

JOHANNESBURG SUMMIT 2002

ESTONIA



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.

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LIST OF COMMONLY USED ACRONYMS

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

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

UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNU	United Nations University
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund
WWW	World Weather Watch (WMO)

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

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

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

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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

Decision-Making: 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 3: COMBATING POVERTY

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 4: CHANGING CONSUMPTION AND PRODUCTION PATTERNS

Decision-Making: The Consumer Protection Board is the governmental body entitled to protect main consumer rights, including the right to a safe environment. The Law on Protection of Consumers stipulates sustainable consumption by Article 4 Section 2, where it is stated that one of the basic rights of a consumer is to be protected from goods or services that might endanger his life, health, property and environment as well as from goods or services whose use or possession is prohibited. The responsible administrative bodies at the local level are the Local Consumer Unions. The Ministry of Economy has issued Guidelines for sustainable energy use, and, in 1997, on the Day of Sustainable Consumption, the Consumer Protection Board published Guidelines on how to use energy most efficiently at home. A number of Major Groups is involved in decision-making in this area. Consumer Unions of different counties and bigger cities have organized children's camps with major topics about the environment, including, for example, practical actions for cleaning up artificial waste from nature.

Estonia adopted the Packaging Act in 1995 to regulate the manufacture and use of packaging, the management of packaging waste and the marking of packaging. In 1996, it adopted the Packaging Excise Act. The Estonian Standard Board has adopted the Series of ISO 9000 related to product quality and ISO 14000 related to environmental management systems.

Programmes and Projects: No information available.

Status: No information available

Capacity-Building, Education, Training and Awareness-Raising: Consumer education about sustainable and environmentally friendly consumption also takes place in ordinary schools. There are consumer campaigns for taking into use new water cleaning equipment with an optimal price. Efforts are also made in promoting cooperation projects through local Government, science and state institutions, for using the local fuel instead of the distance fuel all over Estonia.

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

Decision-Making: An interim working group of specialists has been formed for the development of legislation and some regulations of the government. The working group elaborates a public document (e.g., the Energy Conservation Target Programme, the Long-term National Development Plan for the Fuel and Energy Sector) and sends it to ministries, research organizations, NGOs etc. for amendment proposals. The document is amended according to these proposals and sent to the government, in case of a legal act (the Energy Act) to the respective commission of the State Assembly. The legislation concerning energy issue and energy related aspects of atmosphere and transportation in Estonia consists of several acts and regulations of the Government and the Ministry of Environment (atmosphere) and the Ministry of Economic Affairs (energy and transport).

Together with other countries, Estonia has chosen the course of sustainable development. One of the first steps on the way to sustainable development is elaboration of a National Environmental Strategy. The main objectives of the National Environmental Strategy are:

- promotion of environmental consciousness;
- reduction of the hazardous impact from power engineering;
- implementation of environment saving technologies (inc. renewables);
- improvement of air quality; and etc.

In the development plans for the energy sector the main points should be taken into account:

- in 1994, the Framework Convention on Climate Change was ratified by Estonian Parliament. Under the convention, emission of greenhouse gases in 2000 shall not exceed the emission level of 1990;
- in accordance with the provisions of the bilateral agreement concluded with Finland in 1993, the emission of nitrogen compounds to ambient air shall not exceed the emission level of 1987;
- Estonia has submitted an application to join the European Union. This implies an obligation not to exceed EU emission standards. Political and economic considerations have to be taken into account when deciding whether this can be achieved with relevant treatment facilities, better combustion technology or the use of less polluting fuels;
- authorities must encourage the use of local fuels in economically efficient and environmentally sound projects;
- reduction of solid waste and spatial dispersion of energy generation is considered to be important;
- special attention should be focused on energy conservation and reduction of production and network losses;
- in order to reduce energy losses and protect consumers, installation of special meters should be encouraged;
- oil shale processing waste should be used more excessively in road, railroad and dam construction, vertical planning of land areas, and as construction gravel and filling material.

The Long-term National Development Plan for the Fuel and Energy Sector sets a principal target to provide stable and high quality energy supply to consumers at optimum prices and with such a development of the fuel and energy sector that Estonia's GDP could be increased to the level necessary for the accession to the European Union. Due to the above, the development plan will forecast development of the fuel and energy sector to the year 2005 and give the principal development trends to about 2018.

In developing the energy policy for Estonia, our government will take into account the following strategic goals:

- To provide a sufficient and stable fuel and energy supply in conformity with the required quality and at optimal prices for consistent regional development and for reaching the economic growth required for the accession to the European Union.
- To provide political and economic independence of the state by the fuel and energy supply as a strategic branch of economy; to establish the strategic security reserves in conformity with the requirements of the European Union.

- To establish an actually working energy conservation system for the fuel and energy production and use.
- To provide conformity with the international environmental requirements.
- To provide higher efficiency in oil shale based energy production with the concurrent and significant reduction of the harmful environmental impact via the renovation of combustion technology.
- To provide the rational use of oil shale resources in the existing underground mines and open pits with the total capacity of 0.6 Btons (without production losses) being sufficient for keeping the power plants and oil processing plants in operation to the end of their depreciation time also after their rehabilitation based on the existing infrastructure.
- To prefer the principle of distributed electricity production and combined heat and power production by planning new power plants with the concurrent optimal use of the available heating capacities.
- To promote wider use of renewables with applying tax allowances both on the respective investments and energy production based on those investments.
- To provide eurointegration of the Estonian energy sector in conformity with the EU directives and trends.
- To improve the security of energy supply by international agreements (for the maintenance of energy facilities on the border with the Russian Federation, fuel and energy supply agreements with neighboring countries for the storage of emergency and security reserves).

In the case of a problem or object of local importance, the local government makes the decision according to the Local Government Organization Act. (e.g. waste treatment on the local level, etc.).

Programmes and Project: There are no special programmes to enhance the accessibility of energy to urban and rural households, because Estonia is completely electrified. District heating supplies most towns, including small towns with heat and steam. The system is also well developed in the rural areas. The problem is how to improve the efficiency of production, distribution and consumption of heat energy and electricity. Energy planning projects carried out on the basis of the PHARE Programme “Investment Preparation Facility, Regional Development and Energy Planning” help to solve these problems.

The major programmes undertaken to provide alternatives to unsustainable energy sources to urban and rural households for their consumption are: The EU Energy Loan Programme; The EBRD Energy Loan Programme to 1992-1996; Programme of Environmentally Friendly Fuels financed by the Swedish Energy Agency (NUTEK); and DH reconstruction Programme to 1994-1999 financed by the World Bank, Swedish Export Credit and European Investment Bank.

The main programmes or projects undertaken to cut down emission of greenhouse gases and reduce GHG concentration in the atmosphere are:

Energy Policy:

- Energy Development Scenario to 2030;
- Energy Master Plan for Estonia;
- Energy Program “Energy 2000”; and
- Long-term Development Plan for the Estonian Fuel and Energy Sector.

Electricity production:

- Refurbishment of the stack in Iru Power Plant (in 1997);
- In 1993 the desulphurisation plant unit was installed and adjusted in Balti Power Plant by Estonian Energy and Ahlström;
- In 1998 the precipitator of the unit 4 in Estonian Power Plant was installed. The new precipitator will decrease the fly ash specific emissions from the plant by 10-12 times; and
- Refurbishment of the Narva Power Plants and the Optimization of Oil Shale Mining in Estonia.

Heat production:

- The EU Energy Loan Programme;
- The EBRD Energy Loan Programme to 1992-1996;
- Programme of Environmentally Friendly Fuels financed by the Swedish Energy Agency (NUTEK); and
- DH reconstruction Programme to 1994-1999 financed by the World Bank, Swedish Export Credit and European Investment Bank.

The main programme undertaken to reduce emissions from the usage of petroleum-based fuels for transport is the Public Transport Act (from October 1, 2000) and in the frame of the Act a National Development Plan for the Public Transport Sector will be elaborated. The major programme aimed at promoting energy conservation is the new Energy Conservation Target Programme that was compiled in 1998 and approved on Government meeting on January 4, 2000 (first Programme was approved in 1992 for period up to 1998).

The Rent allowance (approved by the decree of the Estonian government No 36 from February 1, 1996) is a special programme to supply energy to low-income households. The terms and procedure for rent allowance is a public indemnification system for residents foreseen to cover partially the expenses on rent (including energy consumption) for families with low income.

Status: the overall availability of various types of energy resources in Estonia is as follows:

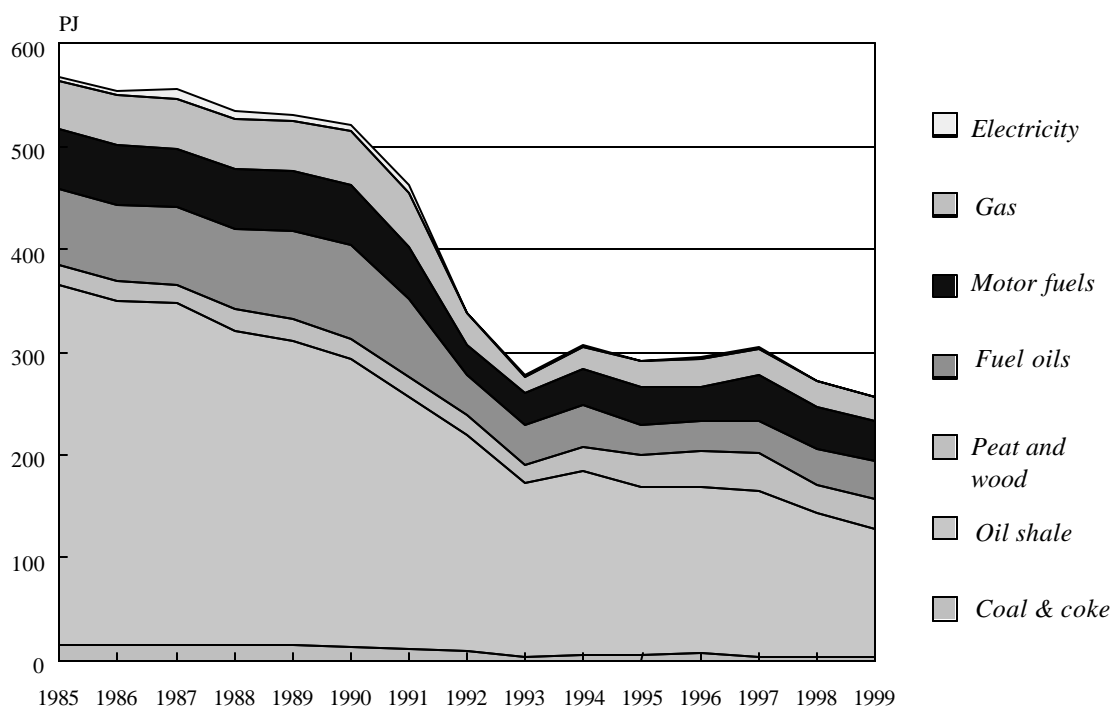
Primary energy resources:

Figure 1. *Primary energy resources, 1985–1999*

Source: Energy Balance 1999, Statistical Office of Tallinn, 2000.

Primary energy resources have remained at about the same level since 1993. In comparison with 1985, the resources have decreased about two times (see Figure 1). In 1999, in comparison with 1998 the primary energy resources decreased about 6% on account of the decrease in oil-shale production and imports of motor fuels. In 1991, the share of domestic fuels (oil shale, wood and peat) was the lowest - 52%, but it increased abruptly to over 60% in 1992 and remained at the same level in the following five years. In 1999, the share of domestic fuels was 56%, which was 2% less than in 1998. In 1999 the share of oil shale remained at the 1998 level accounting for 58%

of the primary energy supply. The share of fuel wood with peat included was 12%. This figure has remained the same since 1995. (see Figure 2).

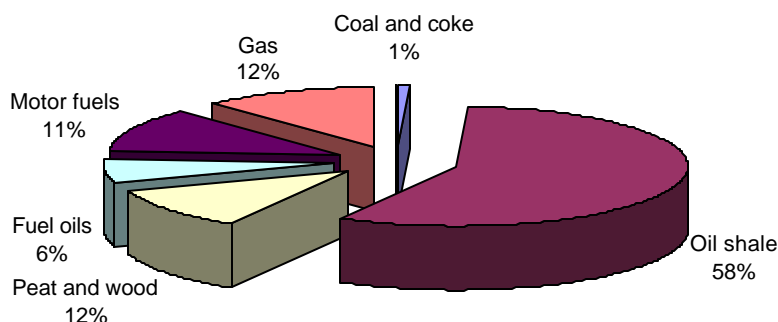


Figure 2. Structure of primary energy resources, 1999

Imports and exports of energy:

In 1999, about two times less fuels and electricity were *imported* than in 1990. Imported fuels include coal, oil shale, natural gas, liquefied gas, fuel oils and motor fuels. In comparison with 1998, the total imports decreased about 2% due to the decrease in the imports of coal and motor fuels (see Figure 3).

