Government supports climate- and ozone-related research. Important studies on the effects of ultraviolet radiation and ambient air pollution have been undertaken. A substantial amount of climate-related research is carried out to improve understanding of atmospheric processes and the relationship between

oceans and the atmosphere, and between economic processes and their impacts on climate change. Research and development of technology, especially in the energy and industrial production sectors, is supported by the Government and industry.

Financing: Norway established a National Fund in 1991, mainly for climate change purposes, with an annual budget of NOK 30-75 million. The Fund is in part used for contributions to the Global Environment Facility (GEF) and in part for the national programme on Activities Implemented Jointly (AIJ). A State Environmental Fund will be established in 1998, with the purpose to inspire both development and use of ESTs by granting loans on favorable terms. Particular attention is to be given to the reduction of greenhouse emissions. Furthermore, the Norwegian Maritime Directorate provides grants for the reduction of NOx emissions from ships. These are given as direct financial contributions. The Government continues to maintain and strengthen the system of grants to new renewable energy sources, such as bio-energy.

Cooperation: In Norway, the Montreal Protocol (1987) was ratified on 24 June 1988, the London Amendments (1990) on 18 November 1991, and the Copenhagen Amendments (1992) on 3 September 1993. The Vienna Adjustment was ratified in 1995. The latest report to the Montreal Protocol Secretariat was prepared in 1996. The United Nations Framework Convention on Climate Change (UNFCCC) was ratified on 9 July 1993. The latest communication of information related to its implementation was submitted to the UNFCCC secretariat in 1994 and the next is to be submitted in 1997. A report on greenhouse gas emissions in Norway 1990-94 was submitted to the secretariat in 1996. Norway is committed to the process of strengthening the UNFCCC by adopting new and legally binding commitments, based on equitable burden sharing. It is a Norwegian aim to actively contribute to the development of practical and effective policy instruments at the international level. As part of this ambition, Norway has co-funded three pilot projects on AIJ in cooperation with the World Bank (in Mexico, Poland, and Burkina Faso), and funded a bilateral pilot project in Costa Rica. Further cooperation on AIJ is under preparation.

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CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: The Ministry of Agriculture is primarily responsible for the legal framework governing the forest sector, but the sector operates entirely within the economic framework of the international market for forest products. Other ministries and institutions actively involved in forest matters are the Ministry of the Environment, county and municipal forest authorities, the State Forest Service, the Norwegian Forest Research Institute, the Norwegian Forestry Society, the Forest Extension Institute and the Norwegian Institute of Land Inventory. Major groups active in forestry include the private sector and non-governmental organizations.

A wide range of measures, including legislation, taxation, economic support schemes, extension services and administrative procedures are employed in implementing the forest policy. The Forestry and Forest Protection Act (1965, amended in 1993) is the main legal framework for forest management. Other laws regulating the forest sector are the Nature Conservation Act (provisions for conservation of forests), the Planning and Building Act and the Outdoor Recreation Act. The Government has initiated a revision of the Forestry and Forest Protection Act, partly with the aim of achieving better integration of environmental aspects. Norwegian forest policy was revised in 1998 - 1999, and a white paper on this was submitted. The policy was adopted by the Storting (Parliament) in June 1999. The white paper presents an updated national forest programme in which the UNCED decisions, the proposals for action from the Intergovernmental Panel on Forests and the results of the Ministerial Conference on the Protection of Forests in Europe are given special consideration.

The development, revision and implementation of the forest programme are a continuous process supported by various inter-ministerial committees to ensure that the programme becomes an integral part of Norway's national sustainable development strategy. Appropriate coordination mechanisms have been established to ensure participation by county and municipal authorities, forest owner organizations, forest industries, NGOs, research and extension institutes and other stakeholders. Owners have the primary responsibility for the sustainable use of their forests. If they wish they may adopt practices ensuring sustainability and join certification schemes such as the FSC. The Ministry of Agriculture has encouraged development of county forest strategies, and developed guidelines for strategic planning at municipal level. A national plan for the protection of coniferous forests was begun in 1991. The objective is to establish a network of strictly protected areas of representative and distinctive types of forest. An evaluation done in 1995 revealed that highly productive areas and large, almost untouched areas are not sufficiently well represented in the protection plan. It was therefore revised and expanded in 1995 - 1996. At present 0.9 % of productive forest land is strictly protected as nature reserves and national parks. In 2001 the forest protection will be evaluated, and in 2002 a strategy for the further work will be developed.

Programmes and Projects: In 1995, the forest sector (including the forest industry) in collaboration with several NGOs, labour organizations and customer interests and the forest and environmental authorities started a 3-year project called "LivingForests." Information and competence building were important aspects of the project. The main result was, however, the development of a set of criteria, indicators and standards for sustainable forest management, adapted to national conditions, and within the framework of the Ministerial Conference on the Protection of Forests in Europe. These criteria and indicators are important tools for policy development, policy monitoring as well as reporting. The negotiated standards form the basis of a certification system for the forestry sector in Norway. Due to a persistent conflict between the forest owners and the environmental NGOs the NGOs have pulled out of this cooperation. The certification system will, nevertheless, be made compulsory for all national suppliers of timber to Norwegian industry.

Status: Area of forest and other wooded land cover a total of 12 million hectares, which amounts to 37 per cent of the area of Norway. The volume of growing stock has more than doubled since 1920, and was 650 million m³ in 1999. The net annual increment is 22 million m³, while annual removals are 8-10 million m³. Approximately 80 per cent of the forest area is in private ownership, divided among about 120 000 properties. This means that responsibilities and authority relating to forests are to a considerable extent in the hands of a large number of

individuals. Biological values have been mapped in about 10 % of the productive forest area. In the next years, work will intensify on this particular issue.

Capacity-Building, Education, Training and Awareness-Raising: The ordinary education system covers all needs in this sector.

Information: Information on forestry issues and forest policy has increased substantially after UNCED. The Ministry of Agriculture makes funding available for forest information annually, and information campaigns are either initiated directly by the Ministry of Agriculture and the county offices or by the Norwegian Forestry Society and the Forest Extension Institute. The Norwegian Forestry Society promotes the understanding of the many ways in which forests are important. The Forest Extension Institute disseminates expertise and information about forestry and related topics to forest owners, workers and officers. Additionally, the forest owners' organizations have taken on substantial information tasks and programs (e.g. in connection with biodiversity and the forest as a carbon sink). Forest resources have been systematically assessed by the National Forest Survey since 1919. The 7th countrywide survey started in 1994 and was completed in 1998. The survey has been improved in the light of international commitments and national requirements. A comprehensive nationwide programme recording the effects of forest policy on the environment, covering harvesting, regeneration, forest road construction and forest planning, has been developed over the past 4 years. Together with forest and environmental information gathered through the National Forest Survey, the program is designed to evaluate and provide guidance for forest policy measures. In 1997 the Ministry of Agriculture introduced an environmental registration project aimed primarily at improving knowledge of forest biodiversity and key biotopes. The main objective is to develop a scientifically based mapping method, which can be used as a tool in forest property management planning. Regular inventories will start on a small scale in 2000.

Research and Technologies: Substantial knowledge on forest biology, technology and economy is available through the Norwegian institute for forest research. One interesting avenue that is being explored is increased use of bioenergy from forests.

Financing: Each forest owner is responsible for the costs of good forest management. Loan funding for investment is easily available and the rules for deferring taxation and subtracting expenditure from taxable income favour all investment necessary for harvesting timber. De facto support for promoting logging in difficult terrain is currently being evaluated to see whether a change of rules will give better protection of forest biodiversity.

Cooperation: The Norwegian Government has signed the International Tropical Timber Agreement.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: This issue does not apply to the country. However, the country is a party to the International Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification Particularly in Africa.

Programmes and Projects: No information available.

Status: See under **Decision-Making**.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: See under **Cooperation**.

Cooperation: Norway's role concerning the Convention is as a donor to affected developing countries. These contributions are directed through multilateral channels as well as regular bilateral aid programmes. Additionally, activities implemented jointly to combat climate change may yield benefits in terms of land use and protection by funding revegetation.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: The bodies mainly responsible for sustainable mountain development are the Ministry of Environment, the Directorate for Nature Management, and Statsskog (State-Owned Land and Forest Company) at the national level; the County Governor and the county municipalities at the regional level; and the municipalities at the local level. In addition, there are several other sectoral institutions at each of the three levels that have interests in such areas and participate in the decision-making processes. Legislation related to mountain areas includes: the Nature Conservation Act, the Mountain Act, the Planning and Building Act, the Wildlife Act, the Pollution Control Act, the Cultural Heritage Act, the Act Relating to Salmonids and Freshwater Fish, the Open-Air Recreation Act, and the Act Relating to Motorized Traffic in Marginal Land and Water Courses. The Nature Conservation Act has been, and will be in the years to come one of the major legal instruments to secure biodiversity of mountain regions.

The Ministry of Agriculture governs several policies that affect various mountain regions. The main financial incentives include payments for summer mountain farming and payments for extensive grazing. The latter demands animals grazing on the outlying land at least eight weeks per year. The payments include cows, horses, sheep, and goats. These regulations aim to keep up and resume traditional summer mountain farming, and to maintain the traditional cultural landscapes through grazing. Cultural landscape is a vital part of the mountain regions, and requires an active agricultural sector. The mountains on which animals graze also provide open spaces for hiking and visual enjoyment upholds biological diversity and helps keep rural areas vibrant. This is part of the 'care through use'-idea adopted by the Ministry of Agriculture. On a national level, large mountain areas are already secured through the existing Norwegian national park system. According to a new, approved Action Plan for National Parks, the protection of mountain areas will be extended significantly by the year 2008. One of the main tasks of regional planning is to ensure sustainable land use management in such areas. National and regional protection plans pursuant to the Nature Conservation Act are important, but they are not sufficient on their own to achieve Norway's environmental policy goals of maintaining viable ecosystems and biological production and diversity. The following NGO groups are involved in mountain issues: NGOs for out-door recreation, for example the Norwegian Mountain Touring Association (DNT); fishing and hunting groups, for example, the Norwegian Association of Hunters and Anglers (NJFF); nature conservation groups, for example, the Norwegian Society for Conservation of Nature (NNV), the Norwegian Ornithological Society (NOF), the Norwegian Botanical Society (NBF), and the World Wildlife Fund (WWF); and the local mountain board (Fjellstyrer).

Programmes and Projects: In recent years, counties have begun to draw up joint land use plans for several large mountain regions in southern Norway. Work is in progress for Setesdal Vesthei, the Dovrefjell area, and the eastern Hardangervidda. A joint land use plan for the Rondane Mountains in Hedmark and Oppland counties was approved by the central authorities as early as 1992. Several of these plans involve coordinated land use management pursuant to the Planning and Building Act in the peripheral zone, and protection plans pursuant to the Nature Conservation Act in the core area.

