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COUNTRY PROFILE



UNITED NATIONS

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.

TABLE OF CONTENTS

CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES.....	1
CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES - TRADE.....	2
CHAPTER 3: COMBATING POVERTY.....	3
CHAPTER 4: CHANGING COMSUMPTION PATTERNS.....	4
CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY.....	5
CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT.....	6
CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY.....	7
CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH.....	8
CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT.....	9
CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING.....	10
CHAPTER 9: PROTECTION OF THE ATMOSPHERE.....	12
CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES.....	13
CHAPTER 11: COMBATING DEFORESTATION.....	14
CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT.....	15
CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT.....	16
CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURALDEVELOPMENT.....	17
CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY.....	19
CHAPTER 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTHECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING.....	21
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.....	22
CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES.....	23
CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS.....	25
CHAPTER 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES.....	26
CHAPTER 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS.....	28

CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS.....	31
CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT.....	32
CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING.....	33
CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES.....	34
CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS.....	35
CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS.....	36
CHAPTER 40: INFORMATION FOR DECISION-MAKING.....	37
CHAPTER: INDUSTRY.....	38
CHAPTER: SUSTAINABLE TOURISM.....	39

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: Environmental projects are a prominent part of international cooperation with Ethiopia. Wildlife, biodiversity, forest conservation, pollution control and waste management are some of the areas presently receiving donor support in the country. But the inflow of resource was twenty-five percent less than what had initially been envisaged by the government. Weak project implementation capacity, lengthy donor disbursement procedures, and conditionalities that lack sufficient flexibility are among the major problems that can account for this.

The assistance programme by the *World Bank* is very wide ranging, but it has increased its focus on economic reform, food security, economic infrastructure (roads, energy), and the social sectors. The *African Development Bank* is also active in a range of sectors, including health, education, water and roads, but has an increasing focus on economic reform and food security and agriculture.

USAID concentrates its support in food security and agriculture, education, health, HIV/AIDS and population/gender issues. *Japan* has a clear focus on a limited number of sectors: food security and agriculture, roads, water and sanitation, and education.

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: The country's desired fast growth requires a significant amount of resources that the economy may not be able to generate. External finance would, therefore, enable the economy to make up for the saving and foreign exchange gaps. Foreign financing plays a large-scale resource role to meet the short-term transitional costs of reform and to introduce economic liberalization and stabilization measures. These foreign financial requirements are expected to be covered from bilateral and multilateral sources in the form of grants and loans. However, this is uncertain since, in Agenda 21, developed countries were committed to contribute 0.7% of their GDP annually for sustainable development, and in practice, this target was never achieved and aid to least developing countries (LDCs) is now less than 0.25%.

As long as efforts in increasing absorption capacity are improved, the country can continue to enjoy significant assistance from overseas development assistance (ODA) and credit from international financial institutions. For the four-year period of 1995–1998, Ethiopia received development assistance averaging 13.4 percent of GNP.

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

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.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: Various policy measures to combat poverty have been spelt out, of which the long-term economic development strategy, the Agriculture Development-Led Industrialization (ADLI), is the most important one. The aim of this strategy is to help Ethiopia achieve sustainable economic growth and equity, including regional equity and self-reliance or independent national development.

The strategy currently in the course of adoption, namely the "Poverty Reduction Strategy", is an important step towards the realization of this long-term economic development of the country on a sustainable basis. The enabling policy environment and the implementation of the finalized Poverty Reduction Strategy can provide major opportunities for combating poverty in the country.

Programmes and Projects: No information available.

Status: The outstanding challenge for Ethiopia, which has existed for a long time, remains the difficulty of achieving improvement in the standard of living of the population in the face of rapid population growth. The Household Income, Consumption and Expenditure Survey (HHICE) shows that, although poverty is widespread in the country, it is more prevalent in the rural areas where forty-seven percent of the population is poor compared to thirty-three percent in the urban areas. The level of satisfaction in the basic needs of shelter, health and education is very low.

There are many constraints facing the fight against poverty, including a dearth of food aid, inadequate health services for the rural poor, and inadequate social infrastructure (schools, water supplies, high rates of illiteracy). Weak technical capacity and poor financial resources are also major constraints. Social and natural calamities both contribute to maintaining the pervasiveness of poverty in Ethiopia.

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 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: The majority of Ethiopians do not consume resources even at the level that meets their basic needs. There have been some achievements in the delivery of safe water, the provision of energy for lighting and cooking, and the improvement of sanitation and waste management. However, much more can also be done to improve the efficiency of the delivery and use of the resources available.

The households using unclean or unsafe sources of drinking water take it from rivers, lakes, and unprotected wells and springs. Safe drinking water comes from protected wells, whether piped or not, and from treated water supply system. With respect to energy for lighting, most of the households use kerosene, and electricity accounts for a very small percentage of the overall energy use. In 1996, kerosene was predominantly used for lighting (68percent) and electricity served to light only 9.3 percent of the households. Other sources comprised 23 percent. In 1998, the situation changed only slightly. For cooking, 76 percent of the households used firewood, kerosene accounted for 2.6 percent, while charcoal, butane, gas, and electricity constituted 0.8, 0.4, and 0.5 percent, respectively. Other sources of fuel for cooking served 1.7 percent of the households.

In urban centres, a large proportion of the households use pit latrine toilets while a very small proportion use flush toilets. Members of the vast majority of the rural households defecate directly in fields or forests; some use pit latrines and a very few use flush toilets.

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 4: CHANGING CONSUMPTION PATTERNS – ENERGY

This issue is covered in the previous **Chapter**.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS – TRANSPORT

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 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: The adoption of the National Population Policy in 1993, with the major goal of harmonizing the rate of population growth and the capacity of the country for the development and rational utilization of natural resources, is meant to maximize the level of welfare available to the population over time. For the purpose of coordinating the implementation of this policy, the government established the National Office of Population (NOP) at the federal level, and Regional Offices of Population at the regional level. In 2000, awareness of modern methods of family planning among women of reproductive age was 80.8 percent against 63 percent in 1990. Health facilities are being expanded in rural areas and RH/RP (reproductive health/reproductive planning) services integrated into existing health facilities.

Programmes and Projects: No information available.

Status: Rapid population growth, attributed mainly to the high fertility rate in the country, is one of the major problems for sustainable development in Ethiopia. According to the National Family and Fertility survey conducted in 1990, the Total Fertility Rate (TFR) was 7.7 children per woman, and the annual growth rate of the population of the country was 3 percent. Rapid population growth increases the demand for resources and the rate at which these resources are exploited.

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 health sector should be the most important social service sector in a country. The Government plans to realize its health development objective through a twenty-year health development strategy, with a series of five-year investment programmes, of which the first Health Sector Development Programme (HSDP) covered the period 1997/98 to 2001/02. Health and development are intimately interconnected. The principal objectives are: to meet the basic health needs of the rural, semi-urban and urban populations; to provide the essential specialized health services; and to coordinate the involvement of citizens, the health and other health-related sectors, and relevant non-health sectors in seeking solutions to health problems.

Programmes and Projects: No information available.