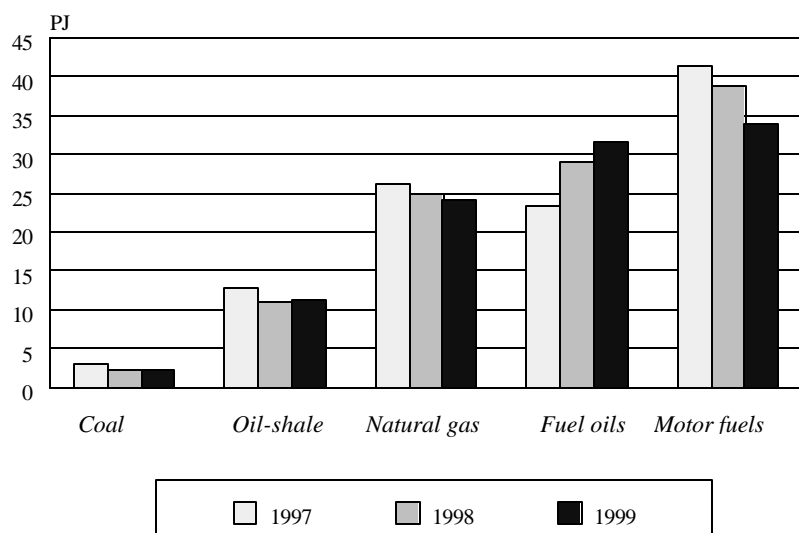


Figure 3. Imports of fuels, 1997–1999

In 1999, Estonia *exported* shale coke, peat briquette, firewood, shale oil and electricity. In 1992–1997, the exports of shale oil increased, however, in the following two years it decreased over three times compared with 1997. The quantity of peat briquette for exports was about the same in 1998–1999, but exceeded about two times the level of 1993–1996. In comparison with 1998, the exports of electricity increased about 30%, as a result of the increased exports to Latvia. The access to electricity of all groups is guaranteed (by 100%).

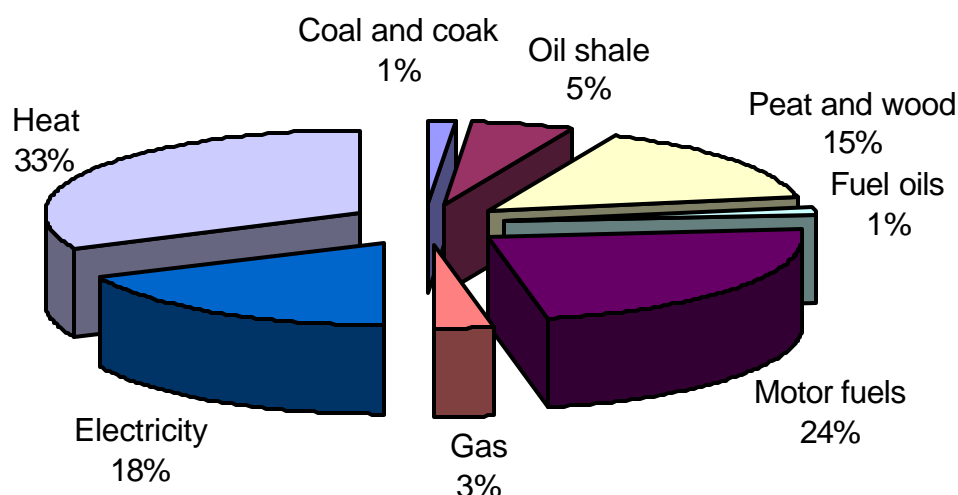


Figure 4. *Final energy consumption by carrier categories in 1999, TJ*

Energy consumption:

Energy is consumed for electricity and heat generation, shale oil and shale coke production, also as motor fuels in transport and consumption in households. In 1999, 34% of primary energy was used for electricity generation and 20% was used for heat generation. Oil-shale was used in the production of 92% of electricity. For heat generation mainly fuel oils, natural gas and oil shale were used. About 20% of total energy resources was consumed by households. In comparison with other kinds of fuels households consumed mainly coal, firewood and peat briquette. The structure of the final energy consumption is given in Figure 4.

In 1992-1999, the share of renewables (mainly fuel wood) increased by about 10%:

Table 1. *The share of renewables in final energy consumption*

<i>Renewable</i>	<i>1992</i>	<i>1999</i>
<i>Wood and wood waste</i>	<i>4.1</i>	<i>14.7</i>
<i>Hydro and wind</i>	<i>0</i>	<i>0.06</i>
<i>Bio-gas (landfill-gas)</i>	<i>0</i>	<i>0.085</i>

Like the Estonian economic policy in general, also the national energy policy is extremely liberal. The state level control in the fuel and energy use is minimal. Although up to now the government controls the prices of electricity and oil shale (through Energy Market Inspectorate), the Estonian strategic domestic fuel, neither direct subsidies nor cross-subsidies are applied on fuels and energy. Taxation of fuels and energy is not used for regulating their use either. The only public support to renewables is exemption of VAT (Value Added Tax) from the energy produced in small hydropower plants and by wind generators, which actually means taxation with the 0% VAT (the common sales tax rate is 18%). Up to now fuelwood and waste wood have been the most widely used renewable energy resources in Estonia. Naturally the high competition level in the use of energy sources will create significant difficulties. However, the constant growth in the high share of biofuels (see Table 1) shows that the lack of the support by state subsidies and taxation policy does not hinder the use of biofuels very much.

Among Estonia's resources of renewable energy, wind power is the most significant and wind resources are not limited for energy generation purposes. At the same time, energy produced by windmills is not yet competitive with cheap oil shale energy. Estonian rivers are relatively waterless and with low tilting, which makes their energy potential moderate. Therefore, there are no opportunities for large and medium-size hydrounits to be built on the rivers.

According to the EU principles, liberalization and privatization of the market are the most effective economic and political instruments stimulating economic efficiency and promoting competition between companies. Concurrently the efficiency of energy production will improve and a need of finding ways for the reduction of energy losses will emerge. The EU directives provide for the reduction of the monopolist domination in electricity and gas supply and free access of new energy traders to the market also in the case when large producers or the state owns transmission networks. According to the Energy Charter, free energy exchange between different countries and free energy transit must be provided. These principles of the EU energy policy are also the key tools of the Estonian energy policy.

North-Eastern Estonia is the most heavily polluted area. Two large power plants fired by oil shale - the Baltic Power Plant (1,390 MW_e , 686 MW_{th}) and Estonian Power Plant (1,610 MW_e , 84 MW_{th}) - are located near Narva. These plants produce over 95% of total electricity consumed in Estonia. The main pollutants (fly ash, SO₂ , CO₂ , CO , NO_x) are caused by energy production and consumption. Each year, millions of tons of alkaline ash containing several microelements are disposed of from the power plants to ash fields. Ash fields now cover surrounding areas of about 2,000 hectare, over 2000 million tons of ash having been disposed of there. The North-East area of Estonia requires the most immediate attention in improving the efficiency of power plants, in reducing the level of SO₂ emissions, in solving the ash removal problems, etc. In general the development of renewables is hindered by:

- the lack of taxation on fuels and energy. In the Scandinavian countries the tax system supports renewables primarily via taxes;
- very liberal market policy and low level of governmental intervention;
- urgent need for investments in all the areas of economy; and
- the lack of means for financing projects with long payback period (as a rule, the projects concerning the use of renewables have long payback periods); this problem could be divided into two parts - urban and rural.

In the big cities the heat companies have large district heating boiler houses. These energy companies have good opportunities to obtain loans for reconstruction of boilers to burn biofuels (wood, wood waste etc.). The barriers against usage of biofuels are the high transportation costs of biofuels, lack of space for fuel storehouses near the boiler houses, possibilities to choose other fuels (natural gas instead of HFO); and etc. In small towns and centers there are usually small central heating boiler houses (one or several). In most cases, there are good conditions to get biofuels and their transportation costs are low. Usually, there is enough space for fuel storehouses near the boiler houses. The main barriers against usage of biofuels are: the small annual revenue of rural energy companies (low security for loan); small projects (high transaction costs); and high percentage and short repayment time of loans from local banks.

The major challenges in meeting the financial requirements for the implementation of environment-friendly energy policies and strategies are: International banks and foundations consider environmental projects for Estonia too small; and the loan interests in domestic banks are too high.

Capacity-Building, Education, Training and Awareness-Raising: Actions undertaken to promote public awareness of energy-environment-related issues include: Green Movement; the Energy saving campaign in media (television, fliers/newsletters) (1995 - 1996); the Car free Day (September 2000); and Weekly environmental television programs - "Ozone" and "Environmental News".

The education in primary and secondary schools includes actions to promote an early awareness of energy-environment-related issues. In schools, lectures on energy saving and environmental protection are organized; the programme of biology includes reports on the environmental problems in the district, town or republic. In addition, Student's self-governments compile environmental projects. (for example, in the Tabasalu Gymnasium, Harju County, the students of the 12th form developed a project for the treatment of the municipal waste in the district where the main objective was improving student's awareness and proposals of organizing waste treatment for the local administration. A twin-commune in Norway shared its experience in this field.). Wide propagation of the possibilities of alternative energy sources (wind-, hydro-, bio-energy) is also used.

The major training programmes that have been introduced for capacity-building for technical supervisors and staff and researchers, in dealing with energy-related services are:

- Training Courses for Personnel in the Estonian District Heating Sector (May-July, 1999). Organisers: Danish Energy Agency and VEKS. Under Danish Environmental Related Energy Sector Programme for Estonia/Latvia.
- Training in Environmental Energy Management (TEEM), 5-7 May, 2000, in Tallinn. The training course was organised under EU Synenergy Programme.
- Climate Technology Initiative Training Course for Eastern Europe “Climate Technology and Energy Audit as a Tool for Improved Energy Efficiency”, September 26-29, 2000 in Tallinn. Co-organised by Estonian Energy Research Institute, IEA/OECD CTI and Danish Energy Agency.

To educate consumers on energy and environment related issues, there is a Manager Training Course in the Estonian Union of Co-operative Housing Association, in Tallinn (November-December, 1999).

Information: Energy statistics cover all enterprises in Estonia producing primary or converted energy, as well as industrial, construction, agricultural, transport, business and public enterprises. Data on energy production are collected from all enterprises producing primary or converted energy. Data on energy and fuel consumption are collected by sample survey. The population of survey comprises economically active enterprises. Enterprises producing energy and industrial, construction, agricultural, transport, business and public enterprises with more than 49 employees are enumerated completely. The rest of enterprises are sampled. Until 1991, data concerning the imports and exports of fuels and energy were received directly from enterprises. For 1992-1999, data of customs statistics were used, which were complemented by the data submitted by enterprises. Data on energy prices were collected on the basis of the methodology introduced by Eurostat in the Energy project for CEE-countries. Enterprises were grouped into small, medium and large size bands. The prices were calculated for each kind of commodity by branches and by size bands.

Information is disseminated and shared at the domestic and international level (Including government publications, forums, etc.) via proceedings, CD-ROMs and Web site of the Statistical Office of Estonia as well as via other sources (projects reports, proceedings of the Ministry of Environment and Ministry of Economic Affairs, etc.).

Following Internet web sites and libraries are available for public:

- www.riigiteataja.ee; State Gazette
- www.legaltext.ee; Database of the legal acts (in English)
- www.seadus.ibs.ee; Database of the legal acts (in Estonian)
- www.envir.ee; Ministry of Environment
- www.mineco.ee; Ministry of Economic Affairs
- www.eeri.ee; Estonian Energy Research Institute
- www.sei.ee; Stockholm Environmental Institute Tallinn Centre
- www.eco.edu.ee; Institute of Ecology
- Library of the Statistical Office of Estonia
- Library of the Ministry of Environment, and etc.

Research and Technologies: For better burning of Estonian local fuels (oil shale, peat, wood) the Estonian Energy Research Institute investigated and designed fluidised bed gasifier for the so-called two-phase combustion of these fuels: with gasification in the bubbling fluidised bed (or near it) and the combustion of the arriving combustible hot gas in a separate furnace space. A 1.5 MW prototype furnace with fluidised bed gasifier has been successfully operating in a boiler house of Co. Põltsamaa Soojus since 1993. Peat and wood waste are burned.

In Tallinn the public transport system widely uses trams and trolley-buses powered by electricity. The railway lines outside of Tallinn are electrified within 60...80 km extent. A rather small number of vehicles use gas (propane).

Financing: During the period of 1992-1998, the Energy Conservation Programme was financed by the state budget resources in the total amount of 82.2 million Estonian kroons (EEK).

	<i>Public source in million EEK</i>	<i>National budget in million EEK</i>	<i>% of the national budget</i>
<i>1995</i>	<i>19.0</i>	<i>16601</i>	<i>0.114</i>
<i>1996</i>	<i>14.7</i>	<i>20332</i>	<i>0.072</i>
<i>1997</i>	<i>8.7</i>	<i>25990</i>	<i>0.034</i>
<i>1998</i>	<i>8.7</i>	<i>28138</i>	<i>0.031</i>
<i>1999</i>	<i>0</i>	<i>27130</i>	<i>0</i>

See also under **Status**.