Status: In Norway, the mountain region covers an area of approximately 155 000 km² or nearly half of the Norwegian mainland. However, the relative economic importance of the mountain regions to the country is less than 1%, and the number of people living in these areas is very small. The most important livelihoods are farming, forestry, and tourism. A number of social, economic, and cultural incentives have been made for farmers or mountain communities to commit themselves to conservation of mountain areas and to remain in these areas. Such incentives include: funds (compensation) to land-owners for establishing special nature conservation areas; and grants for research. Large mountain areas are used for or affected by several types of encroachments linked to road constructions, hydroelectric schemes, power-line corridors, industrial and other commercial projects, and housing. In this century, areas with a wilderness-like character have been reduced drastically. Such areas, located more than 5 km from a major technical encroachment, constituted 12% of the country in 1994, compared with 48% in 1990

(Svalbard and Jan Mayen are not included). Many of the wilderness-like areas that are left are located in the mountain regions and in the northern part of Norway. In an international context, Norway has a particular responsibility for preserving a representative selection of its areas of fjords, coasts, and mountains. For instance, the Norwegian mountains represent the natural habitat for the original wild mountain reindeer in Europe, and Norway has, therefore, a special responsibility for conserving this species. The Government has designated large continuous areas of natural habitat as one of the main targets of its land use policy as regards natural resources.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: In a special report, the Directorate for Nature Management has presented a mapping project focused on Norwegian environmental regions without human encroachments. The report gives an account of the importance of areas without encroachments in relation to the conservation of biological diversity and outdoor recreation. Future development will be continuously monitored. The report is meant to support management of areas and resources and facilitate decision making at the municipal and county level.

Research and Technologies: No information available.

Financing: Financing for sustainable mountain development is within the ordinary budgets of the Ministry of Environment (Directorate for Nature Management), the Ministry of Agriculture, the County Governor, the county municipalities, and the municipalities. Norway participates in the Conference of Ministries responsible for Regional Planning (CEMAT) under the Council of Europe and is working on charters for rural and mountain development.

Cooperation: Norway has signed the Bonn Convention on the Conservation of Migratory Species of Wild Animals, the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Ramsar Convention on Wetlands of International Importance Especially as Wildlife Habitat, the Convention on International Trade in Endangered Species (CITES), and the Convention of Arctic Flora and Fauna (CAFF). These agreements have been taken into account in reviewing national strategies for mountain areas.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The Ministries of: Agriculture; Communal and Regional Affairs; and the Ministry of Environment are responsible for agriculture, rural and environmental development. The Ministry of Agriculture is the body primarily responsible for the agricultural sector, including sector specific environmental topics according to the principle of sectoral policy. Environmental and rural topics are mainly addressed to the ordinary coordinating bodies as consequence of the principle of integrating of environmental consideration in all politics and administration. The Ministry of Environment and the Ministry of Agriculture have a permanent committee of experts to handle topics related to environment and to sustainable development. The ministry is responsible for the implementation of the Agricultural Agreement and the Reindeer Husbandry Agreement and for all financial measures utilized in these agreements. Parties to the annual negotiations in the agricultural sector are the state, the Norwegian Farmers' Union and the Norwegian Farmers' and Smallholders' Union. Negotiations related to reindeer husbandry are conducted with the Sami Reindeer Herders' Association of Norway.

Relevant national legislation covering agriculture and rural development include: The Land Act, the Cultural Heritage Act, the Nature Preservation Act, the Animal Welfare Act and the Pollution Act. The national policy on sustainable agriculture was revised in 1999 (Report to the Storting No. 19 (1999-2000) called 'On Norwegian agriculture and food production.' The main principles of sustainable development are discussed in the report. These principles, in an environmental context, (el. concerning the environment) comprise sound management of natural resources, preservation of ecological functions, vulnerable species and ecosystems, and conservation and development of the cultural landscape including cultural monuments and its recreational value. Agricultural policy intends to reduce air and water pollution and to protect the soil from degradation. In recent years more attention has been focused on ecological methods of production in conventional farming and to the further development of organic farming (including marketing).

Programmes and Projects: There are a variety of initiatives to encourage environmental friendly farming, including incentive schemes, actions plans, information and advice and regulations. These include regulations requiring the farmers to have a fertilization plan, provisions on animal manure, acts of preserving cultural features, provisions to prevent pollution, provisions requiring cattle to be on pasture minimum 8 weeks each summer. Control and monitoring systems are used to secure adoption of environmental friendly farming in the agriculture and to estimate the environmental effects of the measures. The Ministry of Agriculture has developed an environmental action plan for the years 2001 to 2004. There are seven main target areas: protection and use of biological diversity; outdoor life; cultural monuments and cultural areas; over-fertilization and oil pollution; chemicals harmful to health and/or the environment; waste and recycling; and climate, air pollution and noise pollution. The plan outlines the targets and how to achieve them. Measures are targeted towards specific purposes to promote cost-effective action based on use of a broad scope of policy instrument is.

The Rural Development Support Scheme (RDSS) was established in response to the challenges rural communities face, such as unemployment and changes in the settlement structure. The RDSS is intended to supplement general regional aid by providing an incentive for small-scale operations that can provide employment to replace disappearing jobs in agriculture. The target group is people attached to farm holdings. Environmental sustainability is a precondition for support from the RDSS. The Ministry of Agriculture seeks to combine the interests of the industry with environmental and cultural concerns. RDSS funding is available to both men and women, but special priority is given to women. See also under **Status**.

Status: The multifunctional role of agriculture is an important aspect of Norwegian agricultural policy. It comprises the production of foodstuffs, the upkeep of vibrant rural and cultural communities and the protection of the environment and biological diversity through an active agricultural production. The Sami people are an ethnic group with status as indigenous people. Policy-making and legislation covering reindeer husbandry seeks to make it ecologically, economically, and culturally sustainable. Sustainable use of the pastures for reindeer husbandry is today an important challenge in the northern part of Norway. Part of the turn towards more ecologically sound

agricultural practices includes the conversion from conventional to organic farming. There is a political aim to increase the agricultural area used for organic farming from 2% in 2000 to 10% by 2010. In addition to subsidizing organic farmers, support is given to develop the market for organic products; research; information and advice. NGOs specially working to enhance organic farming are subsidized, and the control system is partly financed through the State, and partly through the farmers who pay approx. 1/3 of the controlling costs. For 2001 NOK 75,5 million are granted to enhance the development of organic farming.

Norway is the northernmost country in Europe. Norway's mainland extends from 58°N to 71°N, and agriculture is carried out further north than in any other country in the world. Only 3% of the land in Norway is fit for agriculture, and just 1/3 of that can be used to grow cereals. 50% of the food eaten in Norway (counted in calories) comes from domestic producers. Norway is sparsely populated with a population density of 13 inhabitants per km². The topography is such that farms tend to be small, productivity is relatively low and there are large distances between producers and markets. Regional development is seen as vital for maintaining the geographical distribution of the population, especially in remote areas. Agricultural policy is the primary means of fulfilling this goal, particularly in less favoured regions where there are few alternatives to employment in agriculture. Agriculture in Norway clearly has a multifunctional role in that it serves to uphold rural communities, produces environmental benefits such as cultural landscape and biological diversity as well as providing foodstuffs.

Capacity-Building, Education, Training and Awareness-Raising: Each farm must from 2004 use an Environment Plan for their daily work. The Plan will include information on the efforts they must provide to follow the regulation and to obtain environmental goals, e.g. to the cultural landscape and other environmental goods. The Plan also addresses measures of specific local interest on each farm and gives possibilities for comprehensive effort. State subsidies are seen as a necessary means to provide an incentive to carry out changes in agricultural practice, and to compensate for loss of earnings. This Plan will furthermore serve as a basis for state revision and it is also intended that it will raise awareness and knowledge of environmental concerns in general. In addition to this, there are several private test farms that educate its members in environmental practices. These receive public funding.

Information: In 2000, a working group was organized to look at how advice from various state and private sources is organized, and possibilities for improvements in the future. The advice ranges from financial, through agricultural to environmental guidance and is not as efficiently coordinated as would be the ideal. Currently, an average of NOK 13.000 is spent on information and guidance per farm. The working group is expected to report to the Ministry in 2002.

Research and Technologies: Long-term plans for research in agriculture (1998-2005) have been drawn up setting out the goals, strategies, and priorities for agricultural research. The aim is to provide the knowledge required for sustainable management of nature and production of food, forest products, and other products and services based on biological resources, land resources, and sustainable rural development. The Norwegian Board for Research has a large part of its research on environmental issues. It received NOK 280.000 from The Ministry of Agriculture in 2000.

Financing: State aid and funding allocated by the Ministry of Agriculture to the promotion of sustainable agriculture totaled NOK (Norwegian kroner) 1 020,5 million in 2001. See also under **Programmes and Project, Status and Capacity-Building, Education, Training and Awareness-Raising**

Cooperation: Norway is working to promote sustainable agriculture within the United Nations' Food and Agriculture Organization (FAO) and the Organization for Economic Cooperation and Development (OECD). Both the forestry and the agricultural sectors contribute to the aims set in the Kyoto agreement. Through the EEC-agreement, Norway shares common legislations and practices with the EC countries on most of the EC legislations related to environment and furthermore on several agricultural issues such as the legislations on animal health.

The trade agreement with the World Trade Organization is central to national policy for agriculture. The SPS and the TRIPS-agreements are important parts of the WTO negotiations, but for sustainable agriculture and rural areas, an understanding of Non-Trade Concerns to include multi functionality is vital. In a regional setting, Norway takes part in the work of the Nordic Gene Bank and will host the ‘Conference for the Sustainability of the North Sea’ in September 2002.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The Ministry of Environment (the Department of Nature Conservation and Cultural Heritage, the Section for Biodiversity and Biotechnology) is the body primarily responsible for biodiversity and genetic resources. The Ministry of Agriculture (and the Ministry of Fishing) prioritizes sustainable harvests from land, forests and seas. The issue of sustainability is thoroughly integrated into all parts of policy, legislation and financial incentives at the Ministry of Agriculture.

All relevant sectors are participating actively in the preparation of a National Action Plan on Biodiversity, which will be presented in a Parliamentary Report on sustainable development to be issued in spring 1997. Related legislation will be reviewed according to the conclusions of the action plan. In general, several parastatal bodies and institutions, as well as NGOs representing academic and private sectors, are involved in the national, regional, and local planning processes. The focus on biological diversity is jointly on conservation and sustainable use of natural resources, and the priority is given to integrating sustainable use and conservation of biodiversity in all sectors and at all levels of society. The most important acts, which can be used for biodiversity and area protection, are the Nature Conservation Act and the Svalbard Act. In addition, there are conservation initiatives stemming from other acts, such as the Planning and Building Act, the Wildlife Act, the Act Relating to Salmonids and Freshwater Fish, the Cultural Heritage Act, the Act on Saltwater Fishes, and the Aquaculture Act. The Ministry of Agriculture (and the Ministry of Fishing) prioritizes sustainable harvests from land, forests and seas. The issue of sustainability is thoroughly integrated into all parts of policy, legislation and financial incentives at the Ministry of Agriculture.

Programmes and Projects: See under **Decision-Making, Status, Information and Cooperation.**

Status: Protection of species is primarily secured by conservation and proper management of habitats. In Norway, protected areas consist of 18 National Parks, 76 Landscape Protected Areas, and 1172 Nature Reserves. In addition, there are several action plans for managing species requiring special attention (for example, threatened species and game species). Species covered by the Wildlife Act and the Act Relating to Salmonids and Freshwater Fish (terrestrial mammals, birds, reptiles, amphibians, fishes, and other freshwater organisms) are at the outset under the principle of general protection.