Status: By 2002, the change to a decentralized regional system of health care was well underway with the larger and better organized regional governments having made considerable improvements to their health care systems. In Ethiopia, an estimated 60 to 80 percent of health problems are due to infectious communicable diseases and nutritional problems.

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 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: The Capacity-Building for Sustainable Urban Development in Ethiopia Project has the objective of assisting the Government in developing a well-coordinated urban development strategy and operational guidelines for regional and local municipalities. This Project is focusing on urban management, housing development, integrated infrastructure development, municipal finance management and upgrading of institutional capacity. It is designed to enhance the capacity of local authorities to address poverty reduction and sustainable human settlement development, and to prepare a National Urban Development Strategy and Implementation Framework.

The National Urban Development Strategy will be based on the national policy framework and local governments' experience of preparing local development strategies for urban centres.

Programmes and Projects: The Market Towns Development Project (MTDP) is one of the more recent projects focusing on housing and related basic services in urban development. The Low-Cost Housing Project provides major services, which include: support to municipalities to solve their housing problems; training in basic construction trades and in modern technologies; training in construction and project management as well as in housing design; the provision of access to credit for housing; training in enterprise promotion for new local contractors, in assessment of housing projects, and in the elaboration of housing strategies and the implementation of initiatives to develop public-private partnerships. The Urban Field Development Pilot Project (UFDE/P.P/) was intended to provide easy access to urban land and generate employment opportunities in low-income urban settlements. Plots for housing were allotted to selected candidates for Urban Field Development Activities.

Status: A few urban centres account for a large proportion of the total urban population. The national urban system is dominated by the only big city, Addis Ababa, with a limited number of intermediate urban centres and numerous small towns characterized by the absence of a well-structured urban hierarchy. The 1996 tenure status of households in urban areas showed 52 percent owner occupancy, 41 percent rental occupancy, 6.9 percent rent free and 0.1 percent other forms of occupancy, while in 1998 the percentages became 46.9, 45.5, 6.0 and 0.3, respectively.

The task of providing adequate housing and related facilities for the rapidly expanding urban population is indeed burdensome. The majority of the urban populace in Ethiopia live in traditional type non-planned housing with low levels of services. Studies have been undertaken in all nine regional states and one urban administration in order to identify and assess urban settlement problems. The problems relate to urban infrastructure and services like housing and access to basic facilities, urban environment and sanitation, urban land management, and to socio-economic conditions- e.g., poverty and unemployment, legal and institutional problems, and problems of resource mobilization problems. The studies also indicate that poor or inadequate access roads and drainage are serious urban infrastructure problems. It is also appreciated that an overall strategy for settlement development in both rural and urban areas is required.

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

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: In Ethiopia, development activities in the past took virtually no account of environmental issues in development planning. Not only has a comprehensive Environmental Policy for the country been adopted, but also the EPA has been actively involved in assisting other sectoral policies to use environmental protection as a basis.

Depending on their affinity to the environment, quite a number of sectoral policies address environmental concerns directly or tangentially. These are:

The National Population Policy of Ethiopia (April 1993);
 The National Agricultural Research Policy and Strategy (October 1993);
 The National Science and Technology Policy (December 1993);
 The Health Policy (1993), the Energy Policy (1993), the National Health, Science and Technology Policy (June 1994);
 The National Drug Policy (September 1994);
 The National Policy on Disaster Prevention and Management (1997);
 The National Policy on Biodiversity Conservation and Research (1998);
 The Ethiopian Water Resources Management Policy (1999); and
 The National Fertilizer Policy (1999).

The National Science and Technology Policy, in its natural resources development and environmental protection section, aims to promote the conservation of natural resources and environmental protection. The Health Policy places a premium on environmental health. The National Health Science and Technology Policy includes an item that promotes “environmental health by studying health problems associated with industrial and modern agricultural practices, and other [sources of] environmental pollutions”, and a second that aims to study and devise appropriate measures to promote occupational safety and health. The Ethiopian Water Resources Policy focuses on water quality management and water supply for industry. The policy also envisages the issuing of water pollution prevention and control strategies.

In Environmental Legislation the most salient achievement is Proclamation 9/1995, which established the Environmental Protection Authority. Although environmental legislation, i.e., laws providing legal tools specifically meant for environmental management and regulation, are yet to come, there are proclamations that are sectoral in orientation which address various environmental concerns. Some of the Regional governments have established by law their own agencies for environmental protection.

Some of the Environmental Laws in the making are: a Draft Proclamation on Institutional Arrangements for Environmental Protection, a Draft Environmental Impact Assessment (EIA) Proclamation, and a Draft Pollution Control Proclamation.

Programmes and Projects: No information available.

Status: No information available.

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

Information: One of the major tools for assessing the relationship between environmental and developmental concerns is EIA. The development of EIA is indispensable to effectively implement the Environmental Policy of Ethiopia and properly discharges EPA's main duties. Sectoral EIA Guidelines have been formulated to assist in the identification of major environmental concerns in sectoral development planning and implementation.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 9: PROTECTING THE ATMOSPHERE

Decision-Making: In Ethiopia, the National Meteorological Services Agency (NMSA), by virtue of Proclamation No. 201 of 1980, is entrusted with the monitoring of the atmosphere, including the provision of meteorological and climatological services. NMSA is also mandated to coordinate issues of climate change and ozone layer depletion. Ethiopia ratified the UNFCCC on 5 April 1994. An *ad-hoc* committee, the National Climate Change Steering Committee, composed of representatives from governmental, non-governmental, and academic/research institutions has been formed in 1998 to oversee the implementation of the UNFCCC. A National Ozone Committee has also been established. A national GHG (greenhouse gases) inventory and a climate change impact and mitigation study have been carried out. A wide variety of activities have been undertaken in order to increase awareness on climate change and ozone depletion. These include workshops, seminars, lectures, the production of brochures, posters, calendars, organizing painting competitions, mass media programmes, etc.

Programmes and Projects: No information available.

Status: Some of the major constraints are: inadequacy of national coverage of meteorological and climatological stations for effective atmospheric monitoring; weak data generation, gathering, archiving and analysing capacity; inadequacy of training and technical expertise in the areas of climate change and ozone depletion; low level of awareness about climate change and ozone depletion among policy makers, professionals and the general public; weakness of research in the area of atmospheric sciences, climate change and ozone depletion; lack of access to environmentally friendly technologies, etc. Capacity-building in terms of enhancing data collection and monitoring capability, developing and implementing awareness and training programmes/projects on climate change and ozone depletion, establishing and/or strengthening national institutions for technology transfer and the development of local research capability, are indispensable for overcoming these constraints.

Ethiopia is highly vulnerable to climate variability. Climate change has adverse impacts on various socio-economic activities, particularly agriculture, water resources, forestry, human health, biodiversity and wildlife. Ironically, rural Ethiopia's impact on the atmosphere is insignificant, and Ethiopia is basically rural.