Cooperation: To restructure the large oil shale power plants in Narva, the State Enterprise Eesti Energia has planned to use ACFB combustion technology for oil shale instead of the PC technology. The largest energy companies (Foster Wheeler, Lurgi, ABB) are engaged in this project. Some small cogeneration aggregates working on natural gas have been imported. These aggregates are in use in small district heating boiler houses.

Estonian Energy Research Institute represents Estonian in the OPET Network (Organisation for Promotion of Energy Technologies).

Kyoto conference (1997) resulted in consensus decision (1/CP.3) to adopt a Protocol under which industrialized countries will reduce their combined greenhouse gas emissions by at least 5% compared to 1990 levels by the period 2008-2012. The Estonian target is to reduce greenhouse gas emissions 8% compared to 1990 levels. The situation in Estonian energy market is quite different. Half a century, Estonia was part of the Soviet Union. After restoration of Estonia's independence in 1991, the exports of electric energy and industrial products decreased substantially, in particular to the eastern market. Fuel prices rose sharply. This process caused a decrease in the production and consumption of energy and the Estonian target to reduce GHG 8% was achieved already in 1991. In spite of the achieved target Estonian energy companies and other enterprises continue to improve the efficiency of electricity and heat production, to reduce losses in electricity and heat transmission, distribution and consumption systems etc.

Estonia has got EcoLinks Challenge Grant to study the possibilities of methane use from municipal waste dump for heat production (Kuressaare town, Saaremaa County). Energy loans from Foreign sources include: World Bank - total USD 6,211,007 EEK 90,059,602; EBRD EEK 47,336,000; and EU energy loans EEK 13,403,000. On the basis of the PHARE Programme "Investment Preparation Facility, Regional Development and Energy Planning" 37 different energy planning projects were carried out in Estonia in years 1998-1999. It was found that in Estonia there are many payable renovation projects in the heat energy sector (the total cost about 7 million EUR). Danish Energy Agency has used the results of these investigations and will support the small municipalities in Estonia through the project "From Energy Plan to Implementation" to increase efficiency energy production, to promote the use of biofuels etc.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: The institutional basis for the implementation of the Estonian transport policy is constituted by: the Ministry of Transport and Communications; the Estonian National Aviation Administration; the Estonian National Road Administration; the Railway Administration; the Estonian National Maritime Board; and the National Vehicle Register.

The Departments of the Ministry of Transport and Communications undertake following actions:

The road transport department:

- Organises and manages the problems connected with domestic and international passenger and cargo transport, development of road and street traffic;
- Organises and manages the problems connected with traffic safety and environmental protection, training of drivers and transport personnel, registering and supervision of technical condition of the road transport vehicles;
- Organises preparation of road transport draft legislation;
- Issues road transport activity licenses and line permits; and
- Organises work of the governmental traffic commission.

The maritime department:

- Organizes and manages problems connected with the merchant marine, sea and river transport and vessel traffic, domestic and international passenger and cargo transport, work of ports, vessel traffic safety and environmental protection; and
- Organizes preparation of maritime transport draft legislation.

The railway transport department:

- Organizes and manages problems connected with maintenance and technical utilisation of railway infrastructure and rolling stock, railway traffic safety and environmental protection, training of railway personnel, development of domestic and international passenger and cargo transport and international co-operation in railway transport;
- Organizes preparation of railway transport draft legislation; and
- Issues activity licenses for railway transport operation.

The communications department:

- Organizes and manages problems connected with development and functioning of domestic and international public telecommunication and postal network and functioning of broadcasting system;
- Organizes preparation of communications draft legislation; and
- Issues activity licenses for operation in communications field.

The road department:

- Organizes and manages problems connected with use and development of road network;
- Organizes and manages problems connected with requirements on roads and environmental protection and road transport charges and fees foreseen to cover road maintenance expenses;
- Organizes preparation of draft legislation on road issues.

There exists cooperation between different departments.

Parliament, county governors and local councils are responsible for adoption of transport related environmental policies and strategies. The responsibility for development and implementation of the action plans is laid on the Government, county governors and municipal governments as well as all entrepreneurs and inhabitants.

Estonian transport sector has two roles. As a serving branch of economy transport sector has to create necessary connections and networks for normal functioning of the society. A high-quality transport system is one of the prerequisites for the competitiveness of the other branches of economy (industry, agriculture, energetics etc.) and therefore supports the whole socio-economic development of the state. In conclusion it can be said that both activities of transport sector have one main task – to increase national gross product and improve living standard of inhabitants.

Modern transport strategy is based on three balanced principles: individual freedom; accessibility; and environment friendliness and safety. Estonia follows the political agreement reached for the time being in the EU, which sets the building-up and preservation of sustainable society as the main strategic aim of development process. Thus, the strategic target for transport is also to build up a transport system that does not shift the burden of environmental, economic and social problems to the shoulders of next generations. Several fundamental political decisions have to be made here. Creating sustainable transport system involves not only efficient measures to guarantee traffic safety, but involves restrictions to the negative impacts of transport system. These are restrictions to: air pollution; energy consumption; noise level; damaging of wildlife and landscape; the decline of the quality of life in the cities; and land-use.

Creating Estonian transport network the following circumstances must be taken into consideration:

- geographical position of the territory of Estonia with respect to the most important attraction hubs of Russia and the EU;
- development of a new logistic thinking and reformation of distribution networks proceeding from that;
- the low average density of Estonian population, the concentration of main residential areas around Tallinn, Tartu and in the North-eastern Estonia;
- rapid growth in number of private cars, the main roads will be more loaded due to people driving to work; and
- unemployment in countryside, concentration of working places and economic activity in centers.

These immediate objectives will be achieved through the input of infrastructure investments, the key features of which will be:

- reconstruction of main roads and highways, carrying the main traffic flows, specifically construction and modernisation of the connections Tallinn-Tartu, Tallinn-Narva and Tallinn-Ikla, with the assistance of national loan programmes and EU assistance programmes in the nearest future, and furthermore the development of the regional road network;
- modernisation of railway infrastructure in east-west corridor, more specifically the reconstruction of Tallinn-Tapa-Narva and Tapa-Tartu-Petseri railway tracks, as well as the construction and extension of border stations;
- renovation and maintenance of international and coastal waterways as well as Estonian navigable inland waterways, development of port and harbour infrastructure and the realisation of a modern vessel traffic system.
- for better use of the possibilities of Estonia as a transit country creating the relevant healthy system in principles of public and private sector co-operation.

General aim must be taken at retarding the growth of absolute amounts of all the damaging emissions from transport. The next step should be to stop the growth at a certain level (e.g. starting from 2003) followed by later emission reduction¹.

The damaging of nature by acidification must be stopped.

The global warming of climate – the greenhouse effect – causes serious concern.

In the field of traffic safety, the aim is to achieve that the number of people killed in traffic accidents in one year would not exceed 100 by the year 2010.

In short term, we are aimed at stopping further fragmentation of urban and rural landscape. In longer term, the process must be reversed.

¹ One has to follow the strategy of environmental protection of Estonia and the relevant national program adopted in 1990.

Different associations, NGOs, for example Estonia Freight Forwarders Association, Friends of the Earth etc participate to the decision making process. Decentralised decision-making and participation of the public is a key approach to use local and regional knowledge for better solutions and to gain acceptance.

Free enterprise and competition form basis for the economic success of transport sector and its subtypes. In relation to transport, the state has a dual task to perform: a) to promote the competitiveness of national transport service on international market; and b) to influence the development of transport sector in view of the harmonious development of the country as a whole.

The development of transport must take place in line with the objectives of industrial, regional, social defence etc. policies. This balance between the somewhat antagonistic aspects based on the social agreement is defined as a transport development strategy and policy. The implementer of transport policy is the state and the state mechanisms of managing the transport sector form the basis for the development of transport.

Programmes and Projects: The major programmes undertaken with regards to the following:

- Better meeting the commercial, private, and public needs for mobility in both
- urban and rural areas;
- Promoting traffic efficiency, such as reduction of heavy traffic hours, provision of mass transport modes, etc.;
- Improving efficiency in fuel consumption;
- Reducing emissions from transportation, such as carbon dioxide, carbon monoxide, nitrogen oxides, particulate matter and volatile organic compounds;
- Reducing traffic-related accidents and damages; and
- Promoting non-motorized modes of transport, such as cycle ways etc.

In connection with the need to strengthen the European integration, the Ministry renewed and replenished the scientific research on international transport corridors traversing Estonia, compiled by the scientist of the Estonian Institute of Economy Mr Jüri Laving in May 1998.

In 1998-1999, according to the request from the Ministry, the Engineering Bureau "Stratum" Ltd conducted a research "Study of public transport requirements, assessment of effectiveness of existing line network and development of optimum line network in Estonian counties". Following the increase of the volume of the study, the deadline for the study was extended until March 2000.

In IV quarter of 1998 and I quarter of 1999, the development strategy for the infrastructure and services, supporting Estonian trade and transport for 1999-2006, was worked out in co-operation with the World Bank and the Danish Ministry of Transport. Within the same period, the Ministry worked out Estonian transport and communications development plans for 1999-2006 that were approved by the Government on its meeting on 9 March 1999.

In October-November 1999, the transport and communications chapters of the National Development Program and the ISPA strategy were finalized and presented to the EU Commission.

According to the Danish aid program for the Central and Eastern European countries and the agreement on co-operation and technical assistance concluded between the Danish Ministry of Transport and the Estonian Ministry of Transport and Communications, the research project "Assessment of external costs for different modes of transport, taking into account the environmental impact of these transport modes" to be concluded in 2001, was started in 1999. In 1998-1999, in total 37 development and study projects were concluded, continued or started within the Ministry and its administrations.

Status: The legal basis of the road, traffic, transport and communications system is established by laws of the Estonian Republic and international conventions and agreements that Estonia has acceded to.

On 1 May 2000, the roads, traffic, transport and communications sector was regulated directly by following laws and codes:

- The Traffic Act (State Gazette 1992, 12, 193; 1995, 2/3, 3; 1996, 16, 268; 1997, 86, 1459; 1999, 16, 272);
- The Road Act (State Gazette I 1999, 26, 377; 93, 831)²;
- The Railway Act (State Gazette I 1999, 29, 405)³;
- The Merchant Shipping Code (State Gazette 1991, 46-48, 577; State Gazette I 1993, 65, 923; 1995, 54, 882; 1996, 78, 1380; 1997, 77, 1315; 1998, 2, 47; 23, 321; 30, 409; 200, 35, 221);
- The Port Act (State Gazette I 1997, 77, 1315; 1999, 88, 805);
- The Maritime Safety Act (State Gazette I 1998, 2, 47; 1999, 95, 843; 2000, 29, 171);
- The Ship Property Act (State Gazette I 1998, 30, 409; 1998, 59, 941);
- The Ship's Flag and Registers Act (State Gazette I 1998, 23, 321; 59, 941; 1999, 10, 149);
- The Aviation Act (State Gazette I 1999, 26, 376)⁴;
- The Communications Act (State Gazette 1991, 3, 49; 200, 18, 116);
- The Cable Act (State Gazette I 1999, 25, 364);
- The Telecommunications Act (State Gazette I 1999, 2000, 18, 116);
 - The Public Transport Act (State Gazette I 2000, 10, 58); and
 - The Heavy Vehicle Tax Act (State Gazette I 2000, 81, 515).

In addition to the acts mentioned above, the following laws have direct regulatory influence on implementation of transport policy:

- The Traffic Insurance Act (State Gazette I 1995, 48, 744; 1996, 90, 1612; 83, 1488; 1998, 2, 43; 60, 954);
- The Motor Fuel Excise Tax Act (State Gazette I 1993, 38, 563; 1995, 83, 1445; 1996, 74, 1308; 901613; 1997, 77, 1314; 73, 1201; 1998, 57, 862; 1999, 10, 158);
- The Motor Vehicle Excise Act (State Gazette I 1995, 17, 236; 1998, 111, 1813; 1998, 56, 588);
- The Liquid Fuel Special Marking Act (State Gazette I 1997, 73, 1201; 86, 1464);
- The Surrounding Air Protection Act (State Gazette I 1998, 41/42, 624; 1999, 10, 155; 95, 843);
- The Product Safety Act (State Gazette I 1998, 40, 613; 1999, 82, 753);
- The Customs Act (State Gazette I 1998, 3, 54; 36/37, 552; 51, 756);
- The Chemicals Act (State Gazette I 1998, 47, 697);
- The Business Act (State Gazette I 1995, 26/28, 355; 1996, 40, 773; 51, 967; 1997, 16, 258; 48, 774; 77, 1313; 1998, 2, 48; 23, 322; 36/37, 552; 59, 941; 30, 410; 91/93, 1500; 1999, 23, 355; 24, 360; 57, 596; 10, 155; 102, 907; 2000, 29, 172);
- The Law of Property Act (State Gazette I 1993, 39, 590; 1995, 26/28, 355; 57, 976; 1996, 45, 848; 1997, 52, 833; 1998, 12, 152; 30, 409; 59, 941; 26, 377; 27, 380; 1999, 44, 509);
- The Competition Act (State Gazette I 1998, 30, 410; 1999, 89, 813);
- The Legal Entities Establishment and in these Participation by State Act (State Gazette I 1996, 48, 942; 1998, 59, 941);
- The Administrative Law Infringement Act (State Gazette 1992, 29, 396; State Gazette I 1999, 41, 496; 45, statement; 58, 608; 60, 616; 87, 792; 92, 825; 95, 843); and
- The Stamp Tax Act (State Gazette I 1997, 80, 1344; 2000, 5, 32; 29, 169).