Capacity-Building, Education, Training and Awareness-Raising: See under **Financing.**

Information: In order to improve the coordination of collecting, storing, and presenting environmental data, the Ministry of Environment has established a network of 10 thematic centres. The centres will together cover all sectors relevant to environmental issues/data collection. Monitoring of Environmental Biodiversity is an overall programme planned to be established by the year 2000. It is recommended that the programme be based on ongoing monitoring activities as well as on the need for new biological registrations. It is recommended that the management of the various monitoring programmes still resides with the authorities and institutions presently responsible, but the overall organizational responsibility is to be placed with the Directorate for Nature Management.

Research and Technologies: See under **Cooperation.**

Financing: In 1995, the Norwegian Research Council received approximately US\$8 million in national funding for research on subjects related to biodiversity conservation and sustainable use. Biodiversity is increasingly integrated into the educational system at different levels from primary school to universities. The establishment of Centres for Environment and Development at all universities has strengthened environmental capacity in the educational system. In 1994, the number of scientists in the field of biodiversity was approximately 400. In universities, the number of courses on biodiversity at the Masters and Doctoral levels has increased. Funding for biodiversity-related measures within the budget of the Ministry of Environment in 1996 was: ecosystems and species

management US\$74.5 million; outdoor recreation US\$12.1 million; climate/air pollution/organic waste US\$79.2 million; land use planning US\$21.7 million; Arctic and Antarctic ecosystems US\$19.8 million; and research and information US\$24.5 million. Funding for environmental measures from the Ministry of Agriculture and the Ministry of Fisheries in 1996 was US\$132 million and US\$42 million respectively.

Cooperation: Norway is party to four international conservation and sustainable use instruments related to biodiversity. The Convention on Biological Diversity was signed in 1992 and ratified in 1993. A country study on diversity in Norway was issued in 1992 as a follow-up to the Convention on Biological Diversity. The first Norwegian report on the implementation of Article 6 of the Convention will be submitted by June 1997. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed in 1976. The latest report submitted to the Secretariat was in 1995. Other pertinent instruments are the Convention on Wetlands of International Importance (Ramsar), and the Convention on the Conservation on Migratory Species (Bonn). The Government attaches great importance to international cooperation regarding Research and Development (R&D), as well as legislation on biotechnology. In May 1993, the Ministry of Environment, in cooperation with the United Nations Environment Programme (UNEP), arranged a conference of experts on biological diversity in Trondheim, which was attended, by scientists, managers, bureaucrats and policy-makers, as well as representatives from international organizations and NGOs from 79 countries. In July 1996, the Ministry of Environment, in collaboration with UNEP, the secretariat of the Convention on Biological Diversity, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Conservation Union (IUCN), and the Scientific Committee on Problems of the Environment (SCOPE), arranged a conference on Alien Species in Trondheim. One hundred and eighty scientists, managers, and policy-makers from developing and developed countries, as well as representatives from international organizations and NGOs attended this second Trondheim Conference. Norway will also contribute actively to strengthening the scientific basis for decisions to be made under the Convention on Biological Diversity by arranging workshops and other fora. The Ministry of Agriculture has as one of its political aims to provide an ecologically sustainable agricultural production. This includes caring for the cultural landscape and related to it, preserving biological diversity. The Ministry of Agriculture also takes part in the work of the Nordic Gene Bank and the Nordic Gene Bank for Farm Animals, both of which have been established under the auspices of the Nordic Council of Ministers

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CHAPTERS 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING.

Decision-Making:

Technologies: There is a Committee for ESTs consisting of officials from several ministries, from industry and from the Norwegian Trade Council. The Committee for ESTs consists of both ministry officials and private stakeholders. More specifically, they include representatives from several ministries, from industry through the Confederation of Norwegian Business and Industry (NHO), and from the Norwegian Trade Council.

The current strategy on ESTs (i.e. since 1996) is based on government guidelines: it seeks to include all industrial sectors, all technologies and all environmental issues. The focus is the reduction in NO_x and other greenhouse emissions as well as an organizational structure where the main responsibility for EST policy rests with the Ministry of Industry and Trade. The Ministry of Petroleum and Energy has developed a strategy, which gives priority to ESTs. The main concern is to include all industrial sectors, all technologies and all environmental issues. This is to ensure a focus on a reduction in NO_x and other greenhouse emissions as well as an organizational structure where the main responsibility for EST policy rests with the Ministry of Industry and Trade. As limitation of greenhouse gas emissions has become a global priority, as well as a national one, the sectors of energy and transportation are natural candidates for urgent application of ESTs. As a consequence, the Ministry of Petroleum and Energy has developed a strategy, which gives priority to ESTs, and programmes which may contribute to reducing the greenhouse effect. Proprietary technology is in general owned by companies, research foundations and private individuals. Since most technology depends on team know-how rather than on patents, the role of government in promoting technology is to ensure a proper legal and institutional framework. The key instrument for securing a proper direction for technology development is to enforce strong environment regulations and to ensure that all environmental costs are included in prices, taxes and charges. The government's role in promoting new technology is through ensuring a well functioning system of basic and advanced education and a good legal framework for companies and individuals to apply their discoveries in practice. Each company is responsible for developing or acquiring the knowledge they need, but the government seeks to promote innovation and eco-efficiency through research grants. The quality certification schemes through ISO 14000 and EMAS also help promote quality control and good practices.

Biotechnologies: The Ministry of Environment, Section for Biodiversity and Biotechnology, is responsible for environmentally sound management of biotechnology in Norway. The Ministry of Health and Social Affairs is responsible for the health-aspects relating to the production and use of genetically modified organisms (GMOs), and is the competent authority for contained use of GMOs. An inter-ministerial committee in modern biotechnology has been established by the Ministry of Environment to facilitate the participation of all relevant authorities in the regulation of modern biotechnology. The Norwegian Government has appointed an official independent board for biotechnology, the Norwegian Biotechnology Advisory Board. Its mandate covers issues, specifically ethical and social aspects, relating to biotechnology in connection with humans, animals, plants, and microorganisms. National legislation has special provisions for biotechnology in the Act Relating to the Production and Use of Genetically Modified Organisms. The Gene Technology Act (1993) describes the safety mechanisms and procedures. There are special provisions concerning public information and consultation. Regulations on Impact Assessment transport and import in the Gene Technology Act have been adopted. Guidelines on Procedure concerning applications for deliberate release of GMOs referred to in the Gene Technology Act are also established. Regulations for labeling and export are under development. Deliberate release of GMOs is subject to approval by the competent national authority, the Ministry of Environment. Major NGOs in the area of environmentally sound management of biotechnology are the Norwegian Society for Conservation of Nature and the Consumer Council.

Programmes and Projects :

Technologies: In the fiscal policy area, the Norwegian government established a broad national programme for ESTs in 1990. The aim of the programme is to create a foundation for both industrial growth and prevention of environmental degradation. The administration of the programme is carried out in close cooperation with the Confederation of Norwegian Business and Industry (NHO). The national strategy for ESTs includes both general industry programmes and policy instruments. Several administrative and economic measures are being applied to promote environmentally sound technology (EST). The main targets include: Further environmental programmes stimulating the use of ESTs in industry are: the programme “Responsible Care”, which is implemented by 400 companies within the processing Industry; the “MILJØSOK” programme, which sets emission targets for the petroleum industry. It provides a listing of relevant ESTs, which may be applied to the designated targets. A project financed by the Ministry of Environment covering ten small and medium enterprises has been completed. New pilot projects on the fish industry, fish farming, and furniture industry are being tried in 1996. To date approximately 15 companies are registered, with several companies working towards registration. The programme “Norwegian Environmental Technology towards Year 2000” (NORMIL) was started in 1996, whereas the programme “Technology for Reduction of Greenhouse Emissions” (KLIMATEK) began early 1997. Finally, there is EKSPOMIL, a programme promoting Norwegian ESTs for export.

Biotechnologies: See under **Cooperation**.

Status:

Technologies: Over the last 3-4 years Norwegian industry has increased its focus on ESTs as an alternative to “End-of-Pipe”-solutions. The use of life-cycle analysis has also increased significantly. The Eco-Management and Audit Scheme (EMAS) regulation came into force in June 1995. Norway participates in the International Standards Organization’s work on standards within environmental management (ISO/TC 207), and is responsible for chairing one sub-committee and one working group. Norway hosted the 1995 Technical Committee meeting.

Biotechnologies: Sound and sustainable use of modern biotechnology has high priority in Norway. Emphasis is increasingly being put on related R&D activities, both in the private and the public sector. Legislation and research programmes in the field of biotechnology and environment have been strengthened.

Capacity-Building, Education, Training and Awareness-Raising:

Technologies: The Norwegian confederation of employers, the NHO organizes conferences related to environmental issues twice a year and numerous seminars are offered to promote interest in sound environmental management. In this context the yearly conference on Environment Northern Seas (ENS) may be considered particularly significant. An award for the best Environmental Report has been established and has attracted significant interest. The document “Environmental technology-guidelines for further work,” written and approved in 1996, provides a programme of action for both promoting and implementing ESTs in Norway. The Ministry of Environment has established a foundation for increased eco-efficiency, “GRIP” which aids Norwegian public and private sector organizations in attaining better environmental performance. In general the needs turn out to be more in the area of management practices, training and better use of existing technology rather than in introducing specific new technology.

Biotechnologies: Capacity building is an important element under the Cartagena protocol under the CBD.

Information:

Technologies: The Norwegian Pollution Control Authority (SFT), the Confederation of Norwegian Business and Industry (NHO), the GRIP foundation and the World Cleaner Production Society (WCPS) are the main sources of information at the national level. There is, however, no national register with information as to who is able to deliver or develop the technology or services necessary to solve certain environmental problems. Thus, the Government is encouraging the business and industry sectors to establish a register of ESTs similar to the Norwegian Resource Centre for Waste Management and Recycling (NORSAS) register on the waste industry.

Biotechnologies: The Norwegian Biotechnology Advisory Board produces a bimonthly information leaflet that is distributed to most of the high schools and other interested institutions and people. The leaflet highlights ethical and social issues as well as potential benefits and risks related to the use of modern biotechnology.

Research and Technologies:

Technologies: See under **Programmes and Projects**.

Biotechnologies: See under **Decision-Making and Status**.

Financing:

Technologies: Companies fund their own investments, research and development needs and where better processes are deployed, the costs are recovered through income. In general both public and private entities find that when new investment takes place the cost of utilizing environmentally friendly and resource efficient equipment carries little or no additional initial cost and may give large long term benefits. On this background, the state efforts are focused on promoting innovation rather than on investment. Among the agencies to finance development and transfer of ESTs are the Ministry of Environment, the Ministry of Trade and Industry, the Ministry of Petroleum and Energy, the Norwegian State Pollution Control Agency, the Norwegian Trade Council, the Norwegian Pollution Control Agency and the Norwegian Maritime Directorate. In addition, a general system of green taxes should encourage more sustainable consumption patterns overall. A State Environmental Fund was established to inspire both development and use of ESTs. KLIMATEK is co-financed by the Ministry of Environment, the Ministry of Trade and Industry, and the Ministry of Petroleum and Energy.