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

Decision-Making: Until 1992, the Ministry of Agriculture had a Land Use Planning and Regulatory Department (*LUPRD*), which was responsible for setting up land use plans to regulate land management activities. Its priority was increasing crop productivity per unit area vis-à-vis expansion of arable land into traditionally non-cultivated areas, particularly forests and grazing land. Studies were carried out in the specific disciplines of soil conservation and land resources. Seven area-based land use planning studies encompassing a total area of 571,110 ha were successfully conducted to enhance both food-self sufficiency and the conservation and development of the natural resources of those areas. The land use planning studies conducted highlighted the degree of land pressure, the extent, the causes and processes of encroachment, and possible intervention scenarios to ease the pressure on steep to very steep lands.

The importance of utilizing indigenous knowledge to cope with land degradation is indisputable. In 2001, the government instituted a new department for Rural Development at the ministerial level with the mandate to guide the holistic development of rural Ethiopia, including resolving issues of land management. The government document on rural development is well thought out and its emphasis is on sound ecological management as the basis for soil fertility and improved agricultural production.

Programmes and Projects: No information available.

Status: Now, the system has been decentralized, and Regional Land Use Planning Offices are striving to establish better institutional arrangements and develop land use policies and plans relevant for their particular conditions. These initiatives can provide a good start for achieving sustainable land use management as well as determining existing land use patterns in the various agro-climatic zones and applying suitable land use management systems.

A high population growth has been and continues to be the major driving force in the exacerbation of agro-ecological problems related to land use and land management. With a controlled growth of the population, family life can be improved and the pressure on the land eased.

Possible intervention scenarios must be considered to ease the pressure on this rugged land. This requires, among others, continuously up-dated land use planning data complete with the synthesis and analysis to feed an up-to-date land use related policy and strategy. The current situation, therefore, calls for developing a land use study programme in each region that will aim at achieving proper land resources utilization on a sustainable basis.

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: No information available.

Programmes and Projects: No information available.

Status: Despite the efforts made by the Government in various sectors of forest management, many chronic forestry problems remain unsolved. Given a conducive environment for the conservation and sustainable development of the forestry sector, the following issues are challenges: halting/minimizing the rate of deforestation; developing appropriate technologies to improve conservation, development and utilization of forest products; development of forest resources to meet the demands of the ever-growing population of the country; rehabilitating degraded land; and maintaining the productivity of agricultural land.

Capacity-Building, Education, Training and Awareness-Raising: Forest resources have economic, environmental and social functions. Some efforts have been made in the last ten years to implement some forest conservation and development measures, and to reduce the pressures on the remaining forests. A Participatory Forest Management (PFM) approach was introduced into the country to ensure the involvement of the local communities in the conservation of these resources in such a way that they may share benefits accruing from the forests, and benefit in other locally relevant ways. Other activities have included forest demarcation and inventory, preparation of management plans, and federal and regional capacity building activities. There is an encouraging involvement of NGOs in the conservation and development of forest resources.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The Government of Ethiopia signed the Convention to Combat Desertification (CCD) in October 1994 and ratified it in June 1997. As a first step in the implementation of the Convention, the Government of Ethiopia designated the Environmental Protection Authority (EPA) as the Focal Point to coordinate the implementation of the Convention in Ethiopia. To carry out this mandate, EPA established a National Steering Committee (NSC) for the formulation of a National Action Programme to Combat Desertification and Mitigate the Effects of Drought (in short, NAP) as well as formed a task force for the formulation of a National Desertification Fund (NDF). As a response to what is expressed in the Convention and the urgent Action for Africa, the Government of Ethiopia gave priority to the preparation of a NAP to implement the Convention. The NAP was endorsed by the participants of the first national forum for implementation of the Convention in November 1998. By design, the NAP takes into account its own integration into the process of national economic and spatial planning. The effort to involve international partners in the NAP formulation and implementation process has not been successful. The UNDP field office in Ethiopia coordinated donors for the NAP process. In recognition of the need, EPA facilitated the formulation of a National Strategy to mainstream gender in the NAP process.

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 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: Since Ethiopia is mostly mountainous, all development activities have to reflect the conditions found in mountainous environments. These conditions are accommodated in the Environmental Policy of Ethiopia and in other relevant policies and strategies, e.g. those on forestry and water resources development. The Environmental Policy of Ethiopia and other policy documents relating to natural resources management all take the mountainous nature of Ethiopia into consideration.

Programmes and Projects: No information available.

Status: Ethiopia is a country of great geographic diversity with high and rugged mountains, flat-topped plateaus, deep gorges incised by river valleys and rolling plains. Despite the opportunities available within the country for encouraging international advocacy and strong commitment by some international organizations for sustainable development of mountain ecosystems, the achievements recorded so far in Ethiopia specifically aimed at the Agenda 21 chapter on Sustainable Mountain Development are not significant.

The major challenge is to reconcile the demands of modern development with the constraints of the fragile ecosystems found in mountains, particularly the problems of making roads, and water supply and waste disposal for urban development, and those of an expanding tourist industry.

Capacity-Building, Education, Training and Awareness-Raising: In direct response to Agenda 21, a Survey of the Flora and Fauna of the Simen Mountains National Park, Ethiopia, was published in 1998, and Reconciling Conservation with Sustainable Development: A Participatory Study Inside and Around the Simen Mountains National Park, Ethiopia, in 2000. Some projects aimed at understanding and conserving high mountain biodiversity are being implemented.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: Agriculture is the mainstay of the Ethiopian Economy. The long-term development strategy of the Government of Ethiopia expects the continuing dominance of agriculture in the economy and stresses the need to give it due attention. The National Agricultural Research Policy and Strategy was published in 1993 and provided the framework to enable the Institute of Agricultural Research (IAR) to broaden its mandate to become the Ethiopian Agricultural Research Organization (EARO). Since 2000, much direct responsibility for agricultural research has been decentralized to the regional governments, which are now developing their respective regional agricultural research strategies. Importantly, privatisation of state farms is being accelerated in accordance with the free-market oriented economic policy of the Government.

A number of opportunities present themselves to facilitate or enhance agricultural development and rural livelihoods in Ethiopia. The most significant opportunity is the recently introduced comprehensive Rural Development Policy for Ethiopia, which grants local communities the power and rights to determine their own priorities for development with the specialized sectors (agriculture, education, health, etc) providing the appropriate support in their areas of expertise.

Programmes and Projects: Despite the observed improvement in overall grain production, there is still a need for food aid for vulnerable groups. In acknowledging the substantial increase in production and its resultant fall in grain prices, the government of Ethiopia initiated the local food-aid purchase program in 1996. The local purchase programs are intended to support domestic production by reducing the volume of grain circulating in local markets during surplus and price depression periods. In the interest of producers and consumers, the government may need to opt for the launching of a price support programme for farmers.

Status: There are three broadly defined food production systems in Ethiopia: the smallholder farming system, the pastoral nomadic system, and the commercial farming system. Most food crops (cereals, root crops, pulses, oil seeds), as well as coffee, are produced by smallholder farmers.