In addition to measures listed above, the following main arrangements were taken in 1998-1999 to lessen the negative impact of transport to environment:

² Upon entering into force of the Road Act on 23 March 1999, the previous Road Act (State Gazette 1991, 1, 1; 1996, 49, 953) ceased to be valid.

³ Upon entering into force of the Railway Act on 1 May 1999, the previous Railway Act (State Gazette I 1995, 5, 4; 1998, 2, 45) ceased to be valid.

⁴ Upon entering into force of the Aviation Act on 1 September 1999, the previous Aviation Act (State Gazette 1993, 36, 557), ceased to be valid.

- Following the tightening of requirements on trucks participating in international transport, the replacement of high tonnage trucks with “green” and “super-green” ones continued in 1998-1999 (there were 188 “green” and 912 “super-green” trucks in Estonia on 1 January 2000).
- The regulation no. 45 of the Minister of Economy “Adoption of quality specifications for liquid fuels” of 29 December 1997 introduced more strict norms for liquid fuels to be distributed in Estonia starting 1 January 1998. The same regulation stipulates that distribution of ethyl-petrol, environmental-hazard class “p” for cars, is authorised until 1 January 2000.
- On 26 September 1998, the “Regulation of Technical Inspections of Vehicles” established by regulation of the Minister of Transport and Communications, entered into force. This regulation establishes requirements for vehicles registered in the Estonian Vehicle Register on the assumption of the UN Convention on Road Traffic, concluded in Vienna in 1968, the UN/ECE Inland Transport Committee’s joint decision on construction of vehicles, standards of ISO, directives of EU and legal acts in force in Estonia.
- On 1 January 1999, the act on protection of surrounding air entered into force. This act regulates activities causing pollution of surrounding air, damage to the ozone layer and factors, leading to the climate change. The regulation no. 5 of the Minister of Environment of 25 January 1999 established maximum value for level of pollution of surrounding air.
- On 1 April 1999 and 1 July 1999 accordingly, amendments to the Vehicle Excise Act entered into force (State Gazette I 1998, 111; 1831 and State Gazette I 1999, 56, 588). According to these amendments, the excise duty for imported vehicles with bigger cylinder volume and older vehicles, was raised significantly.
- On 1 July 1999, the regulation no. 24 of the Minister of Transport and Communications of 21 April 1999 entered into force. This regulation renews and amends the “Regulation of domestic transport of hazardous cargo”, established by regulation no. 3 “Rules for transport of hazardous cargo by road” of the Minister of Transport and Communications of 15 January 1996.
- In 1998-1999, officials of the Ministry of Transport and Communications and administrations of the Ministry and scientists of the Tallinn Technical University took part in the Phare multi-county project “Transport and environment”. This project had an objective to integrate the protection of environment in all Phare countries and develop a regional approach in order to decrease the environmental pollution caused by the increase of traffic volume.

In 1997-1999, the Ministry of Transport and Communications prepared a bill of the Public Transport Act that was adopted as an Act by Riigikogu on 26 January 2000⁵. The provisions of the Public Transport Act are adjusted with the principles in force in European Union concerning public service obligation, state support to transport and conditions on access to transport market for entrepreneurs. The act provides allocation of single-purpose support to operator providing regular services on the basis of a public service contract as well as investment support for procurement of public transport vehicles, construction or renovation of public transport infrastructure objects and conducting public transport studies. State budget subsidies are foreseen to support county regular bus lines on the basis of a public service contract, all domestic (without urban) railway lines and ship or ferry connection between Estonian mainland and islands as well as air connection with islands.

The recent tendencies in Russian economy have strongly affected Estonian economy, in particular rural regions. The sharp decline in the export of agricultural products and foodstuffs has strengthened the tendency towards diminishing the number of jobs in rural regions. People have to look for jobs at ever-farther places from their place of residence, predominantly in cities. In this connection the travel distances per day lengthen, the load on infrastructure and traffic density in cities increase. It is of primary national importance to create new jobs in the country and to decentralise investments from Tallinn.

The investments have been concentrated to the capital owing to the location of international port, railway junction and airport in Tallinn. Although the cost of living in the capital is relatively high, the logistical chains necessary for business are shortest and most reliable here.

Investments in production in rural regions, however, are economically justified only if, in addition to availability of qualified workforce, there is also an access to transport and other infrastructure that meets necessary requirements.

⁵ The Government gave the bill of the Public Transport Act into proceedings of the Riigikogu in July 1999 and the Riigikogu passed this Act on 26 January 2000 (State Gazette I 2000, 10, 58) to be entered into force on 1 October 2000.

This range of problems acquires particular importance in relation to Estonian islands, the role of which as a component of the country's economic region depends on the quality and reliability of transport links.

Capacity-Building, Education, Training and Awareness-Raising: Estonian National Road Administration organise some campaigns to promote public awareness. For example, the so called car-free days. People can use non-motorized transport on that day. The other campaign is about maintenance of motor vehicle. It means that the drivers can carry out technical control free of charge. There are also days, when schoolchildren pick up garbage near the roads.

In an Action Plan for Estonian Environmental Protection, approved by the Government on 26 May 1998, one of the main objectives in reduction of air pollution is increase of public transport share in passenger transport. For promotion of this, following measures were taken in 1998-1999:

- In 1998, local (urban and county) bus lines were subsidized by 108.0 million kroons and domestic rail passenger transport by 98.0 million kroons from state budget. In 1999, 127.9 and 145.6 million kroons accordingly were allocated for same purpose. Procurement of new city-buses was subsidized by 35.0 million kroons in 1998 and 10.0 million kroons in 1999 from state budget.
- Local bus lines and tram and trolley lines were subsidized by 226.9 million kroons in 1998 and by 273.0 million kroons in 1999 from budgets of local governments. Procurement of new city-buses (leasing payments) was subsidized by 60.8 million kroons in 1999 from budget of local governments.
- With the help of subsidies from above mentioned state and local governments budgets, 34 and 31 Scania city-buses respectively, produced in a plant of the Baltscan Ltd in Tartu, were procured for public transport companies in Tallinn, Tartu, Pärnu, Viljandi and Võru in 1998 and 1999. 17 buses, produced in 1999 were ordinary and 7 coupled buses (towing bus + bus-trailer). First coupled buses started to work on *the most* congested lines in Tallinn in November 1999. The bus plant has produced 117 buses and 7 coupled buses between the beginning of the production in 1995 and the end of 1999.
- According to the Swedish aid programme for the Baltic States, 59 second-hand city and suburban buses, cash registers and spare parts were given to Estonia between 1998 and 1999, in total value of 24 million kroons.
- The Public Transport Act, passed on 26 January 2000 and entering into force on 1 October 2000, anticipates continuous support of public transport from state and local government budgets. Following the Public Transport Act, a long-term development plan for public transport has planned to be elaborated in 2001-2002. This plan will foresee fiscal-policy, technical and organisational measures to increase the competitiveness of public transport, stop the decrease of its share in total transport and ensure the growth of transport volumes compared to private transport.

There has been many campaigns arranged by Estonian National Road Administration to educate public on traffic safety. For many years in the beginning of school year there is the campaign of children's traffic safety. At school traffic specialists convince schoolchildren to cross the street at the right place.

The other campaign is about maintenance of motor vehicle. It means that the drivers can carry out technical control free of charge.

There are no special lessons in primary and secondary schools, but sometimes traffic specialists are invited to speak about transport and environment.

Information: Information is gathered by The Ministry of Transport and Communications and by its departments, relevant administrations and by Statistical Office of Estonia.

There are information and scientific data on vehicle emissions and traffic conditions in public libraries in special journals of transport and environment. The main information about traffic conditions and vehicle emissions can find on web sites of Estonian National Road Administration and the Ministry of Transport and Communications (www.tsm.ee) and the Ministry of Environment.

Research and Technologies: The promotion of the use of alternative energy sources for transport is not in the competence of the Ministry of Transport and Communications.

Estonian Road Administration have built up a Road Weather Information System, consist of 24 Road Weather Stations (RWS), during the years 1995-1999.

There are 2 type of RWS-s installed on the main and basic road network. 18 stations are delivered from Sweden (Aerotech Telub AB) and 6 stations from Finland (Vaisala Oy). The typical RWS measures following values: air temperature, air humidity, precipitation intensity and type, wind speed and direction, road surface temperature, and ground temperature (8 cm below road surface). One or two central computers collects the data from all weather stations during half-hour in winter season and inserts this data into the web server. Road masters will have access to the weather data through the normal PC computer using common WWW browser. In addition to the real data, Estonian Meteorological and Hydrological Institute provides roadmasters with weather prognoses 4 times per day in winter season. From this autumn, a new weather radar will be installed beside the Tallinn and the negotiations are now take place for transfer the radar picture to road authorities.

Road reconstruction is one of the strategic priorities of the economic, social and political development in every country. In Estonia, the need for road reconstruction and rehabilitation is urgent because of bad quality of roads and increasing traffic density. The main road Tallinn-Tartu-Võru-Luhamaa, which connects the capital city of Tallinn with the second largest city of Tartu, and with the marginal region in South East Estonia, is in non-reasonable bad situation as well. The need for reconstruction of this road is increasing year by year which is also supported by the road accidents statistics. On the other hand, this road passes some environmentally sensitive areas.

Financing: The main sources are state budget, structural funds, loans from international financial institutions, bilateral assistance etc.

To achieve the main objectives of our transport policy, further economic-strategic activities will be developed in the following directions:

- development of free entrepreneurship in the transport sector, unification of access rules, terms and conditions of carriers for entering the transport services market;
- developing the national support system for infrastructure maintenance and development, as well as starting of the involvement of private sector means in the construction and operation of transport infrastructure;
- keeping state property and control only over the most important transport infrastructure in conjunction with further privatisation of national carriers;
- adjustment of transport fiscal policy to rules of the market economy and application of “user pays” and “polluter pays” principles, as applied in EU;
- increase of traffic safety on roads and streets through initiation of a long-term national traffic safety programme; and
- improvement of legal regulation of transport and harmonisation with the EU rules, norms and standards;

Cooperation: Since 31 January 1992, the Estonian Republic is a member of the International Maritime Organisation (IMO). By November 1999, the IMO had 157 member states. On 20 November 1993, the Riigikogu ratified the Convention of the International Hydrographic Organisation (IHO) and since 19 February 1997 the Estonian Republic is a member of the IHO. Since 13 May 1993, Estonia is a member of the Hydrographic Commission of the Baltic Sea States and since 1 January 1994, the Maritime Board is a member of the International Association of Lighthouse Administrations (IALA). On 1 July 1998, the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code, SOLAS Chapter IX) that is compulsory for passenger ships, oil-, chemical- and gas-tankers, bulkers and fast cargo ships, entered into force. By 1 January 2000, Estonia had acceded to 10 international vessel traffic and maritime conventions and protocols and 3 conventions and protocols concerning oil pollution and transport of dangerous goods. There is a plan to join another 12 vessel traffic and maritime conventions and protocols during 2000-2002 (see for Appendix 1). Many companies (the Port of Tallinn Ltd., the Estonian Shipping Company Ltd. etc.) are members of different international organisations. Many Estonian captains are members of the International Harbour Masters Association and the International Captains Union. Estonia has concluded maritime agreements with the Netherlands, Germany, Greece, Latvia, Lithuania and Ukraine and agreements with Turkey (1997), Cyprus (1998) and Poland (1999) are

initialled. Agreements with Morocco, Italy, China, Finland and Russia are under preparation. Co-operation with Lithuanian, Latvian, Finnish, Swedish, Danish, Russian and other maritime administrations is developing.

The transport policy of the Estonian Republic is aimed at active international co-operation. For the present, Estonia has acceded to the following important global and European international transport organizations:

- European Conference of the Ministers of Transport – CEMT (1992);
- International Maritime Organisation – IMO (1992);
- International Fund for Compensation of Damage from Oil Pollution (1993);
- International Civil Aviation Organisation – ICAO (1992);
- European Civil Aviation Conference – ECAC (1995); and
- International Hydrographic Organisation – IHO (1997).