Biotechnologies: In 2001, the funding for biotechnology-related projects from the Ministry of Environment to the Norwegian Research Council, the Division for Environment and Development, is approximately 2mill. NOK. Other relevant sectors have to finance research on aspects relating to health and environment caused by GMOs within their sector. Until 1997, contributions for ESTs were administered by the Norwegian State Pollution Control Agency. The Ministry of Environment grants financial support for abating emissions from municipal waste water and sewage systems. These grants may also be used to develop new ESTs for improving the quality of freshwater. The Ministry of Environment also offers special grants for investments in ESTs, which will improve treatment of organic special waste. NOAH, the National Association for Treatment of Hazardous and Special Waste, is the main instrument for implementing Norwegian policy in this respect. NOAH is a joint venture between the state and private industry, with the State as majority shareholder. NOAH's investment in a new plant for environmentally sound treatment of hazardous and special waste is part of a national plan for promoting ESTs in the area of waste management. A State Environmental Fund will be established in 1998, with the purpose of inspiring both development and use of ESTs by granting loans on favourable terms. Particular attention is to be given to the reduction of greenhouse emissions. The Ministry of Petroleum and Energy has for several years given economic contributions to measures which will encourage energy saving, as well as the development of renewable sources of energy. Furthermore, the Norwegian Maritime Directorate provides grants for the reduction of NOx emissions from ships. These are given as direct financial contributions. In addition to these special economic measures, a general system of green taxes (e.g. CO2 tax) should encourage developments within the area of EST, as well as more sustainable consumption patterns overall.

Cooperation:

Technologies: In Central and Eastern Europe programmes are being implemented through cooperation between the Norway and several countries. The Norwegian Agency for Development Cooperation (NORAD) is focusing on strengthening existing EST centres in developing countries. Norway has established a network of competence for the transfer of environmental knowledge and capacity-building to developing countries and countries in transition. Norway is Party to the WTO Agreement on Trade Related Intellectual Property Rights (TRIPs) and has implemented corresponding legislation, but has no legislation aimed specifically at protecting IPRs in connection with transfer of ESTs. Norwegian development assistance promotes environmentally sound technology for all relevant projects. Projects with labour intensive methods are emphasized. The Norwegian Government finances the transfer of expertise programmes on waste minimization and cleaner production strategies in Central and Eastern Europe and China. The Norwegian Society of Chartered Engineers (NIF) has the overall responsibility for managing these programmes for a two-to-four year period. The programmes aim at implementing profitable and environmentally favourable restructuring of industrial processes in 200-350 relevant production companies in each of the countries involved. In Central and Eastern Europe the programmes are being implemented through cooperation between the Norwegian Ministry of Environment, and the Ministry of Industry and/or the Ministry of

Environment in the country concerned. The reduction of waste by 30-40% with practically no extra investment is the most remarkable experience gained so far. The Norwegian Agency for Development Cooperation (NORAD) is focusing on strengthening existing EST centres in developing countries such as the Centre for Science and Environment (CSE) in India, the Central Environmental Authority (CEA) in Sri Lanka, the Bangladesh Centre for Advanced Studies (BCAS), and the Asia Institute of Technology (AIT)--a regional centre in Bangkok. The Norwegian Government is in the process of increasing funding to various environmental projects in Asia. Baseline studies, resource assessments, institutional strengthening, and management of technology will be essential parts of the programme. Norway has established a network of competence for the transfer of environmental knowledge and capacity-building to developing countries and countries in transition. The private sector is playing an all-important part in PRIODA, a Russo-Norwegian programme for cooperation within environmental technology, which is parented by the Government of Norway and the Kola and Arkhangelsk regions of north-western Russia. In common with all OECD country governments Norway's activities on technology cooperation are part of the Government's written reports on foreign aid to the Development Assistance Committee (DAC) of the OECD. Norway's obligations under the global conventions also require reporting on technology cooperation, in common with all other developed countries, with which Norway shares her reports to the respective secretariats. Transfer of climate technology is described on p. 58 of Norway's 1997 communication to the Conference of the Parties.

Biotechnology: Norway ratified the Cartagena protocol under the Convention on biodiversity in Mai 2001. Development assistance activities relating to the implementation of the Cartagena protocol is to be developed. International contacts and cooperation exist among Norwegian scientists, but they are not specifically funded or advised by international organizations or professional staff. Norway has also contributed to the Fourth European Community Framework Programme on Biotechnology. The Norwegian Research Council runs a research programme on biodiversity included biotechnology aspects.

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CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES.

Decision-Making: On the government side the Ministry of Environment and its subordinate bodies, the State Pollution Control Authority, and the Directorate for Nature Management deal with pollution, biodiversity and recreational use as well as with the sustainable management of anadromic fish species (salmon and sea trout). The MOE is also responsible for managing the wildlife on the Norwegian islands in the Arctic Ocean. The Ministry of Fisheries sets the framework for all fisheries (except for the anadromic species). They receive scientific advice on marine ecosystem management from the Norwegian Institute of Ocean Research in Bergen. Where straddling stocks are concerned, special commissions composed of the relevant neighbouring countries take decisions on fishing quotas. In particular this involves Iceland, the European Union and Russia.

The implementation of measures is the responsibility of the sectoral ministries. The main responsibility for oceans and coastal areas rests with those who have the capacity to make an impact. Land based activities with harmful emissions, landowners on the coast, ship owners and the fisheries. Each of these must integrate the long term considerations in their routine decisions. The main acts are the Pollution Control Act, the Seaworthiness Act, the Nature Conservation Act, the Planning and Building Act, the Saltwater Fisheries Act, the Aquaculture Act, and the Harbour Act. Norway has a National Oceans Policy, which is fully integrated with the national strategy for sustainable development.

Programmes and Projects: Through the ministerial declarations of the North Sea Conferences, Norway has made political commitments to reduce discharges of nutrients and hazardous substances to the North Sea significantly. Through the London Declaration (1987) and Hague Declaration (1990) it committed to reducing anthropogenic phosphorous and nitrogen emissions to the North Sea by at least 50% between 1985 and 1995. Norway has also adopted the so called one generation goal for reduction of hazardous substances, as set in the Esbjerg declaration in 1995 and by OSPAR in 1998. Norway's Action Plan for Hazardous substances contains main strategies and concrete proposals for action with specific time limited target. See Chapter 19 of this Profile for more detailed information on the Plan. Through the European Economic Agreement, Norway has implemented most EU directives on chemicals and water quality, and is in the process of implementing the water framework directive. See also under **Status**.

Status: As a party to the Convention for the Protection of the Marine Environment of the North east Atlantic (OSPAR), Norway is committed to protecting the marine environment from pollution from land-based sources, from dumping and incineration, as well as from offshore sources. Norway has phased out dumping and incineration at sea in accordance with international commitments. In the 1990s, Norway made considerable investments in waste water treatment and reduction of nutrient discharges. Norway has reduced the emissions of phosphorous and nitrogen to the North Sea by 48% and 23% respectively from 1985-95, nearly meeting the phosphorous target but missing that for nitrogen. As Norway was not the only North Sea country to miss the 1995 target, the North Sea Conference advanced the 50% reduction deadline to 2005. The emissions of dioxin, mercury, cadmium and lead to the North Sea were reduced by >95% , 85%, 95% and 100% respectively during the same period, according to the Progress report to the 4th International conference on the protection of the north sea from 1995. Direct industrial emissions have been reduced between 50-95 % (depending on the substance) over the last twenty years (for more details on chemicals, see Chapter 19 of this Profile).

Capacity-Building, Education, Training and Awareness-Raising: Public awareness and information programmes are strongly supported. See also under **Cooperation**.

Information: Coastal vulnerability assessment is very important and well covered in research activities. Systematic observation of the marine environment is also very well covered by Norwegian research and marine science, and

these activities will be further strengthened in the coming years. Norway initiated a study of phyto- and zooplankton in Arctic shallow lakes in 1995 to determine possible effects of ozone layer depletion. Annual assessments are regularly made of the state of the environment in coastal and marine areas and of living marine resources.

Research and Technologies: Norwegian experience with the transfer of environmentally sound technology is often relevant to oceans and coastal areas. With regard to sewage-related problems, promotion of environmentally sound technology and sustainable practices are considered very important and these aspects are generally well covered.

Financing: The building of new municipal waste water treatment plants has received considerable financial support from the government.

Cooperation: The United Nations Convention on the Law of the Sea (UNCLOS) was signed by Norway in 1982 and ratified in 1996. Norway has ratified the United Nations Food and Agriculture Organization's (FAO) agreement on Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, and has been active in the FAO work on a Code of Conduct for Responsible Fishing. Other important international forums for cooperation are as follows: the Oslo & Paris Commissions (OSPAR), the Bonn Agreement, the Arctic Environmental Protection Strategy (AEPS) and the North Sea Conferences at the regional level; and the United Nations Convention on the Law of the Sea, the International Convention for the Prevention of Pollution from ships (MARPOL), the London Convention 1972 and the International Convention of Oil Pollution Preparedness, Response, and Cooperation (OPRC) at the global level. The Nansen Programme provided by Norway supports developing countries in fishery research and management in order to promote utilization of marine living resources and an improved protection of the marine environment. The Programme's objectives reflect recommendations of the United Nations Conference on Environment and Development (UNCED) and the spirit of international cooperation contained in the United Nations Convention on the Law of the Sea. The Programme carries out field work through surveys with the research vessel "Dr. Fridtjof Nansen" and produces basic information on resource abundance and distribution to satisfy immediate management needs. The long-term objective of the Programme is self-sufficiency in research and management in partner countries through the development and strengthening of their institutions. In 1995, "Dr. Fridtjof Nansen" has carried out research activities worth NOK 20 million.

Furthermore, Norway is involved in several development projects in different countries. Among these are an Industrial Pollution Programme in Zambia, a Pollution Control and Waste Management Programme in Namibia, Industrial Pollution Prevention Programmes in Botswana and Mozambique, and the establishment of a centre for environmental information and statistics in South Africa.

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CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES.

Decision-Making: The charge of coordinating water resource management and development is divided among several agencies. The Norwegian Water Resources and Energy Administration (NVE, a subsidiary of the Ministry of Petroleum and Energy), in close cooperation with the Directorate for Nature Management (a subsidiary of the Ministry of the Environment) is in charge of the management of the country's water resources, particularly regarding power generation and works that may have a significant impact on the watercourses or their banks. The Norwegian Pollution Control Authority (a subsidiary of the Ministry of Environment) is in charge of preventing pollution, noise and waste. The Ministry of the Environment is also setting the rules prohibiting the use of motorized boats on all smaller lakes, while local authorities have the power to grant some exceptions from this. At the regional level, NVE's regional offices and the county governors are involved in the management and development of water resources.

Decisions on investment in water-using equipment and water-use management lie with the user. Water resource management is among the areas where the subsidiary principle applies in Norwegian administration.