Despite the observed improvement in overall grain production, there have been no notable efforts to stabilize market prices. The increase in cereal production has come at a time when both urban and rural people in Ethiopian have very low purchasing power. Institutional support to agricultural development in terms of providing modern inputs, credit, research and extension services, and rural infrastructure has improved but is still inadequate. There is sufficient evidence pointing to the inappropriateness of past agricultural and rural development policies, e.g. government meddling in community affairs and compulsory labour to build terraces and plant trees, and the attendant disincentives for farmers. The agricultural sector accounts for the lion's share (90 percent) of the total foreign exchange earnings with coffee contributing about 63 percent of total value (or 70 percent of the total value of agricultural exports) and roughly 2 percent of the world coffee market. Imports of grain and processed agricultural products, often in the name of 'food aid', have undermined local food production and food processing industries, particularly that for edible oil.

Even in periods following good harvests, many people in Ethiopia go hungry because of inadequate purchasing power. Local purchase operations provide the means to support the incomes of surplus-producing households while also mobilizing food for relief and for buffering stocks. But the long-run problem is poverty and the sustainable solution will lie in the process of sustainable economic development and ecologically sound environmental management.

Despite considerable land degradation, Ethiopia is endowed with vast land potential for agricultural development. The government needs clear policies and programmes on pricing, marketing of outputs and inputs, rural credit, research, extension and irrigation. Fair distribution of land amongst smallholders is an important policy issue since land quality and availability varies widely from one location to the other, even within the land used by one farming community.

The government should consider mechanisms for expanding irrigation in the country through the construction of small dams and the use of other water harvesting mechanisms for use by small holder farmers as well as through private sector participation in larger scale commercial farming. The challenge is to help farmers increase production while maintaining the traditional diversity found on their farms in order to ensure food security. Getting farmers to change the management practices for their domestic animals is a major challenge. They need to restrict grazing and use more cut and carry for stall feeding in order to make better use of the feed resources available as well as conserve the energy of the animals.

Agricultural/rural consumers' and producers' cooperatives can do a lot to protect rural producers from seasonal price fluctuations that are a source of complaint in rural Ethiopia. The government, donors and agencies promoting improved production must link this production to the development of markets. Without markets, farmers will forever avoid investment for improved production.

Capacity-Building, Education, Training and Awareness-Raising: The Central Statistics Authority's (CSA) and FAO/WFP's forecast for 2000/01 production showed that grain production was expected to be about 10 percent higher than in 1999/2000. The number of government agricultural experts and development agents to advise and help farmers have been increased with in-service training for better performing workers as an incentive to improve their careers. The Ministry of Agriculture, together with the Ethiopian Agricultural Research Organization (EARO), has produced an agro-ecological zone (AEZ) map of Ethiopia. AEZs are now being used to plan regional agricultural research and development. An increase in the production of leather goods by the private sector has helped raise standards of production in both private and state-owned enterprises and enabled Ethiopia to export these products competitively. Although the overall situation for coffee production and export has declined, some of Ethiopia's distinctive regional coffee types have entered the specialised coffees market.

Ethiopia has an extensive extension service, encompassing all areas of agricultural endeavour and reaching all of the major smallholder agricultural systems in the country. Ethiopian farmers have accumulated agriculturally related indigenous knowledge over generations that needs to be built into the agricultural education, research and extension systems.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: It has been recognized that the conservation and sustainable development of genetic resources is unlikely to succeed without a national commitment expressed in an appropriate government policy. To this end, a National Biodiversity Conservation and Research Policy was formulated based on the rationale that the conservation of biodiversity is the basis for overall socio-economic development and sound environmental management.

The Institute for Biodiversity Conservation and Research (IBCR) replaced the former Biodiversity Institute and incorporated the Plant Genetic Resources Center. The Institute has an expanded mandate to collect and conserve not only all types of plant genetic resources but also those of animal and microbial genetic resources using *ex-situ* and *in-situ* conservation strategies. The holdings of the genetic resources centre are some 60,000 accessions of 101 crop/plant species. Priority in collecting operations is governed by the economic and social importance of the crop/plant, its risk of genetic erosion, etc. The International Centre for Agricultural Research in Dry Areas (ICARDA), the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), and the International Livestock Research Institute (ILRI) are among the international users of Ethiopia's crop/plant germplasm.

The challenges involved in the sustainable management of biodiversity are many. All biodiversity conservation activities come under IBCR, but this institution was established focusing on biological diversity at the infraspecific level of crop genetic diversity. EWCO has been recognized as the Ethiopian authority to oversee the conservation of national parks and wildlife sanctuaries. Policy, institutional and material support has been growing and there is thus the environment for the more aggressive implementation of activities to support the conservation and sustainable utilization of the country's biodiversity.

Programmes and Projects: *In-situ* conservation activities include the management of conservation sites for forest coffee. Since 1989, Ethiopia has been supporting smallholder farmers to conserve their crop varieties on their farms as well as short-term *ex-situ* conservation in community seed banks.

Status: Ethiopia is known for its high biological diversity, particularly that of its crops. The recorded animal species complement consists of 277 mammals, 861 birds, 201 reptiles, 63 amphibians, 150 fish and 324 butterflies. Many crop plants have all of their genetic diversity in Ethiopia. Others with gene pools in other countries also have a high diversity within Ethiopia. The protected areas systems covers about 14 percent of the country. It consists of 9 national parks of which 2 are gazetted, 3 sanctuaries, 11 wildlife reserves, 18 controlled hunting areas, and 58 national forest priority areas.

Deforestation is still prevalent, but forest regeneration is also growing fast, particularly in the previously devastated areas in the north of the country. Research to support this is poor because forestry research in Ethiopia is young. The quality and quantity of such research, however, is improving fast.

A major constraint to implementing biodiversity conservation programmes is the inadequacy of data for most of the lower plants and animals – particularly invertebrates and fungi for the country. It is thus impossible to produce reliable information on species distribution, abundance, and conservation status in general, and genetic diversity in particular.

Capacity-Building, Education, Training and Awareness-Raising: The infrastructure of the protected areas deteriorated much during the instabilities associated with the change of government of 1991. But there has been much rehabilitation since, including the building of better relationships with the local communities in and around the protected areas.

Information: A number of studies have been undertaken on the threatened mammal species of Ethiopia, particularly the Walia Ibex, Ethiopian Wolf, Erer Valley Elephant, and Somali Wild Ass.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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

Decision-Making: Modern Biotechnology is seen as a new development that could bring benefits to agriculture, medicine, industry, etc. But, the impacts of its applications on human health and natural and agricultural ecological systems, and their attendant socio-economic changes have first to be carefully studied and assessed. There should, therefore, be a biosafety system established to regulate activities in modern biotechnology.

The Ethiopian Science and Technology Commission has assessed the national capacities, opportunities and needs in biotechnology, and determined feasible and appropriate ways that would both strengthen existing national efforts in biotechnology and related fields, and help develop national capability for the development and utilization of appropriate applications of modern biotechnology. Ethiopia has drafted a National Biotechnology Policy, which is awaiting government approval.

EARO recently developed a twenty-year Strategic Agricultural Biotechnology Research Plan and is implementing national programmes on agricultural biotechnology.