In addition to this, Estonia is represented on the level of public and private institutions in the following international organizations:

- Organization of Railway Co-operation – OSShD (members are the Ministry of Transport and Communications and the Joint-Stock Company Estonian Railways, 1992);
- International Railway Union – UIC (in 1993, the Joint-Stock Company Estonian Railways restored its membership since 1924);
- Community of European Railways – CER (Joint-Stock Company Estonian Railways, 1999);
- International Road Federation – IRF (National Road Administration, 1991);
- International Road Workers Council – BRC (National Road Administration, 1994);
- Permanent International Association of Road Congresses – PIARC (National Road Administration, 1994);
- International Road Transport Union – IRU (Estonian International Road Hauliers Association, 1992);
- International Association of Lighthouse Administrations – IALA (National Maritime Administration, 1994);
- Baltic Ports Organisation – BPO (Joint-Stock Company Port of Tallinn, 1993);
- Baltic Pilotage Administrations Commission – BPAC (1994);
- International Air Transport Association – IATA (Joint-Stock Company Estonian Air, 1992);
- International Federation of Forwarders Associations – FIATA (Estonian Forwarders Association, 1995);
- International Organisation of Tests and Drivers' Licenses – CIECA (National Vehicle Registration Center, 1996) and others.

By 1 January 2000, the Estonian Republic had joined to 48 (39 by 1 January 1998) international transport and traffic conventions, agreements and protocols. Joining to 14 agreements and protocols has being prepared (see for Appendix 1).

By 1 January 2000, Estonia had signed, initialed or prepared intergovernmental passenger and goods transport agreements with the following number of countries:

- railway transport – signed 4, initialed 1, in preparation 2;
- road transport – signed 27, initialed 4, in preparation 6;
- sea transport – signed 6, initialed 3, in preparation 5; and
- air transport – signed 16, initialed 7, in preparation 7.

Additionally, a transport frame agreement with Russia was signed in 1991 and negotiations are going on for conclusion of an agreement on European common air space.

The Ministry of Transport and Communications and the public entities within its administrative domain co-operate with corresponding institutions in all countries within Baltic Sea region and many East- and West-European and NIS countries. Closer contacts are with Transport Ministries and administrations of the Netherlands, Canada, Norway, Poland, Sweden, Germany, Denmark, Russia and some other countries. Main lines of the co-operation are development and approximation of legal basis and regulatory structures to the European Union ones, formation of

complete transport policy, development of international transport corridors and training of specialists. The Ministries of Transport of Estonia, Latvia and Lithuania continue co-operation in a framework of Transport and Communications Committee of the Baltic Council of Ministers⁶, established in 1994, in formation of common transport policy, approximation of legal and regulative transport environment, promotion of bilateral and transit transport, development of infrastructure and realization of common projects.

In conjunction with the intensification of the integration process with the European Union, close contacts have been established with the general directorates for transport and energy, regional development and enlargement of the European Commission as well as with the Transport Committee of the United Nations Commission for Economic Co-operation and other organizations.

The following transport projects with Estonian participation, financed within the framework of Phare Multi-Country Programme, are being currently implemented in Central and Eastern European countries:

- Transport Infrastructure Needs Assessment in Central and Eastern Europe;
- Updating of Transport Infrastructure Costs in Acceding Countries;
- Management and Technical Training;
- Early Warning System for the Baltic Sea;
- Maintenance of Road Surfaces in Central and Eastern Europe;
- Air Transport Operational Safety Improvement;
- Traffic Forecast for the Ten Pan-European Transport Corridors of Helsinki;
- Road Safety in Central and Easter Europe;
- Transport and the Environment;
- Extension of Trans-European Rail Freight Freeways to the Central and Eastern European Countries;
- Road Transport Charges in Central and Eastern European Countries;
- Costs and Benefits of Enlargement;
- Modernisation of the Air Transport Sector in the Ten Central European Candidate Countries for EU Membership;
- European Rail Traffic Management System Strategic Study for CEECs;
- Improvement of Competitiveness of Rail Transport in the CEECs; and
- Vocational Training Centres in Road Transport.

More comprehensive co-operation is going on with Swedish (procurement of buses, traffic safety, technical assistance), Danish (assessment of transport external costs, environment projects), Norwegian (training and technical assistance) and Finnish (ship traffic) administrations. Efficient bilateral co-operation is continuing with the Netherlands, first of all in connection with development of ports and establishment of the system of the Vessel Traffic Services (VTS).

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⁶ The co-operation between the Ministries of Transport and their subordinate establishments on Estonia, Latvia and Lithuania started in 1960's. Between 1989 and 1993, the co-operation was within the framework of the Baltic Transport Co-operation Council, established in November 1989.

CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

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

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: The Government of Estonia has provided a legal framework for dividing the responsibilities and tasks among national, community and municipal levels. As a rule, the prevention of environmental risk factors is being financed by the agent of the risk. When it is impossible to identify any specific risk agent, the expenses are accordingly borne by the State or municipalities. The Government of Estonia has enumerated the following objectives in the area of health: integration of environment and development at the policy, planning and management levels providing an effective legal and regulative framework; development and promotion of the integrated provision of environmental infrastructure, and optimization of the existing infrastructure for the purposes of necessary specialized environmental health services; improvement of the technical capabilities for the monitoring, assessment and management of environmental risks to health; reduction in differences in urban and rural health needs and assessment and evaluation of the main causes of the premature death of the population; drafting a national strategy for development of qualified human resources; capacity-building for decision makers on different levels; and assessment and identification of the special needs of vulnerable groups – children, youth, and women.

Programmes and Projects: The main national programmes to prevent non-communicable and communicable diseases are as follows:

- *The Alcoholism and Drug Abuse Prevention Programme 1997 – 2007* priorities include: monitoring and data collection, increasing public awareness about the health related hazards of alcohol and drugs, reducing the growth of alcohol and drug related crime, providing advice, treatment and information.
- *The new National HIV/AIDS Prevention Programme for 2002 – 2006* concentrates more activity on the collaboration with different institutions. This programme continues the previous prevention programme 1997 – 2001 work against other sexual transmitted diseases as well.
- Two-year WHO/DEPA project *Implementation of National Environmental Health Action Plan in Estonia* was finished in the end of 2001. On the end of the project was composed an overview of the NEHAP implementation during 1999 – 2001.
- The *Programme on Tuberculosis Treatment of Estonia 1998 – 2003* has established directly observed treatment strategy and the nationwide actions achieved decrease of TBC cases.

Status: The ongoing work to maintain high vaccination coverage has been successful. A decrease of prevalence of smoking has been significant among adults but not among schoolchildren. Smoke-free working environment has been increasing during the last five years. The prevalence of drinking strong alcohol, wine and beer is increasing. Some progress has occurred in the protection of air and freshwater as well as in waste management, which have decreased risks for health.

Capacity-Building, Education, Training and Awareness-Raising: Institutions necessary for the training of working environmental health specialists have been created; health education has been introduced to educational institutions; and new strategies for the training of environmental health and public health specialists are being developed. The project *Capacity Building in Health Protection* has started from 2002 in the frame of the MATRA Pre-accession Projects Programme (The Netherlands). The aim of this project is the strengthening of the health protection system in Estonia, particularly the improvement of the health protection policies and strategies, improvement of the work methodologies and improvement related information system.

A new Health Development Institute is being created to co-ordinate of national public health programmes as well as applied research and training in the field of public health, including environmental health.

The aim of consolidation and structural reorganizations in the field of public health is to strengthen capacity of the leading staff giving more autonomy and a wider range of responsibilities in the area of policy implementation.

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: Local authorities are responsible for handling the population's social problems (e.g., housing). New legislation - the Constitution of 1992, the Land Law, the Property Rights Law, the Law on Privatization, etc. – is regulating issues related to human settlements. These need to be improved since all essential reforms have not yet been fully implemented.

Programmes and Projects: No information available.

Status: The decades from the 1960s to the 1980s were characterized by extensive construction in towns and in rural areas of standard large-panel apartment buildings for up to 130,000 people. Soviet policy resulted in rapid growth in the urban population and largely depopulated rural areas. Abandoned villages are now being revived since farms are being returned to their former owners. The population in large towns is also decreasing because of migration and the departure of the foreign military. Currently, the main activity in this area is the planning and construction of “inhabitant-friendly” housing areas and renovation of the large panel buildings of the 1960s. Privatization of housing areas is limited due to the poor conditions of living quarters and to the lack of financial resources of potential buyers. The financial resources of local governments are also limited. Thus, the implementation of the anticipated measures has not been fully satisfactory, for example, purification equipment for sewage has not been installed to anticipated levels. Similarly, energy and transport systems, which are comparatively well established, have had problems with their maintenance.

Capacity-Building, Education, Training and Awareness-Raising: Local authorities are responsible for handling the population's social problems (e.g., housing). One obstacle to the decentralization of management is the lack of expertise within local government. Sustainable and democratic planning methods are being enhanced through the training of planning experts. Estonia has received “know-how” support from the Nordic countries, Germany and the Netherlands.

Information: No information available.

Research and technologies: No information available.

Financing: As an economy in transition, Estonia needs external help in reconstructing and redesigning its economy and structures. In order to renovate housing stock, both national and international funding (e.g., through loans) is necessary.

Cooperation: Approximately US\$ 722 million of external funding will be required in order to implement all planned activities. The external funding resources include: the Nordic Council of Ministers; the International Federation for Housing and Planning (IFHP); the Nordic Investment Bank (NIB); the European Bank for Reconstruction and Development (EBRD); and the United Nations Economic Commission for Europe. See also under **Capacity-Building, Education, Training and Awareness-Raising**..

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: The Ministry of the Environment governs all aspects of society that are related to the environment. A National Council of Sustainable Development and the Joint Council of Nature Societies on Sustainable Development have also been established. At the beginning of 1994, the Ministry of Environment created a framework law of sustainable development, which is intended to state the main principles of sustainable development and to establish responsibilities on the enforcement of various activities. In 1995, the Act on Sustainable Development was passed. In accordance with this Act, the National Environmental Strategy has been prepared, an elaboration of a National Environmental Action Plan has begun and the national forestry policy has been completed. In addition, the following bodies have been established: A High-level Commission on Sustainable Development; an Executive Commission of the Ministry of the Environment; and a Steering Commission in the Ministry of the Environment.

Programmes and Projects: No information available.

Status: As an economy in transition, Estonia's focus has been on property and land reform during recent years. Both the Government and the Parliament have concentrated on the preparation of laws and implementation of reforms. Recent years have not been very favorable for promoting environmental policy.

Capacity-Building, Education, Training and Awareness-Raising: A popular edition of the Agenda 21 has been published in Estonian and introduced to members of the Parliament, members of the Government, civil servants and local authorities, entrepreneurs as well as to the public.

Information: In connection with the implementation of the UN Convention on Climate Change and the Biodiversity Convention, national reports based on broad scientific research have been published.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: The Estonian Parliament ratified the UN Framework Convention on Climate Change and the Biodiversity Convention in 1994.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: The Ministry of Environment has the prime responsibility for climate change-related matters. An inter ministerial committee on the implementation of the Convention was established in January 1995. It includes representatives from the Ministries of Economy, Environment, Energy, Agriculture, Foreign Affairs and Transport, as well as several individual scientists. Both NGOs and the scientific community participate in decision-making in this area.

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

Status: No information available.

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

Information: Estonia presented its first national report to the first Conference of the Parties (COP1) in March 1995. In 1996, the In-depth Review Team, composed of the Secretariat of the UNFCCC, visited Estonia in order to review the National Report and gather additional information on the implementation of the Convention. A report of the results of this visit was expected to be ready by the end of 1996.

Research and Technologies: No information available.

Financing: Financing for this area comes mainly from international sources.

Cooperation: Estonia signed the Montreal Protocol in 1996 and prepared the latest report to the Montreal Protocol Secretariat in 1995. It signed the United Nations Framework Convention on Climate Change (UNFCCC) in Rio de Janeiro in June 1992. The Parliament ratified the Convention on May 11, 1994, and the Act on Ratification of the UNFCCC was declared by the President on May 26, 1994. The Convention then entered into force for Estonia on October 28, 1994. Estonia submitted the latest report to the UNFCCC Secretariat in 1995. Currently, Estonia also participates in two United Nations Environmental Program/ Global Environmental Facility (UNEP/GEF) Projects: "Country Case Studies Programme on Climate Change Impacts and Adaptation Assessment, Phase I", and "Economics of Greenhouse Gases Limitation, Phase I".

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

Decision-Making: The Ministry of Environment, in cooperation with municipalities and foreign partners (Nordic countries), organizes the work of pilot projects for the dissemination of skills and knowledge required for the production of comprehensive plans in compliance with principles of sustainable development and democracy. The overall objective is to complete up-to-date comprehensive plans for all municipalities by the year 2005. New legal acts (e.g. Planning and Building Act, 1995; Local Government Act, 1994; Land Reform Act, 1996) and planning regulations and norms (e.g. order of design permit issue, 1996; draft norms of Estonian street design) have been implemented.