Decisions on emissions to water and air, land management in the watershed, biodiversity in the water as well as regulating the flow of water affects the state of rivers, lakes and groundwater. Some of the bodies taking such decisions are not usually seen as water management agencies. The most important of such indirect influences on the quality of Norwegian water resources is acidification and consequent fish death and corrosion problems through long range air pollution. 90% of this comes from abroad and is now being sharply reduced by a regional treaty.

Providing water and sewage services to both commercial and private users is the responsibility of local authorities. Prices vary greatly, since by law, the usage fee levied by the supplier has to correspond to the costs, so cross-subsidies with other municipal income is not possible. There is no other tax on water use, and there is no plan to introduce any. The Regulation for Water Supply and Drinking Water (1995) gives a set of requirements for drinking water quality, deliverance security, etc. for water plants. The municipal councils approve the water supply systems in accordance with the Regulation within the municipal borders while health authorities may perform quality checks on the water and have the power even to shut down the system on short notice. For private water supplies from streams, wells and boreholes, the owners carry the responsibility for ensuring adequate water quality. If the water is piped into a dwelling away from densely built up areas, the owner is responsible for installing approved systems for cleaning the resulting effluent. In all villages and towns buildings have to be connected to the public sewage system.

Each farmer has to undertake any irrigation measures, alone or in cooperation with neighbours within the framework of current regulations. The Norwegian agricultural administration (the Ministry of Agriculture, the county governors and the municipalities) is responsible for water resources management affecting the agricultural sector, such as water supply and irrigation in accordance with the legislation mentioned below. The Ministry of Agriculture reports upon request to international fora. In addition Statistics Norway reports on agricultural matters to Eurostat. The most important legislation with regard to water resources management and development is the following: the Water Resources Act (replaced in 2001 the Watercourses act); the Pollution Control Act, 1981 and the Municipal Health Services Act, 1982. The Planning and Building Act (1985) facilitates coordination of national, county, and municipal activities; and provides a basis for decisions on the use and protection of the environment. Under the Act, municipalities may establish environmental goals for their water resources and the environment in the vicinity of these resources during their physical planning. River systems have been designated as a target area for regional planning and land use policy as regards natural resources. Joint land use plans for Major River systems have been drawn up by several counties. Coordinated water resource planning is for instance being implemented for the rivers Glomma, Numedalslågen, and Femund/Trysil Rivers.

Programmes and Projects: There are several plans in place for integrated land and water management and development, among others: a plan for improving water quality in the Oslo Fjord area, the most densely populated

part of the country; a plan of action against floods; the National Plan for Protection of Water Courses; and the National Master Plan for Hydro Power Resources. At present, water courses with an estimated hydropower potential of totally 35 Twh (20 % of the total hydropower potential of Norway) are protected for ever against hydro power development and other works that may have a significant impact on the “protection values.” The Government has this year started the work of expanding the protection plan and has proposed a plan for protection of the most important salmon rivers and salmon fjords. The Master Plan for the Hydro Power Resources was implemented in 1985 and has since then been revised two times. It is administrated by the Ministry of Environment in close cooperation with the Ministry of Petroleum and Energy. A national programme for improving water supply was launched in 1995 with the goal of securing satisfactory and safe water according to the EUs specific standards from all waterworks supplying more than 100 persons, i.e. roughly 85 percent of the population. This does not mean that 15% of the population have unsafe water, it is rather that some of the parameters, like water colour may deviate from EU standards. See also under **Cooperation**.

Status: Norway has an abundance of water and in almost all parts of the country and at all times supply is more than adequate for domestic, agricultural and industrial uses. 99% of the electricity generated in Norway (120 TWh\yr) is hydro-generated Most of the remaining rivers are protected from hydropower development. The power resources vary from year to year, but a large storage capacity ensures that any shortfalls remain a small percentage of the total production capacity. Eighty-seven percent of municipal water supplies are drawn from surface water. In 1994, withdrawals of ground and surface waters were 0.3% of available water. Domestic consumption was 260 ltrs/capita/day. Water supply and sanitation coverage is universal in Norway. Although most of the freshwater is of satisfactory quality, the government has during the last fifteen years been encouraging waterworks to increase the share of groundwater, for environmental reasons as well as considerations of economy and to guard against accidental public health risks from contamination. Water quality is measured with national standards based on ISO standards. According to WHO guidelines faecal coliform must not be detectable in a 100 ml sample. All freshwater will now and then exceed this level from natural causes, even in the absence of man-made pollution.

Critical loads of acid deposition from air pollution are exceeded in 117,000 km², which comprises a third of the total Norwegian land area. From 1960 to 1990, the total area with damaged fish stocks increased fivefold. Out of 13,000 fish stocks controlled, near 2,591 stocks have gone extinct and 2,914 are endangered. Acidification is mainly due to long-distance airborne pollution (SO₂, NO_x) from Great Britain and from Central and Eastern Europe. Special restrictions on land use are being used in order to protect drinking water sources from pollution. Such restrictions are compensated financially. Norway has built several wastewater treatment plants with secondary treatment (chemical purification) over the last few years, and a secondary phase is planned for all plants (with freshwater recipient) with more than 2000 person equivalents. Nitrogen pollution is not a large problem for freshwater in Norway. The capacity for waste water treatment is about 5.4 mill pe. 67% of urban sewerage is treated. For water purification, 500 new drinking water disinfection plants and 500 additional plants for colour removal are needed. At present, 65% of water is treated before used as drinking water. The target is to increase this percentage to 100%. Water supply and wastewater treatment is financed through a local fee called “Water and Wastewater” which every household is required to pay to the municipality. Due to the high national level of wages and costs the average household pays approximately 200 US\$ for water supplies and 300 US\$ for sewage services (based on figures from 2000).

Capacity-Building, Education, Training and Awareness-Raising: The ordinary educational system trains a sufficient number of experts. Due to the abundance of water no programmes of water conservation exist, but prevention of pollution, preservation of biodiversity and sustainable use of watercourses is high in the public consciousness due to information efforts both by government and the NGOs.

Information: Norway submits annual reports issues related to development cooperation to the Organization of Economic Cooperation and Development (OECD). Norway has about 670 hydrological stations covering any area from 0.5 to 40,000 sqkm. Data are collected at least daily, in many places continuously. Information concerning

water management and development is regularly collected from the agricultural sector, household sector and industrial sector. The information is distributed as reports, fact sheets, and statistics from the agencies in charge. The information is stored in electronic data banks, which may be accessed by the competent authorities only. A classification system for water quality assessment has been established and forms the basis for biological and chemical water quality criteria. Efforts are being made to establish the necessary systems to ensure efficient and systematic collection, processing, storage and retrieval of information on the quality of water resources. A national monitoring programme for water quality in lakes and rivers was initiated in 1980. The programme currently includes monitoring 1,000 lakes and determining the effects of eutrophication in 355 lakes. Discharge into the sea is monitored in approximately 20 rivers. In addition, short-time monitoring on clean-up and restoration works are also carried out.

Research and Technologies: There are several institutions that perform research and give scientific advice on issues related to water management, among others the Norwegian Institute of Water Research (NIVA), the Norwegian Institute for Nature Analysis (NINA), the National Institute of Public Health and the Norwegian Water Resource and Energy Administration (NVE). Research is mainly funded by the institutions themselves or by the Research Council of Norway. Under the auspices of the Research Council of Norway a number of research programmes are presently active in the field of freshwater management. In addition all the universities have several research projects related to water management.

Financing: These investments are among the largest that public utilities undertake. All investments are funded through the ordinary national and international financial markets and are paid back through user charges on water, sewage or energy use. Smaller investments use loans, larger projects are often funded through bond issues. The investors themselves have to choose the level of interest- and exchange rate risk they are willing to be exposed to. As for foreign aid, Norway's assistance to water resource management programmes and projects administered by multilateral organizations and by the Norwegian Agency for Development Cooperation (NORAD) amounted to approximately NOK 100 mill in 2000.

Cooperation: Norway has a small number of watercourses shared with other countries where issues of common interest are deliberated in joint river commissions. Norway is a signatory of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and has concluded several bilateral agreements concerning individual watercourses. Norway cooperates both bilaterally and through multilateral organizations with a number of developing countries. Many projects and programmes include water management. The focus in development cooperation lays more and more on strengthening of the institutional capacity in the recipient countries. Norway has for instance assisted the Zambezi River Action Plan (ZACPLAN) in Zambia, supported the setting up of the River Board in Tanzania, and indicated willingness to support the Government of Zimbabwe in its efforts to commence work on a national water strategy. Norway also supports the strengthening of cooperation between the administrations of Zambia and Zimbabwe in assessing and protecting the ecosystem in Lake Kariba and supports the Nile - initiative.

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CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS.

Decision-Making: The primary responsibility for managing toxic chemicals lies with the user. The bodies primarily involved in decision-making on the regulatory framework are the Ministry of Environment and the Norwegian Pollution Control Authority. The Ministry of Agriculture is responsible for pesticides. Reducing adverse effects caused by chemicals to health and the environment and reducing the risks to society as a whole related to the extensive use of chemicals, particularly in products, is a top priority issue in Norwegian environmental policy, along with climate problems and protection of biological diversity. Chemicals policy was substantially strengthened in 1996, when the Government reviewed existing work and proposed a more ambitious and up to date policy for chemicals, as this area was recognized as one of the major threats to sustainable development.

Norway's Action Plan for Hazardous Substances contains main strategies and concrete proposals for action with specific time limits (see Programmes and Projects). More specific policy approaches and strategies are continuously under development and subject to adjustment and review within the basic policy framework in connection with the annual budget proposals to the parliament, which also include a biannual report on the state of the environment and progress report. Through the European Economic Agreement (EEA) between the EFTA States and the European Union, Norway has implemented most EU directives and regulations regarding chemical safety, e.g. the systems for classifications and labelling of chemical substances and regulations regarding evaluation and control of new substances. In addition there are numerous regulations that prohibit or strictly regulate production, use, import, export etc. of hazardous chemicals, including hazardous wastes in the EEA-area. National regulations are often harmonized with the EU standards, but may sometimes be stricter and cover areas not regulated by the EU, e.g. a recently revised Norwegian PCB-regulation or the prohibition of short-chained chlorinated paraffin. Emissions from industrial and other point sources are mainly restricted through a system of individual permits based on the principle of integrated pollution prevention and control under the Pollution Control Act. The Pollution Control Authority has a separate unit for the control of issued permits as well as the use of chemicals and chemicals in products, the latter according to the Product Control Act, which recently was altered to include the principle of substitution as a legally binding obligation.

Programmes and Projects: Norway's Action Plan for Hazardous Substances outlines the main strategic elements:
Elimination of the most dangerous substances: Around 20 chemical substances and groups of chemical substances are on a national list on priority substances. For these substances targets have been set, either to phase them out completely or to reduce significantly the releases to the environment, before 2000, 2005 or 2010, the chemicals of most concern having the shortest time limit. The priority list will be revised and amended as new knowledge and information on the environmental properties and effects of chemical substances is made available. Norway has further adopted the "one generation goal" as formulated under the OSPAR Convention, as a national target for reduction of emissions of the most dangerous substances within one generation. This goal encompasses a broader range of substances than the priority list.