The Environmental Protection Authority (EPA) played a leading role in the negotiations of the Cartagena Protocol on Biosafety under the Convention on Biological Diversity (CBD). The EPA also assisted the Organization of African Unity/African Union to prepare an 'African Model Law on Safety in Biotechnology' that has been approved to be domesticated into national laws by its member countries. Ethiopia is now preparing its domestic biosafety law based on the African Model Law and is being assisted through the UNEP GEF Biosafety Project to set up an institutional framework for biosafety.

Programmes and Projects: No information available.

Status: Ethiopia is particularly rich in agricultural biodiversity – see **Chapter 15** – and is globally recognized as one of the Vavilov centres for the domestication and diversification of crops. Great care has to be taken to protect this genetic wealth from contamination by genetically modified organisms.

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

Information: No information available.

Research and Technologies: Alemaya University of Agriculture is investing in strengthening its agricultural biotechnology research capacity. The East African Regional Programme and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development (BIO-EARN) aims at building national research capacities in Biotechnology, Biosafety and Biotechnology Policy in four East African Countries (Ethiopia, Kenya, Tanzania and Uganda).

Financing: No information available.

Cooperation: See under **Decision-Making**, and under **Research and Technologies**.

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

Decision-Making: As a flag state, Ethiopia actively participates in the UN body, the International Maritime Organisation (IMO), and engages itself in the effective implementation of IMO conventions. The Ethiopian Shipping Lines Share Company (ESLSC) is a national shipping organization currently owning and operating a fleet of eight multipurpose General Cargo Ships and a Tanker. The ships call in a total of thirty-nine ports around the globe. ESLSC has produced a policy on safety and environmental protection with complementary objectives and strategies. Replacement of the old fleet with new ships equipped with state of the art technology remains a major challenge.

The recent policy of the Government of Ethiopia “to streamline the foreign currency utilization of the country” has created a favourable condition for national shipping. In addition to its contribution to Ethiopia's foreign trade, the company may satisfy the sea transport needs of some of Ethiopia’s neighbouring countries.

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 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 Ethiopian Water Resources Policy was approved in 1999 and is regarded as a major achievement. The policy covers aquatic resources, aquatic environments, watershed management, water resources protection and conservation, water quality management, integrated water supply and sanitation, and irrigation and hydropower generation. The Water Resources Proclamation was enacted in 2000.

The Water Sector Strategy mainly aims at improving the overall management of the country's water resources and supports the sustainable development of the water sector. It is being prepared within the planning framework of Ethiopia's macro-economic development priorities and programmes based on the Water Resources Management Policy and the Water Resources Legislation. The Water Resources Development Strategy aims at fulfilling the following targets: supporting the realization of food self-sufficiency and food security through the expansion of irrigation; improving the living standard and general socio-economic well being of the people through the provision of safe drinking water and sanitation; contributing to optimal power generation; and enhancing the contribution of water resources in attaining national development priorities, programmes and objectives.

Constraints to water resources development in Ethiopia are numerous. These are legal, political, social and technical in nature, mostly in combination. An irrigation development strategy and a national plan for overall investment in water resources development have been prepared aiming to solve these problems.

Programmes and Projects: The Government of Ethiopia has embarked upon a programme for integrated development of all the natural water resources of the country. Furthermore, the economic strategy of the country allots great emphasis to the development of irrigation. So far, integrated and comprehensive water resources development master plan studies have been prepared for the Omo-Gibe, Baro-Akobo, Abbay, Tekeze and Mereb river basins. The other river basins remain unstudied.

The Water Sector Development Programme is an implementation action plan that serves as a basis for the efficient and sustainable development of irrigation, hydropower, water supply and other water resources projects.

Status: Ethiopia is well endowed with fresh water resources having twelve major lakes and twelve river basins, nine of them with perennial flows. However, the mountainous nature of the topography and the spatial distribution of the surface water limit the utilization of the fresh water resources. The country's annual renewable fresh water resource amounts to some 122 km³/yr spread over the twelve river basins out of which about seventy percent is in the Ethiopian portion of the Abbay (Blue Nile) sub-basin catchment. From the total water resources available, only 9 percent remains in the country, the bulk goes to the lowlands of the neighbouring countries, and is particularly important for Somalia, Sudan and Egypt.

Much effort has been put into improving the rural and urban water supply and sanitation. Since 1994, rural and urban water supply and sewerage services have been under their respective regional government bureaus. Households that enjoyed safe drinking water were 19 percent in 1996, and 23.7 percent in 1998. Safe drinking water comes from protected wells (10.2 percent), treated and tapped water accessed through public taps (10.8 percent), own taps (2.7 percent) and other sources. In urban areas, however, the majority (83.5%) of the households have access to safe water, only 10.6 percent in 1998 used unsafe drinking water. Despite Ethiopia's large potential for irrigation, the area under irrigation so far is only about 3 percent.

Many studies state that Ethiopia stands second only to the Congo Basin in hydropower potential in Africa. So far however, the country has utilized only a fraction of this potential. The identified gross energy potential of the country is in the order of 650 TW/yr. The corresponding economically exploitable capacity is estimated to be 30,000 MW. The power stations currently connected to the interconnected system (ICS) have a total installed capacity of 386 MW, but due to general wear and tear, production is about 320 MW.

The fact that the majority of the population live in the fragile ecosystems of the highlands is a major challenge. Damming valleys displaces people from their land. Delivering water across a mountainous landscape is not easy. Much effort is needed in education, both formal and informal, to improve attitudes on the care of fresh water sources and in sanitation and the safe disposal of wastes.

Ensuring that there is adequate watershed planning and management in all micro-dam projects is a major challenge. The dams also need to be better managed to prevent contamination and the spread of water borne diseases, particularly schistosomiasis and malaria. The same is true for all major irrigation schemes.

Capacity-Building, Education, Training and Awareness-Raising: Given adequate funding and trained manpower, there are many opportunities for Ethiopia to develop and make good use of its wealth in fresh water resources. The Rural Development Policy for the country is aimed at making local communities responsible for their own development. With appropriate backup in technical information, communities will manage their own water resources effectively, particularly the protection of watersheds, and the control of the use of micro-dams and small-scale irrigation schemes.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Ethiopia is the source of transboundary rivers shared with all its neighbouring countries. The most important of these rivers is the Nile, which is the longest river in the world, 6,850 km, with its basin covering more than three million km² and its waters shared by ten riparian states. Ethiopia contributes eighty-six percent of the total flow of the Nile, and actively participates in the Nile Basin Initiative (NBI). The Eastern Nile Basin Subsidiary Action Programme (ENSAP) is a co-operation among the three Eastern Nile countries: Ethiopia, Sudan and Egypt.

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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 following legal instruments deal with the use of potentially dangerous chemicals:

Explosives Proclamation (1942);

Pharmacy Regulation (1964);

Pesticides Registration and Control (1990);

Radiation Protection Proclamation (1993);

Fertilizer Manufacturing and Trade Proclamation (1998).

In 1999, the Environmental Protection Authority produced the National Chemicals Management Profile for Ethiopia. The document describes the nature of chemical management in the country. It also provides a framework so as more data are made available the Profile can be revised and enriched. It also enumerates areas of needed improvement. A draft law for controlling pollution has been submitted by EPA to the government for approval by the Council of Ministers and thence the House of People's Representatives.