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

Status: Over the 1945-1989 period, plans for all Estonian towns and rural settlements were produced, as well as district and national plans. With the re-establishment of independence in Estonia, revision of all the plans proved necessary. The objective of the revision was to create an awareness of planning problems at all administrative levels and to exert pressure on local governments to deal with development problems. Local governments have revised the existing plans and, proceeding from legal acts, reached the following decisions: 19 municipalities and 4 towns have new legally appropriate plans; 26 municipalities and 11 towns are in the process of producing plans; 315 small towns and 36 towns maintain revised plans; and 40 earlier plans are subject to invalidation.

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

Information: No information available.

Research and Technologies: No information available.

Financing: In accordance with valid legislation, comprehensive planning for municipalities and towns is generally financed by local government. County and national planning schemes are financed by the state. Planning in rural municipalities and towns is financed by local governments. Pilot projects are supported from the state budget. Foreign aid has been available for training and advanced training (Finnish Ministry of Environment, Swedish SIDA, IFHP, PHARE). Financing has been insufficient for planning. County governments would require approximately 200-300 000 EEK per year from the state budget for targeted financing. Rural municipalities and towns would require targeted planning support of approximately 200-400 000 EEK per county annually (1 USD = 12,2 EEK).

Cooperation: The first phase of the joint project of all the countries around the Baltic Vision & Strategies around the Baltic Sea 2010 (VASAB 2010) was completed as an international plan in 1994. In the second phase of the joint project, the Estonian Ministry of Environment is participating in five theme projects. Through VASAB 2010, a continuous and integrated planning process in cooperation with Baltic countries has evolved. The production of country plans has been initiated in each of the 15 countries. According to the legal acts, these must be completed by the year 1998. Work on the national plan ESTONIA 2010 was initiated in cooperation with county governments and ministries in 1995 and is envisaged to last for three years. Other examples of cooperation by Estonia include the programmes: Tampere-Helsinki-Tallinn-Riga Development Corridor; Via Baltica; Larger Baltic Islands Development; Baltic Compendium of Planning Legislation; Network of Cities; Opening Estonian Coastal Zone for Tourism; various county, urban and municipal planning schemes with involvement of foreign experts and instructors; joint project of the border town Valga-Valka with ECOS Overture (EU) and with Finland and Sweden; municipal cooperation, i.e. R  pina town and R  pina municipality, planning cooperation between P  psi Region municipalities, and others. See also under **Financing**.

CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: The Ministry of the Environment and the Forestry Board are the institutions primarily responsible for sustainable forestry in Estonia. In order to accelerate the development in the forest sector and to improve the basis for legislative reforms, the Ministry of Environment decided in early 1995 to launch the Estonian Forestry Development Programme, which includes the task of formulating a National Forest Policy. The objectives set for the policy formulation process were to define the general objectives for the development of the forest sector, and to determine the action to be taken by the public sector in order to reach these objectives. When formulating the final draft, the Government will draw on public input and debate on the revised draft of the Forest Policy. The final draft will be approved as the National Forest Policy, thus constituting the basis for formulating new legislation as well as development and investment programmes for the forest sector. It is anticipated that the National Forest Policy will be approved in 1997. Working Groups have been the main vehicle for examining various issues. Their members represent all main interest groups including the Forestry Department, various Government Ministries, Forest Industries, Private Forest Owners and non-governmental organizations. The main task of the Working Groups has been to identify and analyze suitable development alternatives in their special field. To support the analysis, a number of special studies have been carried out. Based on recommendations of the Working Groups, the National Coordinator's Office prepared the first draft of the Forest Policy and submitted it to the Steering Committee, which is an official body appointed by the Government. The Committee is headed by the Minister of Environment, and the members include civil servants from key ministries as well as representatives of the private sector and non-governmental organizations. The Committee produced the second revised draft focusing on issues requiring political decision-making, and will later submit it for the Government's consideration.

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

Status: In the early 1990s, the Estonian forestry sector was organized largely on the basis of administrative structures inherited from the Soviet era. The adjustment to a market economy and new environmental standards proved to be slow and difficult, and gradually it became apparent that a thorough overhaul of the sector was needed. The principal issues were related to organizing public forest administration, establishing an appropriate balance between forest production and conservation, and providing support to private forest owners.

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: Estonia cooperates with the Helsinki Process and with Economic Commission for Europe (ECE)/Food and Agriculture Organization of the United Nations (FAO).

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

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 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

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

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The Parliament, the Ministry of Agriculture, and the Ministry of the Environment are the institutions primarily responsible for sustainable agriculture and rural development policy in Estonia. For the promotion of more sustainable agricultural management on farm level, the Act on Organic Agriculture was enacted in 1997, and it was amended in 1999. With the Land Amelioration Law, the Shore and Coastal Protection Law and the Law on Sustainable Development, the Estonian Government has improved the water resource policy. In 1999, the draft of the Codes of Good Agricultural Practice and the draft of the Plant Protection Act were prepared. Agricultural policy aims at the situation where agricultural producers can manage on their own, without economic support from the Government. This development plan coincides with the political position of the Republic of Estonia, concerning the accession to the European Union. The objective of Estonian agricultural policy is to prepare the Estonian agricultural sector for the accession to the EU, including preparation of economic partners involved in the agricultural sector, for changes on the market in agricultural products. In order to decrease environmental stress, the Estonian National Environmental Strategy, NES, has set the following important goals for the sector of agriculture: preserve agricultural landscape characteristics of Estonia as a part of cultural heritage; organize efficient manure management on the farm; introduce the HELCOM recommendation for the use of mineral fertilizers, manure and pesticides; achieve a balance between the number of animals and the area of arable land; avoid concentration of agriculture in the areas susceptible to water pollution; and to promote biological farming.

The detailed National Environmental Action Plan (NEAP) was developed within the period of April 1997 to April 1998. The wider objective of the NEAP is to pave the road for the further progress towards sustainable development by the efficient implementation of the policy goals stipulated in the NES. In 1992, active rural communities initiated the Estonian Village Movement with appealing to the Estonian Government in order to get assistance for rural development issues. In April 1996, the first Rural Assembly for Villages was held. The final report of the Assembly was published and sent to the Parliament, to the Government and to local communities. The Assembly decided to build up a non-governmental organization, the Estonian Movement of Villages and small towns, KODUKANT (countryside), which was founded before the second Rural Assembly in October 1997. The movement involves branch organizations from all the 15 counties.

Programmes and Projects: During the process of preparing the Agenda 21 for the Baltic Sea Region, Baltic 21, the Action Programme for the sector of agriculture was worked out by June 1998. This programme contains urgent actions to reduce nutrient emissions and leakage as well as the goals, targets and activities to achieve sustainable development in rural areas. The action programme consists of different Programmes: the Agri-Environmental Programme; the Rural Development Plan; the Water Resource Management; and etc. In 1995, a Phare Advisory Service Project was launched in Estonia to support the Ministry of Agriculture in the process of developing an advisory service system. The National Advisory Service Programme and the Phare Advisory Service Project in cooperation with the British Know How Fund prepared a scheme for the utilization of advisory subsidies.

Status: In Estonia, there are a great number of environmental problems to be solved. The Estonian National Environmental Strategy, NES, identifies environmental problems, and establishes short-term and long-term objectives and activities addressing those problems by sector. According to the Statistical Board of Energy, the agricultural sector consumed 906 million kWh in 1998. This accounts for about 4,9% of the total electric energy consumption in Estonia.

Capacity-Building, Education, Training and Awareness-Raising: The target areas of advisory service are the following: legal questions, plant production, plant protection, animal protection, agricultural economy, bookkeeping, and housing. Extension serves the interests of many groups such as producers, processors, agri-businesses, public sector, protectors of the environment, banks etc.

Information: An agricultural analysis on EAA basis is given every six months and annually. More information can be obtained at the Ministry of Agriculture site: <http://www.agri.ee/>.

Research and Technologies: No information available.

Financing: In 1998, negotiations between the Government and producers resulted in assigning 0,8% of Gross Domestic Product (GDP) for agricultural support payments and for the development of rural regions. The Government supports the development of agriculture with various measures; among these are: capital grants and compensations for interests on loans; since 1998, income support payments by grain area and the number of animals; support payment to acid soil liming; support payments to the investments into rural infrastructure; regional support payments and favorable loans; and partial compensation for fuel excise tax and the establishment of income tax exempt. In 1998, the Government assigned 797 million EEK (estonian kroons) to support agriculture and rural life. Out of this, direct support payments accounted for 190 million EEK and compensation for weather damage, 227 million EEK. The State Agricultural Advisory Service Programme was launched by the Ministry of Agriculture in 1995. There are two direct support schemes in Estonia, to which the government in 1998 prescribed 70 million EEK as long term loans and capital support. Rural life development is supported through the Estonian Regional Development Foundation, mainly in the form of two regional programmes, peripheral areas programme and village movement programme.

Cooperation: Estonia cooperates with the other Baltic States, the European Union and the Council of Europe. See also under **Programmes and Projects**.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The Governmental Commission on Biodiversity and the Ministry of the Environment are the institutions primarily responsible for the conservation of biodiversity in Estonia. The Government of Estonia established special Governmental Commission to deal with issues related to biological diversity, and developed a concrete agenda for its implementation. The ministerial ad hoc group on sustainable development - the Committee on Sustainable Development - has been involved in issues related to the Convention of Biological Diversity since 1993. The main task of the group has been to influence government policies towards greater consideration of sustainable development principles in national policy. In 1995, Estonia also established a national ad hoc Task Group on CBD. According to the Government, one of the most important goals in this area was to draft and pass the Act on Sustainable Development which was approved by the Riigikogu on February 22, 1995. The Act states, "Preservation of biological diversity shall be guaranteed through a national programme and an action plan approved by the Government of the Republic of Estonia, the implementation of which shall be financed from the national budget..." (Art.9).

A National Biodiversity Strategy has been approved by the Global Environmental Facility (GEF), that will help Estonia to establish a comprehensive cross-sectoral framework, which can be used in the future for project identification and acquisition of funding for activities aimed at the preservation and sustainable management of biodiversity. A Biodiversity Country Study is defining basic needs for the effective conservation and rational use of national biodiversity at a desired level, estimating the costs and benefits related to these basic needs, identifying the necessary support measures required to fulfill them, and providing the foundation for the preparation and implementation of the National Biodiversity Strategy and Action Plan. In the autumn of 1995, two important national policy papers were drafted: the Estonian Environmental Strategy and the Estonian Forest Policy. Both of them included a biodiversity section, and the draft versions of the documents position the biodiversity issue rather highly. Both documents were finished by the Fall 1996 and presented to the Government for approval.

Programmes and Projects: See under **Cooperation**

Status: As for the implementation of the Convention on Biodiversity at the national level, contacts have been promoted between authorities in different sectors, which deal with issues related to biodiversity: e.g., agriculture, fisheries, forestry, and scientific institutions. Various activities have been implemented in those sectors in regards to the in situ and ex situ conservation of species, the maintenance and breeding of local animal breeds and cultivars of plants, and spatial and land use planning in areas with protected landscapes, etc. Existing infrastructure includes: a well-developed network of protected areas; databases concerning local cultivated plant species and animal breeds; seed banks of forest trees; gene banks established for different purposes; specific programmes for species protection managed by botanical gardens and the zoo; and national monitoring programmes concerning fisheries, forests, and biological resources in general. All of the above-mentioned activities would have been impossible without learning from international experience and participating in processes at the international level.

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

Information: The monitoring system, supported by state financing, was established in Estonia to monitor the use of natural resources (forest, fish, mineral resources, water), as well as for monitoring protected and endangered species and communities.

Research and Technologies: No information available.

Financing: Funds are derived from the State Budget, the Environmental Fund, and the Fisheries Fund.

Cooperation: The application for support for the preparation of the National Biodiversity Strategy, Action Plan (NBSAP), and First National Report to the Convention on Biological Diversity was approved by the GEF.

Estonia signed the Convention on Biological Diversity in 1992, ratified it in 1994, and submitted the latest report in 1996. It ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora in 1992 and submitted the latest report in 1996. A very significant step in implementing the requirements of the Convention was the signing of the Association Agreement between Estonia and the European Union in 1995. This led, inter alia, to a resolution to develop legislation on biotechnology and genetically modified organisms (GMO) in 1997. Cooperation with UNEP, the World Bank, and a number of bilateral partners has been of high importance. Among the most important initiatives are: the UNEP-supported Biodiversity Country Study project; the Keypoints for National Biodiversity Action Plan for Estonia, a triple project for the three Baltic countries funded by the World Bank; the project, "Implementation of the Act on Sustainable Development and the Biodiversity Convention in Estonia," funded by EU LIFE; and the support from the GEF for preparation of Estonia's National Biodiversity Strategy, Action Plan and First National Report to the Convention on Biological Diversity. Among the most important international seminars held, the following could be mentioned: "Environmental Conventions and the Baltic States" held in Tabasalu, Estonia in 1993, the workshop on the status and implementation of the CITES Convention and CBD in the Baltic State organized by the Ministry of the Environment of Estonia and the Baltic Environmental Forum (June 1996); and the UNEP Workshop on the Practical Implementation of the Convention on Biological Diversity in the Baltic Countries held in Tallinn on October 16-19, 1994.

