



National Environmental Strategy

Estonia

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ESTONIAN NATIONAL ENVIRONMENTAL STRATEGY

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1. INTRODUCTION AND GENERAL PRINCIPLES

1.1 Introduction

According to Article 53 of the Constitution of the Republic of Estonia every person is obliged to preserve the human and natural environment and to compensate for damages they cause to the environment.

Fifty years of development under conditions of unbalanced economic relations in a closed society has resulted in underdeveloped machinery and technology and irrational use of natural resources. As a result, conflict situations between the use and protection of the environment developed in a number of regions of Estonia and formed the preconditions for environmental crisis. Significant environmental stress was also caused by past pollution associated with the activities of the former Soviet army. Elimination of past pollution will take decades.

In 1989, the Supreme Council of Estonia adopted the Policy on Nature Conservation and Sustainable Use of Natural Resources which provided an assessment of the state of the environment. The policy also formulated policy goals and identified environmental problems and possible ways of achieving the goals under socioeconomic conditions based on state ownership. Though the regaining of independence in 1991 did not alter the environmental goals, it changed the conditions for achieving these goals. Instead of an economic system planned and controlled by the state, Estonia has moved towards a liberal free market economy. Privatisation of state owned land and technical assets is successfully being carried out.

Today, environmental requirements are taken into consideration when establishing new enterprises. The use of natural resources as well as environmental protection are regulated by administrative means. Application of resource and pollution charges has provided a solid basis for integrating the principles of environmental protection into economic activities. Large investments financed from the national budget, by different enterprises, local municipalities and various funds, have been made to address the environmental problems; foreign assistance has also been significant. The applied measures have contributed to the improvement of the situation.

The principles of Estonia's environmental policy are included in a number of legislative acts on nature management, nature conservation, etc.: Act on Nature Conservation, Forest Act, Act on Protected Natural Objects, Act on the Protection of Marine and Freshwater Coasts, Shores and Banks, Act on Pollution Charges, Water Act, Earth's Crust Act, Act on Packaging, Planning and Building Act, Act on Hunting Management, Fishing Act, Land Amelioration Act, Act on Sustainable Development, Health Protection Act, etc.

The environmental policy of the Republic of Estonia is implemented through executive action programmes following the elaboration of environmental strategy trends. Thus, development

trends elaborated and directed by the Government and accepted by the public, which take into account the needs of the future generations without endangering the main requirements of the present generation, are followed. This means also that the environmental limitations have to be considered in economic activities.

As the technological basis of the Estonian economy is relatively outdated, sustainable use of natural resources is of utmost importance. Due to the fact that funding possibilities are considerably smaller than needed in nature conservation, the use of limited available financial resources should be well planned.

The above-mentioned considerations have led to the development of the Estonian National Environmental Strategy (NES). The Strategy is mainly based on the principles of the environmental policy of Estonia. The current situation and implementation of the ideas presented in the Policy of Nature Conservation and Sustainable Use of Natural Resources were critically analysed during the elaboration of the NES. In 1995, an additional assessment of environmental activities was made in Estonia the results of which are presented in *Environmental Performance Review, Estonia* (compiled by United Nations Economic Commission for Europe).

The NES specifies the trends and priority goals of environmental management and protection in a new political and economic situation and sets the main short-term and long-term tasks to be achieved by 2000 and 2010 respectively.

The NES proceeds from the main traditional goal of environmental protection which is to provide people with a healthy environment and natural resources necessary to promote economic development without causing significant damage to nature, to preserve diversity of landscapes and biodiversity while taking into account the level of economic development.

The priorities presented in the NES are taken into account when planning environmental activities, developing international cooperation and allocating national funds. In order to implement the main tasks set in the NES, long-term action plans will be developed.

The Strategy follows the main international environmental initiatives: the World Nature Protection Strategy, Agenda 21, the Declaration of the Earth Summit (Rio de Janeiro, 1992), the Environmental Action Programme for Central and Eastern Europe (adopted at the Ministerial Conference in Lucerne in 1993 and revised at the Sofia Conference in 1995), the international agreements which have become valid for Estonia, and the White Paper drafting the principal requirements of integration of the associated countries of Central and Eastern Europe with the European Union.

1.2 Main Principles of the Strategy

The Strategy is based on internationally accepted principles, the historical traditions of Estonia and takes into account the current socioeconomic situation in the country.