Programmes and Projects: No information available.

Status: Ethiopia is neither a heavy user nor a heavy producer of chemicals. The chemical industry in Ethiopia is very young. What the sub-sector produces is limited to consumer chemicals- soaps, detergents, paints, drugs, and a few industrial chemicals like carbon dioxide, oxygen, foam, alkyd resin, caustic soda, aluminium sulphate and sulphuric acid. Most chemicals are imported from diverse countries. The Environmental Policy of Ethiopia has a number of provisions devoted to the management of hazardous materials including toxic chemicals, but overall the country is poor in capacity to ensure the safe use of toxic chemicals.

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

Decision-Making: The management of wastes is given thorough coverage in the Environmental Policy of Ethiopia, and the draft Pollution Control Proclamation has articles expressly on the management of hazardous and all types of municipal wastes.

Ethiopia ratified the Basel Convention for the Transboundary Movement of Hazardous Wastes and Their Disposal in April 2000 and the POPs and PIC conventions in July 2002. It is also in the process of ratifying the Basel Protocol on Liability and the Ban Amendment to the Basel Convention.

The National Radiation Protection Authority (NRPA) has been established as an autonomous regulatory public agency to control and supervise the introduction, operation and disposal of all sources of ionising radiation. Regulatory activities are in line with the main regulatory instruments: notification, authorization, inspection and compliance enforcement. In its effort to develop a systematic regulatory regime in a professional transparent and sustainable manner, NRPA has developed and tested in practice pertinent guidelines and procedural manuals. NRPA is also considering the adoption of the IAEA Radioactive Materials Transport Regulations in the draft Radiation Protection Regulations as a legally binding norm governing the transport of any radioactive material inside Ethiopia.

Programmes and Projects: In June 2000, the Ministry of Agriculture assisted by FAO started a two-year project to remove and destroy obsolete pesticides that had accumulated over the past forty or more years. The Project started with training of local staff in safety procedures for handling these hazardous materials, and a more detailed inventory. The inventory found over two thousand tonnes of obsolete pesticides scattered in more than nine hundred sites throughout the country. This makes Ethiopia the country with the largest amount of obsolete pesticides in Africa. As can be seen from the very high density of birds of prey in the country, however, environmental contamination has not been serious.

EPA is now actively pursuing the following five aims in order to rectify the situation: instituting a sustainable industrial development policy and strategy, setting environmental standards, establishing a system of regulatory enforcement, building capacity in human resources and a sustainable industrial development database. The Ethiopian Science and Technology Commission has established a National Cleaner Production Centre.

In June 2000, NRPA issued the final public call for registration of all radiation sources and radioactive materials, and launched a coordinated campaign to register them. The response was significant and an up-to-date inventory of about ninety-five percent of the radiation sources and radioactive materials in the country has been made.

Status: One of the poorest environmental performances in Ethiopia pertains to the management of all types of wastes. Except for an inventory of obsolete pesticides, virtually no data are available regarding the generation, storage, transport and disposal of hazardous wastes. The country lacks any disposal or destruction facility — sanitary landfills, incinerators, biological or chemical treatment plants (neutralization, precipitation/separation or chemical detoxification) — for hazardous wastes, and regulations and guidelines for their management. This, however, does not mean that hazardous wastes are nonexistent in the country; on the contrary, all sorts of hazardous wastes are being generated from hospitals, industrial activities, radioactive materials, and even from consumers. In Addis Ababa, hazardous solid wastes, totally untreated, may be put into the city's municipal dump whenever 'properly' disposed of, or remain undealt with in the general environment. The situation for Addis Ababa is now being repeated in the fast developing urban centres throughout the country, particularly the regional and zonal capitals where hospitals and a variety of industries are being established.

In cities and towns, domestic and industrial effluents are released into waterways with minimal or no treatment, threatening both human and animal health as well as aquatic life. The proportion of the urban population covered by sanitation services in this country is very small. More than twenty-nine percent of the residents of Addis Ababa,

for instance, lack any kind of sanitary service, even the simplest pit latrine. Many, therefore, are forced to defecate and urinate in open spaces or in watercourses, making the various 'green areas' stinking public toilets, and the streams and rivers running through the city virtually open sewers. This is the situation in all other urban areas. Of the total waste generated in Addis Ababa in 1996, estimated to be about two thousand cubic metres (1,386–2,165 m³) a day, the amount collected and disposed of by the municipal service was no more than fifty-five percent. Leaving the question of aesthetics aside, uncollected domestic waste is the most common cause of blocked drainage channels, increasing, inter alia, the risk of flooding and vector borne diseases. It also covers pavements and other walkways, as well as filling the open spaces between buildings.

A major constraint in all wastes management is the low priority that urban administrations allot to waste management services. No municipal waste disposal systems worthy of the name exist in the country, and the same is true for hazardous wastes, which are treated no differently from regular solid wastes. There are no public or municipal incinerators. The solid waste disposal facility for Addis Ababa is an area where rubbish trucks dump their loads. The site has never been subjected to an EIA process. All sorts of scavengers, both humans and other animals, including nocturnal ones, prey on the site. The poor state of this disposal site is also causing a number of other environmental problems affecting both human health and the environment. Water pollution, both ground and surface waters, from leached materials is bound to be rife as both the composition of the disposed waste, and the lack of control of leached materials due to the absence of proper drainage design of the dump make this possible. Air pollution from gaseous emissions such as methane and smoke are daily occurrences at the disposal site.

The country needs to elaborate a mechanism and establish facilities for the life-cycle management of hazardous wastes, emphasizing the minimization or avoidance of the build up of these wastes. For all major Ethiopian urban centres, including Addis Ababa, the challenge is for effective community action in waste management. Over sixty percent of the wastes generated in Addis Ababa are organic materials that could be recycled to generate biogas and organic fertilizer, particularly compost. The percentage of potentially recyclable organic materials in the waste of the other urban centres is likely to be higher.

The challenges in the area of radioactive wastes management are: shortage of qualified human resource, limitations in awareness and concern regarding radiation hazards, and deficiency in scientific and technical capacities.

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: Ethiopia has been actively cooperating with the International Atomic Energy Agency (IAEA) in diverse fields and has participated in regional projects in areas specifically concerning radiation and the safety of waste. There are some opportunities to help promote better radioactive waste management. NRPA is actively participating in regional and interregional programmes of the IAEA.