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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:

Technology: The Package Law prescribes the implementation of Estonian third-party certified environmental labels. The main goal of this law is propagation of environmental labeling among producers and customers, as well as training the label jury and criteria commission for European eco-labeling strategies. There have been some cases of ad hoc environmental labeling in Estonia, mainly in the field of soft agriculture. In order to promote environmentally-friendly tourism, the Hiiumaa Green Label was established by the Hiiumaa Centre of the West Estonian Archipelago Biosphere Reserve. A few enterprises, notably small subsidiaries of large foreign firms (e.g., SADOLIN), have begun to adopt environmental management systems. Environmental management system standards ISO 14001 and ISO 14004 were to be adopted by the Estonian Standardization Board (EVS) at the end of 1996. The adoption of Environmental Impact Assessment (EIA) and the Environmental Auditing Act by Parliament is expected to take place at the beginning of 1997. Estonia has translated the first ISO auditing standards and intends to implement these standards in the beginning of 1997. A training program for environmental auditors has begun. The accreditation of certification bodies is provided by EVS according to the Minister of Finance's Regulation based on the general criteria for the assessment of certification bodies and on the CEN standard EN 45002.

Biotechnology: No information available.

Programmes and Projects:

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

Biotechnology: No information available.

Status:

Technology: No information available.

Biotechnology: No information available.

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

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

Biotechnology: No information available.

Information:

Technology: No information available.

Biotechnology: No information available.

Research and Technologies:

Technology: No information available.

Biotechnology: No information available.

Financing:

Technology: No information available.

Biotechnology: No information available.

Cooperation:

Technology: No information available.

Biotechnology: No information available.

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

Decision-Making: The responsible bodies for the issue are: The Ministry of the Environment; the Environment Information Center; the Estonian Environmental Inspection and Estonian State Sea Inspection; the Ministry of Environment, Department of Fishery; the Estonian Marine Institute; the Estonian State Sea Inspection; and County Governments. For coordination reasons, all of the institutions regularly meet at the highest level at the Ministry of the Environment. Cooperation mechanisms are also provided by: the Fisheries Act; the National Estonian Marine Oil Spill Contingency Plan; the Estonian Fisheries Council; and an Agreement between the Sea Inspection and the Boarder Guard. Legislation includes the following: The National Environmental Strategy; the National Environmental Action Plan (NEAP); and the National Estonian Marine Oil Spill Contingency Plan. Both an Estonian Fisheries Policy and an Estonian Environmental Action Plan govern the sustainable use and conservation of marine living resources. Full harmonization of Estonian fisheries legislation with relevant EU acts is in process. The Codes of Conduct for responsible fisheries have been established by both Government and industry. Among the Major Groups involved in decision-making are Local Authorities and Non-governmental Organizations (Fishermen Association, Fishfarmers Associations, Lake Peipus Project).

Programmes and Projects: Programmes in this area are among others: the National Monitoring Program (Marine section); the PHARE Project, Integrated Coastal Zone Management in the Baltic States and Poland; the Salmon Action Plan of the International Baltic Sea Fisheries Commission (IBSFC); and Agenda 21 for the Baltic Sea Region (Baltic 21) fishery sector.

Status: Estonian coasts are relatively undeveloped. Eight percent of the economy is contributed by fishing.

Capacity-Building, Education, Training and Awareness-Raising: Fisheries education is provided for all interest groups, including fishermen, processors, teachers, and civil servants. Support to this is given by the Estonian Fish Capital Fund.

Information: Information available for the sustainable management of fishery resources includes among others National Fisheries Science, International Scientific cooperation, as well as National and international fisheries statistics. Information on marine pollution is also provided. Estonia has established recently the national database on sea shores and banks. The Phare ICZM project is to be completed by 1999. A set of environmental indicators has been developed and published at the Aarhus conference.

Research and Technologies: No information available.

Financing: Monitoring of shoreline dynamics and coastal landscapes has been moderately financed since 1996 from the national budget. Sustainable management of fishery resources is financed from special funds, the national budget and external assistance, a Fisheries Fund and an Environmental Fund.

Cooperation: Estonia is a Member of the following Agreements: the Gdansk (1973) Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts; the Helsinki (1992) Convention on Protection of the Marine Environment of the Baltic Sea Area; Convention on the Protection and Use of Transboundary Watercourses and International Lakes; the International Council Exploration of Sea (ICES); the European Inland Fisheries Commission EIFAC; the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (NAFO); the Estonian- Russian Lake Peipus Fishery Commission; and the Estonian-Latvian Fishery Commission.

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 Ministry of Environment is the body mainly responsible for issues related to freshwater resources. Several relevant plans and programs have been elaborated during recent years in Estonia to: implement the Declaration on the Protection of the Marine Environment of the Baltic Sea, (1988); meet Helsinki Commission recommendations; improve water quality of the Baltic Sea and inland water bodies; and supply the population with high quality drinking water. The Estonia Water Management Development Plan is a document in which general principles and goals of water protection and water supply are formulated. Concrete measures to fulfill international obligations and internal water policy goals are defined in the Estonian Water Protection Programme for the years 1995-1998.

Programmes and Projects: Water Protection Programmes for each year have been elaborated. The programs contain investment plans for the construction and reconstruction of waste water treatment plants, sewerage systems and drinking water supply systems, as well as plans for financing applied research and the elaboration of legislation concerning water management. Through the Water Protection Programme, the construction and reconstruction of 54 wastewater treatment and drinking water supply projects were financed in 1996. Of main importance were projects that included investments in Tallinn, Tartu and Haapsalu water management systems and small municipal projects. Although the Estonian Water Protection Programme for the 1995-1998 period is not completely financed at this time, it is expected that in 1998, almost all Estonian towns with a population over 10,000, can meet the requirements of HELCOM recommendation 9/2 concerning BOD7 and phosphorus.

Status: Assuming that the Water Protection Programme will be more or less successfully implemented, and taking into account the remarkable decrease in water consumption and pollution from municipalities, industries and agriculture (due to decrease of production and reorganization of the economy), it is expected that Estonia can generally meet the 50% reduction goal of the Ministerial Declaration of 1988.

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

Information: No information available.

Research and Technologies: No information available.

Financing: Approximately US\$ 30 million is needed per year for the qualitative modernization of Estonian water management. The main domestic sources of financing include the state, Environmental Fund and local budgets.

Cooperation: Of foreign sources, loans from the World Bank and IBRD, assistance from Finland, Sweden, Estonia, Germany, Switzerland, Norway, Nordic Environment Finance Corporation (NEFCO) and PHARE must be emphasized.

Estonia was the first of the newly independent Baltic states that acceded to the Baltic Sea Convention (signed originally in 1974) revised in 1992. Estonian scientists have regularly participated in the technical activities of the Helsinki Commission (HELCOM) since 1974. Estonia has cooperated in fulfilling its responsibilities regarding joint decisions made in the Convention.

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

Decision-Making:

Hazardous wastes: The Ministry of Environment is responsible for issues related to hazardous waste. The main legislative document is the Waste Act (1992). In this Act, principles of waste prevention, minimization and source reduction are determined. Several lower-level regulative acts have been issued as regulations of the Government or of the Ministry of the Environment, e.g.: the Estonian Waste Classifier (1991); On Issuing of Licenses for Handling of Hazardous Waste (1992); On Issuing of Waste Permits (1992); On Labeling of Hazardous Waste (1992); and On Export, Import and Transit Movements of Hazardous and Other Waste (1992). Larger industrial enterprises are encouraged to treat, recycle, re-use and/or dispose of their wastes, at the source. Economic regulatory incentives have been implemented to stimulate waste minimization, re-use and recycling.

Solid wastes: The Ministry of Environment is responsible for solid waste and sanitation. The main legislative document is the Waste Act (1992) in which principles of waste prevention, minimization and source reduction are determined. Several lower-level regulative acts have been issued as regulations of the Government or of the Ministry of the Environment, e.g.: the Estonian Waste Classifier (1991); On Issuing of Waste Permits (1992); and On Export, Import and Transit Movements of Hazardous and Other Waste (1992). Private companies also have an important role in the management and minimization of solid waste. To encourage use of recyclable materials, particularly packaging materials and wastes, the Packaging Act has been approved by the Riigikogu (Parliament) in 1995. One of the Government's main goals is to extend and improve waste collection and transportation systems. Privatization processes in Estonia are having an impact in this area. Privatization will promote the application of the Polluter Pays Principle in waste management through the establishment of service charge rates, which will ensure that generators of waste cover the full cost of their disposal in an environmentally sound manner.

Radioactive wastes: The operating authority in Estonia for the storage of radioactive waste is ALARA Ltd., and the controlling authority is the Estonian Radiation Protection Centre.

Programmes and Projects:

Hazardous wastes: No information available.

Solid wastes: In order to promote waste minimization technologies and procedures, programmes for some industries are being developed and implemented in cooperation with experts from the USA and Estonia.

Radioactive wastes: No information available.

Status:

Hazardous wastes: In recent years, a number of companies have been established whose main activity is the disposal of hazardous waste. Currently, they are able to treat only small amounts of the waste generated. Annual limits for waste deposits are established for enterprises with waste permits issued by local environmental authorities. The classification of hazardous wastes is based on: the Estonian Waste Classifier (1991); the International Waste Identification Code (IWIC); and on the principles used for waste identification according to the Basel Convention. Using this system, the Ministry of Environment has begun to cooperate with the State Statistics Board to collect information on waste generation, treatment and disposal. Annual waste generation (according to data registered in 1995) was 13.4 million tons. Of this, approx. 7.3 million tons can be characterized as hazardous waste. The greatest amount of wastes are generated in oil-shale mining, chemistry and oil-shale based power production activities. At present, there are very few specialized hazardous waste treatment facilities in Estonia. In the absence of treatment facilities, the majority of hazardous wastes is deposited in special repositories or disposed of in common domestic waste landfills. The Ministry of Environment, in cooperation with Estonia and EU-PHARE Cross Border Cooperation Programme, is currently implementing the first phase of establishing a nation-wide system for collection, transport, treatment and final disposal of hazardous waste. The inventory of contaminated sites in former Soviet military areas has been carried out in order to identify measures required for their clean up.

Solid wastes: Solid household wastes, including commercial waste, street sweepings, construction debris, etc., form a relatively small part of total waste generated annually in Estonia. Approximately 533 thousand tons of solid waste were disposed of in 1995 by waste collection and transportation companies in landfills and waste deposit sites. Waste-related services organized by municipalities and private companies cover areas with a population of about

900,000 people, approximately 60% of the population. The main means of handling municipal waste is disposal at landfills. There are no facilities for incinerating or composting domestic waste. According to the inventory of landfills in 1995, there were 279 functioning municipal landfills in Estonia, most of them in rural areas. The majority of rural landfills are small, insufficiently managed and often do not meet environmental quality criteria. New landfills for the biggest cities (Tallinn, Tartu, Pärnu, Johvi) are planned to be designed and constructed according to international environmental criteria. For this purpose, new guidelines and standards will be introduced in accordance with European Union legislation.

Radioactive wastes: Although Estonia is a non-nuclear country, because of uranium processing at Sillamäe, there is a large uranium milling tailings depository. Geotechnical investigations of the depository have shown that the dam's stability does not meet international requirements. Initiatives are being taken to strengthen the dam. There are currently two sites for the management and storage of radioactive wastes in Estonia. One was established for low and intermediate level waste at Tammiku, 12km south from Tallinn. It used to serve as a central treatment and storage facility for the radioactive waste. The Tammiku facility was designed in accordance with criteria developed in Moscow at the end of the 1950s. Approximately 55% of the vault's capacity is presently occupied. The other is situated at the former Soviet Navy training centre at Paldiski, 45 km WNW from Tallinn. There are two storage facilities for radioactive waste at the site, one for liquid and another for solid waste. The storage of radioactive wastes at the Paldiski facility is now performed by using concrete containers from Sweden. In the near future, the Government intends to close the Tammiku facility and to store the radioactive waste at the Paldiski facility exclusively.

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

Hazardous wastes: Existing education and training systems in the field of hazardous waste management are insufficient. The establishment of centers providing training and information on environmentally sound technologies and hazardous waste management will be necessary in the near future.

Solid wastes: No information available.

Radioactive wastes: No information available.

Information:

Hazardous wastes: See under **Status**.

Solid wastes: No information available.

Radioactive wastes: No information available.

Research and Technologies:

Hazardous wastes: No information available.

Solid wastes: No information available.

Radioactive wastes: No information available.

Financing:

Hazardous wastes: The Government of Estonia has established special fees for waste disposal and rates, depending on the degree of hazard. The fees paid by companies are directed to the Environmental Fund and used as financial resources for investments, research and implementation programmes in the field of waste management.