Reduction of risks related to use and production of chemicals in society as a whole: This includes a broad range of strategies aimed at reducing risks from chemical use in all sectors in society, especially focusing on the wide range of chemicals in products and their relation to health and environmental effects. Important principles in this work are the practical application of the precautionary principle and the substitution principle. Important instruments are the "observation" list for chemicals that should be avoided or substituted, increased product stewardship and industry responsibility for chemical safety, the development of integrated product policy, action taken to address special targeted groups such as children, and more adequate and accessible information to users on the content of chemicals in products and their health and environmental properties.

Better information to all actors involved about health and environmental risks and hazardous properties, especially information about chemicals in products for regular consumers. Chemicals classified as hazardous according to EU-harmonized legislation should be registered in the national Product Register, where information is updated each

year. An open database for non-confidential information about chemicals and contents of products is being prepared in order to give the public easier access to product information. Emissions from industry are published in the national pollutant release and transfer register (PRTR) administered by the Norwegian Pollution Control Authority and industry report on emissions each year. Targeted controls and campaigns are designed to increase public awareness and participation. Participation in decision-making and right to try specific cases in the courts is generally broad. Norway is a signatory to the Aarhus convention on environmental information and a comprehensive new legislation to fill legislative gaps and prepare for ratification is at present being finalized and likely to be adopted by the parliament in 2002.

In addition, contaminated sites all over Norway have been identified, and a strategy for the cleaning of contaminated sites that was presented for parliament in 1999 is in force. A strategy for the cleaning of polluted marine sediments in fjords and seashore is under development aiming at finalization early in 2002.

Status: Norwegian management of toxic and hazardous chemicals is subject to strict controls as detailed below. Long range transboundary pollution through air and ocean currents, however, poses a long term problem.

Direct industrial emissions of hazardous chemicals have been reduced between 50 to more than 95 % (depending on the substance) in the past twenty years.

Problematic emissions of POPs have mainly been PCB and dioxins/furans. PCB has been totally banned since 1980, and recently revised legislation and PCB strategy is aimed at securing that the last remaining types of PCB-containing wastes in building materials and smaller electric equipment are identified and disposed of in an environmentally safe manner. Norway made considerable progress in reducing emissions of dioxins and furans during the 1990s. The emissions were reduced with 95 percent from 1985 to 1995 and between 1995 and 2000 preliminary figures indicate that the emissions were reduced with a further 67 percent of the remaining emissions.

Norway significantly reduced the emissions of heavy metals in the 1990s. The emissions of mercury were reduced with 85 percent from 1985 to 1995 and preliminary figures indicate that between 1995 and 2000 the emissions were reduced with a further 37 percent of the remaining emissions. No leaded petrol has been sold since 1998, and atmospheric emissions of lead have been nearly eliminated. Atmospheric emissions of cadmium were reduced by 48 % between 1991 and 1997, mainly through actions taken by the metal manufacturing industry, still the main source of emissions in 1997 (44%). Process changes and waste reduction strategies initiated during the 1990s have reduced the heavy metals content of sewage sludge, and recent regimes for the collection and sorting of electric and electronic wastes expect to reduce substantially heavy metals emissions to water and air from wastes.

Some industrial emissions should still be further reduced, but the main challenge for the chemicals policy in Norway is now to reduce the emissions of chemicals from the many diffuse sources connected with the use and waste handling of products containing hazardous chemicals. The lack of knowledge and the inadequacy of traditional regulation substance by substance by the authorities, the extended use of chemicals in a vast number of products in all sectors of society, open borders and increased international trade, are formidable challenges for policy makers and the society as a whole.

Capacity-Building, Education, Training and Awareness-Raising: This is handled through the ordinary educational system. See also under **Programmes and Projects**.

Information: See under **Programmes and Projects**.

Research and Technologies: See under **Programmes and Projects**.

Financing: Each user is obliged to cover the full costs of labelling, handling and emergency preparations on their own premises, while the costs of the municipal fire and rescue services which may assist where needed is covered through municipal taxes. See also under **Decision-Making**.

Cooperation: To a large extent Norway has common legislation of chemicals and chemical safety with the EU through the EEA Agreement. Common legislation includes the systems for classification and labelling of

substances, risk evaluation, notification of new substances and restrictions on use and marketing of particular substances. Cooperation with EU, through EFTA, and through direct participation in expert groups is particularly important for Norway in this field. Cooperation in the water policy area will also have increased significance for the regulation of hazardous substances.

Norway has adopted the one generation goal. This goal was first formulated in the 4th North Sea Conference, and has since been adopted by the OSPAR Convention and lately into EU legislation. Norway takes an active part in the identification and prioritization of substances under this target, both in the framework of the OSPAR Convention and the EU.

Norway is particularly committed to the international efforts to reduce emissions from POPs and other substances, and participate actively in international Cooperation related to chemical safety. Such efforts are particularly important for the Arctic (40% of Norway's territory is within the Arctic Circle, where the Arctic Monitoring and Assessment Programme (AMAP) has shown that the main source of POPs deposition is long-range transport via air currents. Norway was one of the first countries to ratify the 1998 Aarhus Protocols on persistent organic pollutants (POPs) and heavy metals under the 1979 UN ECE-LRTAP Convention, and intend to ratify the Rotterdam and the Stockholm conventions before the end of 2001. Norway was an active participant in the negotiations leading up to the 2001 UNEP Convention on POPs (Stockholm Convention), and is also taking part in the work under the IFCS and the development of chemicals work under UNEP. Norway supported the UNEP Governing Council 21 decisions on chemicals, and further development will be followed closely. Norway is in favour of ambitious and legally binding commitments and strengthening the role of UNEP in this area.

Norway is of the opinion that increased technical and financial assistance to developing countries and countries with economies in transition is necessary for the effective implementation of and compliance with the relevant international instruments. Norway has taken an active part in the development of assistance mechanisms under the Stockholm Convention and is supportive of strengthening the role of GEF in chemical safety work at the global level. Environmental issues, and in particular chemical safety, are also prioritized in Norwegian programs for development aid.

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CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES

Decision-Making:

Hazardous Wastes: The bodies primarily involved in decision making in connection with these targets are the Ministry of Environment and The State Pollution Control Authority (SFT). The responsibility for proper management of hazardous waste lies at the point where it originates. The entity concerned has to have well thought out and documented routines and must see to it that the potential costs are covered. Norway's waste management objectives were elaborated in a comprehensive 1999 White Paper. The national targets are: to limit the rate of increase in the quantity of waste generated to below the rate of economic growth; to reduce the quantity of waste delivered for final disposal to 25% of the total quantity of waste generated by 2010; and to manage all hazardous waste appropriately, so that either it is recycled or sufficient disposal capacity is provided in Norway. Suggestions for methods and measures to be taken are to be built upon socio-economic assessments. A main priority in Norway's waste management policy is to increase industry's responsibility for the waste generated by their products.

The legislative framework for the regulation of hazardous waste is the Pollution Control Act (1981) and the Product Control Act (1976). The Regulation Concerning Hazardous Waste (1994) is the specific instrument concerning hazardous waste. The Regulation Concerning Hazardous Waste makes anyone in possession of hazardous waste responsible for ensuring that it does not cause pollution or injury to human beings or animals. It also obliges enterprises generating more than 1 kg of hazardous waste to deliver it to approved handling systems at least once a year. The regulation requires anyone who wants to handle hazardous waste obtain a permit. Furthermore, it obliges municipalities to ensure that they have adequate facilities for receiving hazardous waste from household and enterprises possessing small quantities of hazardous waste. 40 licensed operators collect most of Norway's hazardous waste. These operators have a central role in the handling of hazardous waste. During recent years, special return systems for lead and NiCd-batteries, waste oils and waste from electric and electronic equipment (WEEE) have been established.

Solid Wastes: The bodies primarily involved in decision making in connection with these targets are the Ministry of Environment and The State Pollution Control Authority (SFT). For information on Norway's waste management objectives, see above, under *Hazardous Wastes*. The legislative framework for the regulation of waste is the Pollution Control Act of 13 March 1981, and the Product Control Act of 11 June 1976. The Pollution Control Act has a general prohibition against littering and makes anyone violating the prohibition responsible for whatever clean up may be necessary. The Act gives the municipalities responsibility for collection and treatment of consumer waste. The municipalities' costs related to waste management is to be fully covered through waste management fees. The fees may be differentiated when this will stimulate waste reduction and increased recovery. The Pollution Control Act gives the industry responsibility for production waste. Based on the two acts, specific regulations for different types of waste and different questions related to management of waste have been adopted. Accordingly special deposit-return systems for different types of packaging, CFC-containing cooling equipment end of life vehicles and tires have been established. New regulations are being prepared for incineration and landfilling of waste in connection with the implementation of relevant EC-directives.

A final disposal tax was introduced on 1 January 1999 to further promote waste prevention and recovery. In 2001, this tax was NOK 314 per ton for landfilling of organic or mixed waste. For incineration the basic tax is NOK 79 per ton, supplemented with an additional tax of NOK 235 per ton. The supplementary tax is reduced according to percentage of energy recovery. As a general rule, waste destined for material recovery is not subject to this tax. The structure of the tax is under consideration.

Radioactive Wastes: The targets and decision making procedures applied to radioactive wastes differ from those applied to hazardous and solid wastes. Norway does not have large scale radioactive waste disposal problems since we do not have any large scale nuclear reactors. Radioactive materials are however used for research and for industrial and medical purposes. The location, construction, operation, and further steps of nuclear installations are mainly regulated in Norway by three legal instruments: the Planning and Building Act, administered by the

Ministry of Environment; the Act on Radiation Protection and Use of Radiation, administered by the Ministry of Social Affairs and Health, and the Norwegian Radiation Protection Authority; and the Atomic Energy Act, administered by the Ministry of Social Affairs and Health, and the Norwegian Radiation Protection Authority. The Act on Radiation Protection and Use of Radiation entered into force 1. July 2000 and replaced the previous Radiation Protection Act from 1938. Regulations made pursuant to the former Radiation Protection Act are being still in force but they are being reviewed in order to elaborate new and updated rules.

Programmes and Projects:

Hazardous Wastes: See below, under *Solid Waste*.

Solid Waste: The government has invited participants (industry, municipalities, consumers and environmental NGOs) to take part in a committee to advice on further measures to reduce waste generation. The committee will work for one year. Another five-year programme aimed at increased recycling of wet organic waste (ORIO) is established in collaboration with the waste and agriculture sectors. In addition several projects and programmes concerning solid and hazardous wastes are financed through more general sustainable development and integrated product policy initiatives under GRIP (the foundation for sustainable production and consumption). An example is the Eco-build program (Øko-bygg). A cooperative information programme initiated by different Producer Responsibility Organizations, LOOP, is supported financially.

Radioactive Wastes: See under **Cooperation**.

Status:

Hazardous Wastes: Norway currently generates about 660,000 tons of hazardous waste per year. The amount of hazardous waste with unknown disposal is about 30,000 tons. Strengthening of municipal collection is essential in order to improve collection even further in the future. The Norwegian Waste Management Company Ltd. (NOAH), which is jointly owned by the Government and the industry, was established in 1991. It ensures that Norway has solutions for handling almost all types of hazardous waste generated in Norway. In 1999 about 50,000 tons were exported, mainly for recovery.