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CHAPTER 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: The Government established the Women's Affairs Office, issued a National Policy on Ethiopian Women which entitles and ensures a woman's rights to property, employment and a pension. Importantly, it also empowers and strengthens women's participation in decision-making, guarantees their rights to access to credit schemes, and creates a conducive environment for civic societies. **Status:** Women in Ethiopia, like their fellow sisters in other developing countries, have been victims of gender-based oppression and exploitation in all spheres of life. Their contribution has never been adequately recognized nor given economic value. They have often been denied the right to have access to and control over means of production and have, therefore, remained in the category of the poorest of the poor. Because of this, the Government of Ethiopia has given due consideration to the multi-faceted problems of Ethiopian women. The major achievements of the government in promoting and supporting the role of women in sustainable development are: institutional mechanisms for the advancement of women; capacity-building by establishing an institutional development fund; giving special attention to women fuel wood carriers; increasing the participation of women/girls in school enrolment, in decision making, and in the election process; and the measures taken by the government to improve the employment situation of women. Some of the major constraints hindering the progress of women in sustainable development are: the low level of consciousness in society of the role played by women in the development of the country; the deep-rooted cultural beliefs and traditional practices of society that prevent women playing their full role in the development process; lack of appropriate technology to reduce the workload of women at the household level; shortage of properly qualified female development agents to understand and help motivate and empower rural women.

Children and Youth: Decision-Making: A "National Child Labour Forum" to combat child labour, such as child prostitution and children working in hazardous occupations, has been established. **Programmes and Projects:** Following the Education Policy of Ethiopia, a number of Vocational Training Centres for youth completing high-school have been opening, starting in 2001. A number of national as well as international youth and children focused voluntary and civic organizations are active in the country. Bipartite and tripartite partnerships to strengthen the role of women, workers and the youth in the socio-economic development of the country are beginning to show improvements. **Status:** An ever-increasing number of youth in schools and in neighbourhoods are voluntarily organized in clubs promoting diversified agendas (environment, AIDS, Child Rights, media, etc.), thereby contributing to the collective well being of society. Youth focused development programmes are increasingly being planned and implemented by both national and international NGOs. Repeated bouts of lack of peace and drought/famine have left their negative mark on the country's children and youth. The unfortunate Ethio-Eritrea boarder conflict disrupted family life and education of many children and youth, and wasted essential scarce resource. Likewise, the reintegration and re-establishment of young men demobilized from military service remains a challenge for reasons of resource scarcity.

Indigenous People: As all of Ethiopia's peoples are considered indigenous, this information can be found in the various chapters of this Profile.

NGOs: Decision-Making: The streamlining of NGO certification in 1995 by the Ministry of Justice paved the way for the acceptance of NGOs as one of the major actors in development. As a result, a number of national NGOs have become operational, particularly in the resource management sector. But residues from the past, e.g. cumbersome government procedures, rules and regulations, continue to hamper NGO activities in various ways. **Programmes and Projects:** An increasing number of NGOs are involved in urban development programmes focusing on social betterment interventions and services that include income/employment generation and poverty alleviation. Many urban-based NGOs are involved in tackling environmental problems as part of their programmes. **Status:** Children, women, the rural and urban poor, marginalized and the disadvantaged are primary target groups of many of the NGOs operating in the country. Some of the NGOs directly implement projects at field level. Others provide capacity building support to community-based organizations (CBOs), local NGOs and local administrations.

Local Authorities: Programmes and Projects: The introduction of a Municipality Rehabilitation Programme in 302 towns including capacity building, is a major intervention aimed at improving the service delivery of local authorities. Most of the local authorities have increased their logistical and budgetary supports for community based development programmes. However, there is a shortage of resources to effectively implement social, environmental and other developmental programmes, including the development and/or maintenance of local (public) infrastructures. Status: The lowest levels of local authorities in both rural and urban administrative set-ups are the 'kebeles'. An ever improving and growing collaboration and partnership between local authorities and NGOs, CBOs and civic societies is another positive development. Local authorities are facilitating the involvement of these groups in fighting poverty and managing the environment. Because of limited resources, especial owing to shortage of trained people, many of the local authorities have low organizational capacity to plan, implement and enforce development programmes and policies.

Workers and Trade Unions: Decision-Making: A National Advisory Board representing government, labour and employers was established to advise government on major national labour administration issues, such as on occupational safety and health, employment creation, industrial relations, etc. Furthermore, labour tribunals (of tripartite composition) have been established in regional states for the expeditious settlement of labour disputes. Many unionised workers have been taking part in reforestation, industrial waste disposal and accident prevention activities. The Constitution of Federal Democratic Government of Ethiopia protects the basic rights of workers as enshrined in the United Nations Human Rights Declaration of 1948, including the right to organize freely and bargain collectively, the right to work in a safe and healthy environment, as well as the right to strike. The participatory Civil Service Reform Programme is expected to modernize the country's civil service sector and benefit its organizational/human resources. Status: Those labourers who are most negatively affected are women in the labour intensive industrial sectors. Ensuring stable industrial peace, which takes into account the best interests of the workers, employers and the public is thus a challenge area. The rate of unionisation (workers joining unions) is showing a decline. Increasing numbers of workers with HIV/AIDS is a major burden on the productive labour force. There are serious attempts at the national level to deal with HIV/AIDS, but the epidemic is, nonetheless, growing.

Business and Industry: Decision-Making: Industrial development had its debut in Ethiopia at the turn of the last century. Most of the present industries in Ethiopia, however, belong to the manufacturing sector. Recognizing the benefits and principles of a free market economy and the underlying features of the industrial sector in Ethiopia, such as the low level of development, outdated technology, poor quality of products, low capacity utilization, high dependency on imported raw materials, and lack of skilled manpower, etc., the Government adopted a policy of agriculture-led industrial development. The policy aims at attaining economic growth by encouraging both domestic and foreign investment in all sectors. It encourages the expansion of the private sector (domestic and foreign investments), including through privatising public enterprises and assets. Status: Environmental pollution associated with manufacturing activities are rather intense in areas of industrial concentration. Although there is some level of localised air and land pollution, the major pollution problem that is posing a significant threat is that caused by industrial wastewater discharged from manufacturing establishments. The pollution problem of the manufacturing sector has an economic dimension too as some of these industries are discharging valuable inputs, semi-processed products and even final products, as wastes. The consumer preference in Europe and other developed countries for organic products presents Ethiopia with an opportunity to exploit the present condition in which most agricultural products are produced without chemical inputs.

Scientific and Technological Community: Decision-Making: The National Science and Technology Policy, issued in 1993, addresses two key concerns in promoting scientists and technologists. The policy addresses a number of science and technology issues that may promote sustainable development in the country. The Ethiopian Science and Technology Commission (ESTC) co-ordinates the formulation of both the national and the sectoral science and technology policies. Programmes and Projects: The number of professional societies/associations has increased over the last ten years. The government is attempting to create a conducive working environment for scientists and technologists. Scientists and researchers are being encouraged through the National Science and Technology Award Scheme. Status: Scientific research and technological innovations are essential for sustaining and accelerating the development of Ethiopia. Enrolment in universities in science and technology fields is

increasing fast, though the numbers involved are still very small compared to the size of the population. Capacity-Building, Education, Training and Awareness-Raising: Awareness creation activities, which target the general public on science and technology and environmental issues through various mechanisms, are also being implemented through the science and technology popularisation programme of ESTC. It covers issues on science and technology, including issues of environment and sustainable development. Moreover, ESTC supports school science education programmes through establishing Science and Technology School Clubs.