The main principles of the NES are as follows:

- to encourage economic development in environmentally sustainable direction, whereby the objective is to meet the needs of the present generation without compromising the interests of future generations. This objective can be achieved by regulating environmental management and establishing environmental protection restrictions to a number of activities;
- to anticipate and prevent environmental damage by addressing the causes at the earliest possible stage as elimination of the consequences is considerably more expensive and sometimes even impossible;
- to exercise caution in environmental decision-making: approval of planned activities where environmental impacts are not entirely clear should be avoided;
- to integrate environmental requirements into the development strategies of other sectors and to consider these while using and protecting each individual environmental media and natural resource. In addition, the interests of the natural environment as an integral system should also be taken into account;
- to include environmental requirements in environmental legislation as well as in other socioeconomic legislation in a manner which avoids contradictions between the various requirements;
- to regard the environment as the common wealth and concern of the population. The interests of the environment have to stand higher than party politics, current economic problems, business and propaganda interests. In order to achieve the objectives of environmental protection and sustainable use of natural resources a social consensus between all groups of society must be reached;
- to meet environmental requirements in the economic sector by applying the 'polluter/consumer pays' principle. Every user and polluter has to be fully responsible for their activities. Enterprises have to ensure that their activities meet environmental requirements. The value of natural resources used, all costs related to environmental protection and environmental damage incurred throughout the life cycle of a product (production, distribution, use, and final disposal) should be reflected in the product's price;
- to cooperate with other countries in solving global and regional environmental problems and to restrain transboundary environmental effects;
- to apply environmental protection measures at the political and/or administrative level that ensures the best possible results. Proceeding from the principle of shared responsibility, the state, local municipalities, enterprises and inhabitants have to cooperate in solving environmental problems within their sphere of influence;
- to promote traditional nature conservation and nature management as well as public

awareness concerning natural values.

1.3 Primary Principles of the Use of Natural Resources and Environmental Protection

Sustainable use of natural resources and efficiency of environmental protection is basically determined by the technologies used in production and environmental protection. Therefore, it is very important to:

- **use the best available technology** which ensures sustainable use of natural resources, reduces the burden upon the environment and does not entail excessive costs on the further development of the Estonian economy;
- **apply the best available environmental practices.**

The latter is a combination of measures which takes into account the experience of other countries and is aimed at achieving the best environmental results. While choosing these measures, attention should be paid to the following factors:

- environmental risks caused by manufacturing and consumption of products as well as by waste treatment;
- reduction of pollution or replacement of certain products/activities by other less polluting products/activities;
- assumed environmental benefits and damages caused by substitute materials or activities;
- development of science and changes in human knowledge;
- limits of implementation;
- associated socioeconomic effects.

It is preferable to apply the measures aimed at improving the state of the environment at the source of pollution.

In order to reduce pollution at source, the following measures should be applied:

- technology-orientated measures which substantially change the structure of the production and consumption process and are the closest to the principles of sustainable development;
- volume-orientated measures which bring about a decrease in the use of raw materials, water and energy, thus reducing the overall volume of waste;

- measures that reduce the emission of pollutants (treatment facilities, recycling systems, etc.).

Measures to be applied are determined by the specific details of the problems to be solved and goals to be achieved. In the short term the largest environmental benefits can be achieved by reducing emissions through the use of different treatment facilities and by reducing losses of raw materials as well as losses in energy production.

Introduction of environmentally sound technologies takes more time and needs larger financial resources than are currently available. In future preference should be given to the use of environmentally sound technologies.

Good results can be achieved even by applying such low cost measures as good housekeeping in everyday life and in production. The above measures can be introduced primarily by promoting public awareness and an environmentally sound way of thinking, thus improving the sustainability of current production and consumption patterns.

1.4 International Environmental Cooperation

Estonia's obligations under international agreements as well as internationally accepted principles and trends are followed in environmental protection, consumption of natural resources and in nature management.

The main goals to be achieved in international relations are as follows:

- to integrate internationally accepted environmental principles and best practices, in particular those accepted by the European Union, into environmental legislation and implementation;
- to attract foreign investments for projects which ensure better use of natural resources as well as environmental improvement;
- to promote regional cooperation in the Baltic Sea area and especially cooperation with other Baltic States.

Estonia has concluded more than 40 bilateral and multilateral environmental cooperation agreements with its neighbours and other European countries. In addition to several framework agreements, a number of agreements on fisheries, water and air protection, protection and sustainable use of border water bodies, elimination of sea pollution, and waste treatment have been concluded. Also, agreements on reduction of transboundary pollution and environmental impact assessment will be concluded.

Cooperation in the protection of the Baltic Sea is facilitated mainly through the framework of the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki 1992). Estonia also participates in the activities related to the conventions developed under

the auspices of the United Nations, the United Nations Economic Commission and the European Council.

The objective of cooperation between Estonia and the European Union is to modernise both the private and public sectors of the Estonian industry to ensure environmental protection primarily by introducing environmentally sound technologies. The European Union recognizes that in order to achieve environmental goals, stricter norms and standards can be applied in Estonia if considered necessary.

2. PRIORITY ENVIRONMENTAL PROBLEMS

Nearly 40 significant environmental problems were identified while analysing the information obtained on the state of the environment and the use of natural resources. In the process of prioritizing these problems the following criteria were taken into account: effects on human health, economic development, the possibilities to ensure sustainable development and to meet international obligations.