Solid Wastes: Total waste generation (including household, industrial, special and fish waste) was 6.5 million tons in 1998 (6.4 million tons in 1996). It is expected to increase by 22% between 1996 and 2010, consistent with GDP growth. Total household waste generated was 1.0 million tons (240 kg/capita) in 1992 and 1.4 million tons (310 kg/capita) in 1999. It increased 38% between 1992 and 1999 and is expected to increase another 14% between 1999 and 2010. Per capita generation is expected to reach 360kg/capita in 2010. Norway has set an ambitious target of 75% recovery by 2010 of waste generated, either through material or energy recovery. In 1996, around 57% of waste generated was destined for material or energy recovery. Developments during the 1990s were very positive. Recovery of municipal waste in 1992 was around 20%; in 1999, it was 47%. The waste material recovery rate has increased rapidly. In 1999, it was 44% for paper and cardboard, around 30% for wood waste, 36% for wet organic waste, 2% for plastics, 83% for glass and around 80% for metals. Currently 43% of waste is still sent to final disposal, but this share is targeted to be reduced to 25% by 2010. Securing that existing measures achieve full effect as well as adoption of some new measures mentioned above is essential in order to reach the target.

Radioactive Wastes: In Norway, radioactive waste is generated from the operation of two research reactors at the Institute for Energy Technology (IFE) in Halden and Kjeller; and from the use of radionuclide in research, medicine and industry. Low and intermediate level waste is presently conditioned and stored at IFE. A process to select a suitable site for a repository of low and intermediate level waste in Norway has been under way since 1989. The concept of a combined storage and disposal facility and the selection of the Himdalen site, located not far from IFE's waste management facilities in Kjeller, have been selected.

Capacity-Building, Education, Training and Awareness-Raising:

Hazardous Wastes: The ordinary educational system trains a sufficient number of experts and additional tuition is given by the companies concerned. In addition government has some activities as detailed above.

See under **Programmes and Projects**.

Solid Wastes: See under **Programmes and Projects**, and above, under *Hazardous Wastes*.

Radioactive Wastes: No information available.

Information:

Hazardous Wastes: See under **Programmes and Projects**.

Solid Wastes: See under **Programmes and Projects**.

Radioactive Wastes: No information available.

Research and Technologies:

Hazardous Wastes: See under **Programmes and Projects**.

Solid Wastes: See under **Programmes and Projects**.

Radioactive Wastes: See under **Status**.

Financing:

Hazardous Wastes: See below, under *Solid Wastes*.

Solid Wastes: All costs are carried by the entity where the costs arise. The principle of Polluter pays is pursued. Some general subsidies are offered through programmes (see above under Programmes). Subsidies to private or municipal investments are being phased out.

Radioactive Wastes: No information available.

Cooperation:

Hazardous Wastes: Norway signed the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1989. In 1990, it was one of the first countries to ratify the Convention. Norway also ratified the Basel ban amendment in 1997. The amendment prohibits exports of hazardous waste from OECD to non-OECD countries, whether destined for recovery or final disposal. Norway is active in the work undertaken under the Convention. The Norwegian Regulation on Transboundary Shipments (1994), which implements the Basel Convention, is the main Norwegian legislation regulating transboundary movements of hazardous wastes. Norway has established all procedures necessary to comply with the obligations in the Basel Convention. There is close cooperation between the authorities in the Nordic countries in the fields of clean technology and waste. Norwegian authorities are participating on several working groups exchanging views and working towards achieving common positions and solutions to hazardous waste-related questions. Norway participates actively in different EC expert groups on waste through the EEA-agreement.

Solid wastes: There is close cooperation between the authorities in the Nordic countries in the fields of clean technology and waste. Norwegian authorities are participating on several working groups exchanging views and working towards achieving common positions and solutions to hazardous waste-related questions. Norway is actively taking part in the work under the Basel Convention and is also participating actively in the Organization for Economic Co-operation and Development's (OECD) waste management group. Norway participates actively in different EC expert groups on waste through the EEA-agreement.

Radioactive wastes: The Norwegian Assistance Programme for Nuclear Safety is focused on measures to increase nuclear safety and prevent radioactive pollution, primarily in North-West Russia. A total of US\$35 million has been earmarked for projects in 1995 and 1996. Approximately US\$15 million is expected to be available in 1997. A number of projects has been identified in four priority areas: safety measures at nuclear installations; management and storage of spent uranium fuel and radioactive waste; radioactive pollution of the Northern Seas; and arms-related environmental hazards. With this Programme, the Norwegian Government wishes to address one of the most serious threats to security, human health, and the environment. Emphasis is put on increasing international cooperation and coordination, including Norwegian-Russian NGO cooperation. In addition, Norwegian authorities play an active part within the International Atomic Energy Agency (IAEA), LC-72, the Oslo and Paris Commissions (OSPAR), the Organization for Economic Co-operation and Development (OECD/NEA), and other international fora.

In the context of the UN-CSD as well as in the IAEA Norway has proposed that new regulations are introduced that require states that wish to transport radioactive materials at sea notify and consult with states whose territory might be adversely affected in case of an accident. This is especially important for Norway's 2500km long coastline.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: No information available.

Children and Youth: No information available.

Indigenous People: No information available.

Non-governmental Organizations:

Local Authorities: No information available.

Workers and Trade Unions: No information available.

Business and Industry: No information available.

Scientific and Technological Community: No information available.

Farmers: No information available.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: All ministries are responsible for integrating environmental considerations into their activities. They are required to report on their environmental efforts and the impact of these in their budget proposals.

The main actors in allocating funds in Norway are individuals and private and public companies. The public sector receives approximately 40% (kontroller). of the GNP through taxes. Of this a large proportion is earmarked for health, education, pensions and social services. The administrative cost of government is low compared to the OECD average (kontroller).

In October 1999 the Government presented a white paper on the Government's environmental policy and the state of the environment in Norway (Report to the Storting No. 8 (1999-2000)). This describes environmental trends and the Government's overall environmental efforts, based on national targets for each of eight environmental priority areas. A similar report will be submitted to the Storting each year. In 1994, the Government appointed a Green Tax Commission to evaluate the possible environmental benefits and positive impact on employment of a shift in the burden of taxation away from labour and towards pollution and the extraction of resources. The Commission presented its report Green Taxes - Policies for a Better Environment and High Employment in June 1996, and proposed a number of new environmental taxes and increases to others. In April 1998 the Government submitted Proposition no. 54 to the Storting (1997-98) on Green Taxes.

Programmes and Projects: The Storting agreed to most of the Government's proposals and the following new environmental taxes were introduced with effect from 1 January 1999: The CO₂ tax base was widened to include the supply fleet in the North Sea, domestic air transport and coastal goods transport at a rate of NOK 100 per ton CO₂. The processing industry, the fisheries and international air transport are still exempt from the CO₂ tax. For other sectors where the CO₂ tax is levied, the rates range from NOK 397 per ton to NOK 74 per ton. In response to the Proposition on Green Taxes and the white paper on Norwegian implementation of the Kyoto Protocol (Report to the Storting No. 29 (1997-98)), the Storting also asked the Government to appoint a commission of experts to devise a domestic emission trading system based on quotas for greenhouse gases in Norway. The commission presented its report to the Ministry of the Environment on 17 December 1999. A tax on final disposal of waste was introduced to reduce emissions of the greenhouse gas methane to water, soil and air. Waste delivered to landfills or incinerators will be taxed at a rate of NOK 300 per ton. Incinerators that utilize waste for energy purposes will pay a lower tax but a minimum of NOK 75 per ton.

Status: On the basis of a Government proposal in the Revised National Budget 1999, the Storting has decided that NOK 1 billion of the Petroleum Fund's capital is to be transferred into a separate fund which is to be managed according to environmental guidelines. The value of the Petroleum Fund at the end of 1999 was estimated to be more than NOK 200 billion. In 1998, the Government Petroleum Fund made investments in more than 2000 companies, mostly in the USA, Canada and the UK and other western European countries. Companies that satisfy a detailed set of environmental criteria will be eligible for investments from the separate environment fund. The criteria may include requirements relating to the achievement of environmental or the issue of environmental reports by the companies. The Government also intends to consider criteria relating to eco-efficiency when the data basis has been sufficiently improved. Examples of eco-efficiency criteria could be levels of harmful emissions, energy consumption or material consumption per unit of production. The size of the environmental fund is to be reconsidered after three years with a view to increasing its capital. Total environmental expenditure in the state budget from 1994 to 2000 is estimated as follows: 1994: NOK 17.500 million (US\$ 2500 million); 1996: NOK 18.000 million (US\$ 2570 million); 1998: NOK 19.400 million (US\$ 2775 million); and 2000: NOK 19.600 million (US\$ 2800 million). In addition to these figures, the budget contains information regarding expenditures, which are motivated mainly and partly by environmental considerations.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Cooperation: Norwegian development assistance over and above the 0.7 per cent target for Official Development Assistance (ODA) amounts to US\$ 400-500 million annually, and was in 1998 1.321 billion US\$, or about 0.91 per cent of GDP. The Government's aim is to reach 1 per cent of GDP by 2005. Since 1987, the Government has given high priority to the need to integrate environment and development issues. In 1993, the Ministry of Development Cooperation adopted a new policy document on the follow-up to United Nations Conference on Environment and Development (UNCED). The main recommendation is that priority should be given to supporting partner countries' own efforts to follow-up Agenda 21. Special emphasis is being given to the following issues: the promotion of ecologically sound management of natural resources, particularly by supporting sustainable development in the primary sector; population and family planning; strengthening institutional capacity and supporting human resources development; development of methods and planning tools which can help to integrate environment and development objectives; and environmental programmes. Sustainable development and poverty eradication are the overriding aims of all Norwegian development assistance. The funds available for specifically environmental purposes in developing countries have been gradually increasing since 1992. Approximately US\$ 1 billion, or about 15 per cent of bilateral development assistance, was in 1998 disbursed for sustainable development activities, including population programmes. Adjustment programmes and Norway's assistance in this area continue to focus on the effects of the programmes on poverty, income distribution and the social situation in the countries concerned. Norway also urges partner countries to take environmental considerations more fully into account in the design of adjustment programmes. In addition, NOK 165 million was contributed to the Global Environment Facility (GEF) during the pilot phase and another NOK 220 million for the period 1994-1997. For 1998-2002, a commitment has been made in the order of NOK 285 million. Foreign Direct Investment (FDI) in Norway is subject to the same environmental regulations, for example on pollution control that applies to domestic investments. This is particularly visible offshore, where all companies operating on the Norwegian continental shelf are taxed on CO₂ emissions from offshore platforms as described above. In connection with direct Norwegian private investments in developing countries NORAD may finance environmental investments (on grant terms), which are needed to ensure compliance with Norwegian environmental standards. Norway regularly reports to the Development Assistance Committee of the Organization for Economic Co-operation and Development (OECD/DAC) on ODA. Statistical information is therefore organized according to DAC sector codes.