Farmers: Programmes and Projects: The new National Agricultural Extension Programme, now in its fifth year, is steadily growing both in scope and coverage. When it started in 1996, its service was limited to only food crops in areas of reliable rainfall. Recently, natural resource development and management dimensions have been added. The main focus so far has been on the introduction and dissemination of modern agricultural practices (fertilizers, seeds of improved varieties, agricultural implements and other technologies) in the production of the major food crops: wheat, maize, tef and sorghum, vegetables, oil crops and pulses. To help achieve food security, livestock development was so fashioned as to boost and augment crop production. Soil and water conservation has been another important component of the extension system. The plan for the year 1999, in terms of reforestation, agroforestry, water and soil conservation consisted of 432,475 demonstration plots while what was actually realized surpassed this target by 111,612, a clear overachievement indicating how well farming communities responded to this initiative. Status: Agriculture is the mainstay of the Ethiopian economy, accounting for the lion's share of the gainful employment and some ninety percent of the foreign exchange earnings of the country. Cardinal measures resorted to so as to make agriculture measure up to these calls and at the same time improve rural income and the living standard of farmers is the expansion of the agricultural extension system. The increasing pressure on land due to unchecked population growth has perpetrated a situation where traditional soil enrichment practices, particularly fallowing and crop rotation, have had to be abandoned. That is why the use of chemical fertilizer and composting are increasing. In the context of farming in Ethiopia, the most prized resource is land, especially in the highlands where sedentary agriculture has been the norm for millennia. In Ethiopia, the fact is that development has to come with and through smallholder agriculture, or there will be no development with any semblance of equity.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: Based on the new economic policy, the government has formulated a long-term economic development strategy - Agricultural Development Led Industrialization (ADLI) - that is geared towards the transformation of the poor economic structure. Moreover, Ethiopia is trying to promote sustainable development by fund allocations from the government revenue, by loans and grants through multilateral and bilateral international co-operation, and by encouraging the involvement of the private sector in various development endeavours of the country. But neither donor aid nor private investment has been available in amounts related to the promises made in Agenda 21 in 1992.

Programmes and Projects: No information available.

Status: Sustainable development is as much the conservation and regeneration of scarce resources as their judicious use. The lack of food security (resulting in bouts of famine and malnutrition), lack of alternative energy sources, failure to sustain economic growth, scarcity of productive employment and hence lack of improvement in the quality of life and habitat constitute Ethiopia's priority concerns requiring immediate financing towards sustainable development.

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

Information: No information available.

Research and Technologies: No information available.

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

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: Science is playing an increasing role in improving the efficiency of resource utilization and in finding new development practices, resources and alternatives. It is thus an essential component in the search for feasible pathways towards sustainable development. The government, through the ESTC, has launched a Research and Development Granting Scheme to encourage young scientists. Nevertheless, the support involved is still minuscule.

Status: The availability of scientific and technological information, as well as access to and transfer of environmentally sound technologies are essential requirements for sustainable development. The low national capacities presently at the disposal of the country are limiting technology transfer activities in the country. The high cost of technologies is the major challenge to the country in transferring environmentally sound technologies. The country's efforts to create a suitable environment for technology transfer are continuing and it is hoped that they will provide better opportunities to transfer appropriate technologies in the future.

The relatively small number of basic research activities in the country severely limits the generation of the scientific data and information required to manage natural resources and the environment effectively, and thus contribute to the sustainability of development. The expansion of possibilities for scientists from Ethiopia to participate in international scientific research programmes dealing with problems of environment and development are needed to provide better opportunities for the country to improve its capacity for sustainable development.

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: There are also donors who support scientific research in Ethiopia. These include the Swedish Agency for Research Cooperation (SIDA/SAREC), the International Atomic Energy Agency (IAEA), the International Foundation for Science (IFS), and the Joint Ethio-Russian Biological Expedition (JERBE).

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: No information available.

Programmes and Projects: Education is the basis for ensuring sustainable development in any nation. The non-formal education programmes being implemented are expected to make a significant input in the efforts to create awareness on issues, and skills to tackle effective environmental management for sustainable development. However, there has been no systematic study of their impact. Relevant environmental issues incorporated in non-formal education syllabi are: family planning, population growth and its implications, the role of women in development, environmental health, resource management, environmental development and community participation. Environmental education is also an integral part of the formal school curricula.

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

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: Serious and long-term efforts in various areas of capacity building need to be undertaken if sustainable development is to be achieved. For instance, scientific research and technological innovations are essential for sustainable development. It is also essential to build capacity to record, study and incorporate the best from traditional and indigenous knowledge, practices, innovations and technologies as these have been proven to be the most reliable way of bringing about sustainable development. The generation of a technology within a country will require substantial resources that have to be in place for research and development. Funds, equipment, and documentation facilities are required to carry out the work. Venture capital is necessary to make a commercial article out of an innovation. The constitutional development attained by the country is serving as a fertile ground for undertaking sustainable development by, among others, providing for the devolution of power / decentralization and the practice of political pluralism. Various institutions, of both public and private orientation, that directly or indirectly nurture or boost sustainable development are thus being created. The role of national science and technology to strengthen the ability of the country to pursue the path of sustainable development is very much recognized by the government and measures are being taken towards this end. Nevertheless, the government's capacity is very limited, and the financial and technical assistance promised in Agenda 21 in 1992 is badly needed.

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

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

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 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Decision-Making: Ethiopia is a party to the numerous international conventions. They include:

The Basel Convention on the Transboundary Movement of Hazardous Wastes;
 The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons;
 The Convention on the Protection of the Ozone Layer;
 The United Nations Framework Convention on Climate Change;
 The Rotterdam Convention on Persistent Organic Pollutant; and
 The Stockholm Convention on Prior Informed Consent.

Ethiopia has ratified the following conventions and protocols:

The Convention to Combat Desertification (1997);
 The Convention on Biological Diversity (1994);
 The United Nations Framework Convention on Climate Change (1994);
 The Montreal Protocol on Ozone Depleting Substances (1994);
 The Convention on International Trade in Endangered Species of Wild Fauna & Flora (1998);
 The Basel Convention (2000);
 The Stockholm Convention on Organic Pollutants (2002); and
 The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade(2002).
 The ratification process of the Cartagena Protocol on Biosafety, the Basel Protocol on liability and the Basel Ban Amendment is well underway.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: No information available.

Programmes and Projects: Efforts to counter the poor infrastructure with respect to the availability and flow of information in Ethiopia are being set up, and information systems that operate electronically are being created. For example, the Mapping and Geography Authority has a well-developed information system, the Ministry of Water Resources Development and all other relevant institutions, including EPA, have collaborated to create an environmental metadatabase, which has now been inaugurated. EPA is also developing an environmental information system compatible with the Environmental Metadatabase.

Status: Low living standards and low literacy rates are clearly evident in Ethiopia. These characteristics severely limit people's access to modern means of information transmission (TV, radio, internet, satellite communication, telephone, etc.). Networking information exchange among public institutions and others is also a task for the future. The various freedoms enshrined in the constitution (rights of expression, thought, press, etc.) promote the generation, flow and access of information for decision-making. However, the poor infrastructure limits the exercise of these rights.

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

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER: INDUSTRY

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: 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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