Solid wastes: No information available.

Radioactive wastes: No information available.

Cooperation:

Hazardous wastes: Estonia cooperates internationally within the framework of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and takes part in the preparation of technical guidelines for environmentally sound management of hazardous wastes with UNEP. It signed the Basel Convention in 1992 and ratified it in July 1992. The latest information was provided to the Secretariat in 1995.

Solid wastes: International partners in this field are the countries of the Baltic region, mainly Estonia and Finland.

Radioactive wastes: No information available.

CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-Making: There is an established commission between various Estonian Ministries, which deals with gender-relevant problems. Policies and strategies are being drawn up for achievement of equality in all aspects of society, including a strategy by year 2000 to eliminate obstacles to full participation of women in sustainable development. Mechanisms are being developed to assess implementation and impact of development as well as environment policies and programmes on women. Status: Women took a very active part in political processes during the period of preparation for independence from 1988-1991. Movements such as the fight against mandatory conscription in the Soviet army had their start and ultimate realization due to the instigation of women's organizations. The 1995 parliamentary elections demonstrated the worldwide tendency towards decreased numbers of women in higher decision-making bodies. In 1992, the percentage of women in the national government was 22% and in government at the local level, 20.7%. The percentage of women in parliament was 11% in both 1992 and 1996. Capacity-Building, Education, Training and Awareness-Raising: Curricula and educational material already promote gender-relevant knowledge. Cooperation: The Convention on the Elimination of All Forms of Discrimination Against Women was signed in 1991.

Children and Youth: Decision Making: Although their role in the national Agenda 21 process is advisory, the Estonian Children Organization, Ayfa Estonia, Forest Youth, and the Tartu Students Society for Nature are the most important for establishing processes that promote dialogue between the youth and government at all levels and mechanisms that permit youth access to information and opportunity to present their views on implementing Agenda 21. Status: The goal set in Agenda 21 of ensuring that by the year 2000 more than 50% of youth (gender balanced) has access to appropriate secondary education or vocational training has been reached. Youth unemployment in 1996 was 3% (though the government does not have exact statistics about it yet).

Indigenous people: Status: Indigenous people participate fully in appropriate national processes for strengthening arrangements for active participation in national policies and are fully involved in resource management strategies and programmes at the national and local level.

Non-governmental organizations: Decision-Making: There is mutually productive dialogue between NGOs and Government. An important role for implementing Agenda 21 is filled by the Estonian Green Movement and by the Estonia Branch of the Stockholm Environmental Institute. These organizations are participating in the conception, establishment and evaluation of official mechanisms. They are also involved in the elaboration of the Regional Agenda 21.

Local authorities: Decision- Making: The Government plans to support local agenda 21 initiatives.

Workers and trade unions: Cooperation: Estonia ratified 21 conventions between 1922-1938 and seven conventions between 1993-1996. Workers take some part in National Agenda 21 discussions and implementation.

Business and industry: Decision Making: There are governmental policies encouraging efficient resource use and requiring reuse, recycling, and reduction of waste. To implement its policies, one of the steps the Government has taken towards sustainable development is the use of economic instruments. The prices for the use of natural resources and pollution charge rates were raised pursuant to the rise of the consumer price index (by 1.417). All revenues collected from taxes and charges are allocated to the environment fund. A few enterprises of all sizes have adopted sustainable development policies. In addition, a few enterprises of all sizes have adopted sustainable development policies. Pollution charges are a complex indicator of pollution extent (range). According to this indicator, 80% of the total pollution volume in Estonia originates from twenty enterprises. Status: Pollution charges are a complex indicator of pollution extent (range). According to this indicator, 80% of the total pollution volume in Estonia originates from twenty enterprises. Financing: All of the enterprises that have to pay charges, revenues and taxes for the use of natural resources or for pollution have to act in a sustainable manner. Taxes and other charges will increase annually where the behavior of enterprises has not improved. Where positive results for environmental protection have taken place, the tax burden decreases. Rates increase each year for those businesses

that pay pollution charges, revenues and taxes. To implement policies encouraging efficient resource use and requiring reuse, recycling, and reduction of waste, one of the steps the Government has taken is the use of economic instruments. All revenue collected from taxes and charges are allocated to the environment fund.

Scientific and technological community: Status: Estonia is currently undertaking reform in the area of higher education and research - the primary aim of which is to restructure research and technological development and raise the international competitiveness of Estonian higher education and research. The research is mostly state-funded, non-military, concentrated in universities and research institutions, and directed at basic and applied research. The specific priorities of the ongoing reform are: to develop a national innovation system for Estonia's economic growth; to increase cooperation between institutions of higher education and research and private enterprise in order to support greater sharing of technology and the transfer of know-how; to improve the quality of teaching and research; and to establish the foundation of an information and knowledge-based society. Financing: There are five different types of funding for research and development from the state: the Ministry of Education supports infrastructure expenditures (administration, heating, etc.) for the state research institutions; the Estonian Science Foundation allocates research grants and general purpose financing; research grants are allocated on the basis of the research projects submitted in an open contest; research and development carried out within the framework of state and ministerial programmes is financed separately; and the Innovation Foundation supports mainly development projects. A decision was made recently to increase state investments in technological development activities and to encourage the generation of additional resources for research and development from the private and foreign sectors.

Farmers: Capacity-Building, Education, Training and Awareness-Raising: Government policies are promoting and encouraging sustainable practices and technologies. In cooperation with the Board of Education, the Ministry of Environment prepared teaching materials for environmental education and organized a seminar on water protection problems in agriculture for the teachers of agricultural schools.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: The Estonian Ministry of Environment receives 222.6 mil. EEK (Estonian Kroons) from the national budget for the implementation of policies and strategies for nature protection and sustainable development. Eight percent of state investment programmes supports local environmental infrastructure for the building and reconstruction of various environmentally important developments. Pollution charges and resource taxes are the most important economic instruments used for promoting sustainable development.

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

Information: No information available.

Research and Technologies: No information available.

Cooperation: No information available.

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CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: This information has been covered under “Major Groups”

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

Information: No information available.

Research and Technologies: No information available.

Financing: This information has been covered under the **Chapter 24 to 32** under **Scientific and technological community**.

Cooperation: No information available.

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: The Ministry of Education is responsible for pre- and in-service training of teachers. There are three Nature Hobby Centers in Estonia offering in-service training courses for teachers, which coordinate after-school environmental education activities for students. Training has been carried out mainly through the Ministry of the Environment and the Ministry of Education. In the field of environmental education, the Government exercises continuous cooperation with basic and vocational schools, as well as with Universities. Environmental Education is one of the four compulsory cross-curricular themes in the Estonian National Curriculum for Primary and Secondary Schools.

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

Status: Each school is required to develop its own school curriculum. Environmental education is learned as a part of core subjects through cross-curricular activities and, if the school chooses to do so, through optional courses. Four different curriculum materials of environmental education have been compiled for different levels of education. These materials were made available to schools for free. A new national curriculum will be implemented from year 1997 in grades one, four, seven and ten. Raising public environmental awareness and shaping an environmentally-friendly consumer is one of the priorities of the national environmental strategy. Environmental issues are discussed in newspapers as well as in television and radio broadcasts. Today, due to pressing economic concerns there seems to be less interest in environmental improvement than before UNCED. In 1995, support was offered to promote environmental education in biology classes at the Estonian Youth Hobby Centre Telo and Rapina Higher Horticultural School. A meeting of young geologists has also taken place in addition to a countrywide competition in biology and establishment of the Environ-Tallinn Nature Conservation Society.

Information: No information available.

Research and Technologies: No information available.

Financing: The Estonian Environmental Fund awarded scholarships to the students of the environmental protection technology and environmental engineering branches of Tallinn Technical University. The University of Turku (Finland) and the Institute of Zoology and Hydrobiology of the Tartu University in Vilsandi National Park have received financial support from the Government.

Cooperation: No information available.

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

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

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the Un system.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

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

International Conventions ratified by Parliament are as follows: Basel (1989) Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (ratified on May 14th); Gdansk (1973) Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts (ratified on February 10th, 1993); Ottawa (1978) Convention on Future Multilateral Co-operation in the North-West Atlantic Fisheries (ratified on Feb. 10th, 1993); Copenhagen (1964) Convention on International Council for the Exploration of the Sea (ratified on Feb. 10th, 1993); Ramsar (1971) Convention on Wetlands of International Importance Especially as Waterfowl Habitat (ratified on October 20th); Washington (1973) Convention on International Trade in Endangered Species of Wild Fauna and Flora (ratified on Oct. 20th, 1993); Vienna (1963) Convention on Civil Liability for Nuclear Damages (ratified on April 6th, 1994); Joint protocol (1988) relating to the application of the Vienna Convention and the Paris Convention (ratified on April 6th 1994); Rio de Janeiro (1992) Convention on Biodiversity (ratified on May 11th, 1994); New York (1992) UN Framework Convention on Climate Changes (ratified on May 11th, 1994); and Helsinki (1992) Convention on the Protection and Use of Transboundary Watercourses and International Lakes (ratified on May 3rd, 1995).

Other environmental convention in force in Estonia are as follows: Berne (1979) Conservation of European Wildlife and Natural Habitats (entered into force in Estonia on August 3rd, 1992); London (1973) Convention on Prevention of Pollution from Ships (entered into force in Estonia on March 16th, 1992) and its supplementary protocol (MARPOL 1973/78) and Annexes I - V (Annexes I and II entered into force in Estonia on March 16th, 1992, Annexes III - V on November 18th, 1992); Brussels (1969) Convention on Civil Liability for Oil-pollution Damage (entered into force in Estonia on March 1st, 1993); and Brussels (1971) Convention on Establishment of an International Fund for Compensation for Oil-pollution Damage (entered into force in Estonia on March 1st, 1993). The following convention has been signed by Estonia: Helsinki (1992) Convention on the Transboundary Effects of Industrial Accidents.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

This issue has been covered either under **Chapter 8** or under the heading **Decision-Making** in the various chapters of this Profile.

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CHAPETER: INDUSTRY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awaremess-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: The Ministry of Economy and the Estonian Tourist Board are responsible for decision-making. Local authorities as well as Tourist Information Offices of the Estonian Tourist Board are responsible at the local level. Sustainable tourism is one main principle of the National Tourism Masterplan for 1995-2000. Presently, several strategic plans covering sustainable tourism development are being developed. Ecotourism and nature-based tourism is a part of the National Tourism Strategy and Plan that are planned to be worked out during the next years. The Estonian Ecotourism Associations' (ESTECAS) activities include organizing of workshops and seminars at the local level and organizing annual conferences and promotion of ecotourism through media.

Legislation relating to sustainable tourism includes: the Act on Sustainable Development; the Planning and Building Act; the Republic of Estonia Land Reform Act; the Water Act, the Act on the Protection of Marine and Freshwater Coast, Shores and Banks; the Act on Protected Natural Objects; and the Law of Property. A separate Tourism Law is currently being developed. There are several established standards and guidelines for sustainable tourism, others are being planned. Non-governmental organizations, local authorities, and county governments are involved in the decision making process.

Programmes and Projects: No information available.

Status: Tourism is one of the most important sectors of the Estonian economy. The total contribution to GDP in 1997 from expenditure by foreign visitors was 15 percent (including secondary effects) and has doubled since 1994. The number of jobs encouraged by international visitor expenditures have doubled between 1994 and 1997, reaching 100,000 in 1997. There have been no major negative environmental and cultural impacts from tourism. The development and establishment of a cooperation network and new institutions (e.g. Tourist Information Offices) have had a positive effect on sustainable tourism development.

Capacity-Building, Education, Training and Awareness-Raising: No special programmes have been identified. Under the PHARE National Tourism Development Programme in 1993-1998, some courses on sustainable tourism have been organized. Partners responsible for carrying out awareness campaigns are local and regional tourism authorities. In general, marketing of tourism is specifically geared toward attracting environmentally-conscious tourists.

Information: Information is available to assist both decision-makers and the tourism industry from visitor surveys and statistics, national and cultural resource inventories, and tourism development plans. Natural resources and ecosystem characteristics in tourist areas have been inventoried. The development of indicators is planned for the coming years. Other sources of information concerning sustainable tourism are: the Estonian Tourist Board's newsletters; the Internet site of the Estonian Ecotourism Association (<http://www.ee/ecotourism>); and published articles in local media by Tourist Information Offices.

Research and Technologies: Environmental management systems are not applied in hotels and other tourist establishments.

Financing: Fixed costs are covered by the state budget. Development activities are financed by the State budget, the Environmental Fund and external assistance (e.g. PHARE, bilateral projects).

Cooperation: Estonia cooperates with ten Baltic Sea countries through the Baltic Tourism Commission (Agenda 21 for Baltic Sea Tourism Region, international seminars and conferences). Cooperation also takes place between the Estonian Ecotourism Association and the Swedish Ecotourism Association (ecotourism network, product and market development projects, and conferences). At the regional level, there are four-to-five bigger bilateral or international projects for the development of sustainable tourism