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: At the governmental level, responsibilities for science related to sustainable development are organized as follows: The Ministry of Environment has direct responsibility for environmental research and indirect overall responsibility for integration of environmental considerations and environmental research themes in research funded directly by other ministries and sectors. The Ministry of Foreign Affairs has a sector responsibility for research related to foreign affairs policy areas. In 1999 the Ministry of Foreign Affairs developed a *Strategy for strengthening research and higher education in the context of Norway's relations with developing countries*, defining the main priorities for the various support schemes for strengthening research and higher education in the South and for development research in Norway. The Ministry of Education, Research and Church affairs has a special responsibility for basic and long-term research, as well as for higher education. Other ministries hold responsibility for environmental research within their areas. Decision-makers from both Government and local administrations are actively involved in the concerned programme committees of the Research Council of Norway. It is within the mandate of the Research Council of Norway, Division of Environment and Development, to promote environmental research, development research and research in the interface between environmental and social conditions. Development research is defined as “research on processes of social change, designed to improve the knowledge base for development cooperation, poverty reduction and the promotion of interpersonal understanding.” The special needs of the poor should therefore be an integral part of planning and implementation of research in this area. A series of conferences on sustainable development has been established to facilitate a good dialogue between scientists and decision-makers in public administration and in industry. A summing up conference will be held in March 2002 under the heading: *Poverty and Environment*. Scientists are also commonly invited to participate in the elaboration of policy papers, which form the basis of the development of new rules and regulations.

Programmes and Projects: A long range of programmes and projects relevant to Agenda 21 are financed through the Research Council of Norway or by the R&D-institutions themselves. Current Research Council programmes of special interest to Agenda 21: Biological Diversity – Dynamics, Threats and Management; Climate and Climate Change; Pollutants: Sources, dispersal, effects and efforts; Changing landscapes. Use and management of cultural environments and natural resources; Sustainable Production and Consumption; Social Science Research in Energy, Environment and Technology; Towards Sustainable Development: Strategies, Opportunities and Challenges; Programme for Industrial Ecology; Fisheries in Developing countries; the multilateral system in the field of development; and, Globalization and marginalization: Multi- and interdisciplinary research on development paths in the South. The strategic programme for Research and Documentation for a Sustainable Society (ProSuS) has the aim of conducting strategic research and documentation for the realization of a sustainable society at the local, national and global levels, and monitoring Norway's development with respect to the Rio Declaration, Agenda 21 and the guidelines of the United Nations Commission on Sustainable Development.

Status: The overall goal of environment and development research is to promote necessary conditions for a sustainable development. A Strategic Plan for Research on Environment and Development was adopted by the Board of the Research Council in June 1996. The Plan had a five-year perspective and covered all research areas under the Research Council of Norway. The vision of the Council was to make Norway a ‘role model’ for the production of knowledge about environment and development. Goals and priorities set down in the Strategic plan for research on Environment and Development were operationalized in 1999 in the Plan of Action for the Division of Environment and Development. Based on the six priority areas of the Strategic plan four thematically oriented main priority areas were defined: Natural processes and man-made changes; Management and use of natural resources and the cultural environment; Framework conditions for sustainable development; and Development and global issues. Three priority horizontal areas were also identified: Polar research; Research connected to developing countries and countries with emerging economies; and, Values for a sustainable development.

Capacity-Building, Education, Training and Awareness-Raising: Universities and state colleges have given increased attention to science for sustainable development. In general this has been accomplished through integrating environment and development issues into their ordinary activities through establishing courses and research activities such as “environmental and developmental economics,” “environmental physics,” and “environmental technology,” etc. All universities have established interdisciplinary centres for environment and development.

Information: All universities, university colleges and state colleges are supposed to disseminate their own findings. The Programme for Research and Documentation for a Sustainable Society (ProSuS) disseminates information on research directed toward sustainable development and on global ethics.

Research and Technologies: Environmental research is a prerequisite for meeting global and national challenges related to the carrying capacity of nature, bio-diversity, and sustainable production and consumption. During the last decade, environmental research has been a priority in the Government’s general research policy. In the Government’s White paper on research, approved by Parliament in 2000 research in the intersection between energy and environment is one of four prioritized themes, and environment should be an integrated perspective in all areas of research. Public spending on environmental research has increased, and environment and development issues have become an integrated part of the national research system. Science is an important instrument in producing the knowledge needed to make wise and sound decisions for achieving a more sustainable development. There are still many knowledge gaps to be filled. The Government therefore still gives priority to science for sustainable development.

Financing: Research is mainly funded by the institutions themselves or by the Research Council of Norway.

Cooperation: The Ministry of Foreign Affairs and the Norwegian Council for Higher Education have concluded an agreement concerning competence-building at university institutions in developing countries. In development cooperation programming, scientific institutions are used as advisers. The Norwegian research and education communities are becoming increasingly involved in cooperation with institutions in developing countries. The Strategy elaborated by the Ministry of Foreign Affairs to strengthen know-how and research concerning Norway’s relations with developing countries has been instrumental in these efforts and has contributed to increased cooperation between the Norwegian Council for Higher Education and the Research Council of Norway. Norway, at governmental level currently reports on issues related to Science for Sustainable Development to the following intergovernmental bodies: Framework Convention on Climate Change; Convention on Biological Diversity; Man and the Biosphere Programme (UNESCO); Intergovernmental Oceanographic Commission (UNESCO); OECD.

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: No information available.

Programmes and Projects: See under the heading **Capacity-Building, Education, Training and Awareness-Raising** in the various chapters of this Profile.

Status: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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**CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR
CAPACITY-BUILDING IN DEVELOPING COUNTRIES.**

This issue has been covered either under Chapter 2 or under the heading **Cooperation** in the various chapters of this Profile.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the UN System.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

This issue has been covered under the heading **Cooperation** in the various chapters of this Profile. However, you will find below a list of International Legal Instruments that Norway has ratified.

For Norway, a listing of major international agreements and conventions entered into and relevant to Agenda 21 include: Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London, 1972); International Convention for the Prevention of Pollution from Ships (MARPOL, 1973); Convention on Long-Range Transboundary Air Pollution (Economic Commission for Europe {ECE}, 1979); International Convention on Oil Pollution Preparedness, Response and Cooperation (London, 1990); Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR Convention, 1992); Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR, 1971); Convention for the Conservation of European Wildlife and Natural Habitat (Bern, 1979); the Antarctic Treaty System with related conventions and protocols; ECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991); Bilateral Environment Agreements with all neighbouring countries; Framework Agreements on Development Cooperation with all partner countries; World Trade Organization Agreement (Marrakesh, 1994); European Economic Area Agreement; Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea (UNCLOS) relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (New York, 1995); and International Labour Organization Conventions on, for example, safety measures and health inspections.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: Environmental information management is coordinated by the State Pollution Control Authority (SFT), (www.mprojeiljo.no). They are also the contact point vis-à-vis the European Environment Agency. Relevant data on economic, social and environmental conditions are collected and analyzed by Statistics Norway (www.ssb.no). Information on the entire circumpolar Arctic area is collated by the Arctic monitoring programme (AMAP) in Oslo.

The information needed for policy making purposes is sought integrated in the Government Long-Term Programme, which is published at regular intervals and describes the Government's plans for the next four-year period and outlines the perspectives for the next ten years. Environmental issues are integrated into the programme. "The Government's Environmental Policy and the State of the Environment" is a white paper that is published every second year. The purpose of the white paper is to describe trends in environmental conditions and the most important elements of the environmental policy. It analyzes the relationship between environmental conditions and trends, environmental pressures and important socio-economic trends. Major projects have to be subject to an environmental assessment while the new EU directive on Strategic Environmental Assessment will be incorporated into Norwegian law so that programmes can also be assessed. All information from such evaluations is publicly available.

Programmes and Projects: Research and compilation of new data is commissioned as the need arises.

Status: The general availability of data is satisfactory, but some environmental indicators and assessments are still being developed.

Capacity-Building, Education, Training and Awareness-Raising: The standard education system takes care of the need for general knowledge as well as the training of experts. In addition the Ministry of Environment publishes guidelines and case studies to assist industry, local authorities and the public in making decisions.

Research and Technologies: No special needs are foreseen beyond what is commonly available. All information available is made accessible on the Internet at www.miljo.no and the intention is that those who need particular data sets shall be able to download these directly from the data provider without the need for any intermediary steps.

Financing: Each agency covers its own costs. By law all entities, public or private, are obliged to provide information to Statistics Norway. For larger projects the initiator has to pay the full costs of environmental assessments.

Cooperation: Norway is a member of the EEA, which collects and analyses environmental data from the EU, the EFTA countries as well as from Eastern Europe. Norway also contributes to AMAP (see above) and hosts the UNEP GRID-centre in Arendal. We are in the process of ratifying the ECE- Aarhus convention which lay down rules for open information to the public, public participation in decisions and access to justice in this regard.

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CHAPTER: INDUSTRY

Decision-Making: The policy for ecologically sustainable industrial development is outlined in the Report “Environmental Policy for a Sustainable Development.”

Programmes and Projects: Some environmental programmes which stimulate the use of ESTs are: the programme “Responsible Care,” which is implemented by 400 companies within the processing industry; the “MILJØSOK” programme, which aims at reducing the environmental impacts of the petroleum activities i.a. by describing relevant ESTs that may be applied.

Status: The most serious problems pertain to the uncertainty associated with the actual impact of the pollutants from consumer products. In the European market alone, about 100,000 chemicals are registered. Only a small percentage of these have been studied with regard to their potential hazard. Pollution of freshwater by industry is no longer a major problem. Emissions from point sources are greatly reduced. The food and beverage industries are main users of freshwater. Ninety-nine percent of Norway’s electricity production is based on hydroelectric power. Norwegian industry could be defined as green by the use of clean electricity.

Capacity-Building, Education, Training and Awareness-Raising: See under the heading **Capacity-Building, Education, Training and Awareness-Raising** in the various chapters of this Profile.

Information: The Government will further develop a national result monitoring system. This will provide the necessary basis for being able to control development in a sustainable direction, for instance by making it possible to see the aggregate environmental impact of the activity within various sectors in an overall context. Furthermore, it will provide a basis for a goal-oriented and cost-effective environmental policy across the sectors, and ensure that environmental concerns are integrated in sector policies in line with the principle of sectoral environmental responsibility. The results will be published on an annual basis as the “Environmental Profile of the Government and the Environmental State of the Nation.” The result-monitoring system will be further developed and concretely defined in cooperation between the affected ministries and the municipal sector.” Norway annually reports issues related to industrial development to the Organization of Economic Cooperation and Development (OECD). The report for 1997 covers issues such as industrial policy and economic conditions.

Research and Technologies: A programme for environmental technology was established in 1990 by the Ministry of Industry and Energy in cooperation with the Ministry of Environment to create a basis for industrial growth and prevent environmental degradation. Over the last three-to-four years, Norwegian industry has increased its focus on ESTs as an alternative to “End-of-pipe”-solutions with regard to both production processes and products. The use of life-cycle analysis to identify the specific needs for ESTs has also increased significantly.

Financing: As of 1998, the Norwegian Pollution Control Agency will grant economic support to the development of sustainable production and consumption within industry. The main objective of these grants is to encourage the use and development of ESTs.

Cooperation: The European Union’s Eco-Management and Audit Scheme (EU EMAS) was implemented by Norway in 1995 (EU Council regulation 93/1836).

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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