Soil fertility, water, forests, fish stock and mineral resources are crucially important for ensuring long-term development in Estonia. Though natural resources must be available for economic activities, they have to be used in a sustainable manner. Supplies of the existing natural resources are sufficient to meet internal demand and are in a relatively good state. Sustainable use of natural resources can be ensured by legislative acts as the legal basis for this has already been created.

The most important aspect taken into consideration, while prioritizing environmental problems both in Estonia and in the European Union, is the maintenance of human health. The environment affects human health primarily *via* polluted air, low quality drinking water and noise. In Estonia, relatively little research has been carried out in this field yet. In the towns of North-Estonia, there is a correlation between increasing morbidity and concentration of air pollutants. In the industrial region of the northeastern part of Estonia the frequency of occurrence of respiratory illnesses is much higher than in other regions. The volume of harmful trace elements in agricultural products grown in the regions of Narva and Sillamäe is considerably higher (though in most cases it does not exceed the permitted norms) than in agricultural products grown around the city of Tartu. This is partly due to the natural characteristics of the soil and partly to the waste generated in oil-shale processing in the northeast.

Drinking water is transported to about twenty settlements in Estonia by tankers as the aquifer used for drinking water in these settlements is polluted.

One of the problems in Estonia is polluted food products. The use of pesticides and mineral fertilizers has considerably decreased compared to the second half of the 1980s. The quality of the plant and animal products processed in Estonia is coming close to the quality of products of biodynamic agriculture with regard to the content of pesticides and fertilizer components. More attention should be paid to controlling the quality of food products imported in larger quantities. For this purpose a relevant control system should be established.

The priority environmental problems in Estonia are:

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| <ul style="list-style-type: none">- pollution of ambient and urban air which has a negative impact on human health, ecosystems and buildings;- past pollution caused by industrial, agricultural and military activities which poses a threat to ground and surface water quality; damaged landscapes; |
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- decrease in water quantity and quality due to irrational use of ground water resources;
- irrational use, pollution and eutrophication of surface water bodies, deterioration of aquatic ecosystems, including a decrease in reproduction and deterioration of the quality of fish stock;
- increase in environmental pollution caused by waste disposal and in areas contaminated by waste, inappropriate waste and hazardous waste management;
- threats to biological and landscape diversity (including eco-network, nature reserves, protected species, and sites) as a result of economic activities and the land reform;
- insufficient correspondence of built environment to environmental and health principles.

The main causes of environmental problems are as follows:

- use of out-of-date technologies consuming large volumes of raw material and generating large quantities of waste;
- low level of public awareness with a consumption-orientated mode of thinking;
- underdeveloped environmental-technical infrastructure;
- insufficiency of financial resources and management instruments.

The ongoing changes in socioeconomic and administrative systems have caused a lack of public interest in environmental problems. Transition to the market economy, liberal economic policy and open society have introduced new consumption patterns. The abundance of goods and services and propagation of a western consumption-orientated way of living has resulted in an unsubstantiated increase in consumption. A further decrease in public awareness and adoption of new consumption patterns ignoring the principles of sustainable development and environmental considerations as well as further alienation from nature are anticipated.

3. ENVIRONMENTAL POLICY GOALS

The NES focuses on achieving the ten principal policy goals discussed below. As promotion of public awareness and introduction of environmentally sound technologies is a precondition for solving most of the existing problems, these are considered to be the priority goals of the NES. One of the priority goals is to reduce negative environmental effects of energy

production which is a cause of major global and local environmental problems. Improvement of air quality, waste management and water protection as well as reduction of past pollution will help to ensure a healthy environment. Improvement of the built environment serves the same purpose. In addition, landscapes and biological diversity in Estonia should be preserved as much as possible.

In addition to priority environmental goals, attention is also focused on environmental media and natural resources.

3.1 Promotion of Environmental Awareness

Goal: to preserve and stimulate the Estonian tradition of environmental awareness, to promote public participation in environmental decision-making, active environmental protection and supervision; to encourage future generations to adopt environmentally sound consumption habits and to support further development of environmentally sound consumption patterns.

In order to promote environmental awareness, it is necessary:

- to shift public consumption preferences in a more sustainable direction by using mass media resources, economic tools and administrative instruments of environmental protection;
- to make environmental information available to the public;
- to shape public understanding of environmental values through education and training;
- to involve the public in environmental decision-making processes;
- to make decisions on the basis of reliable information which should also be available to the public;
- to ensure control over implementation of adopted decisions and to make the results available to the public.

3.2 Clean Technologies

Goal: to use natural resources, raw materials and energy in a rational and sustainable manner, to reduce pollution and generation of waste.

For achieving the above goal it is necessary:

- to introduce the principles of ♪good housekeeping into production and everyday life;
- to introduce environmentally sound technologies step by step;
- to introduce the best environmental practices used in other countries;
- to achieve a favourable public attitude and create economic incentives for the introduction of such practices.

Tasks by the year 2000:

- to develop criteria, standards and normatives for assessing technological processes and products from the standpoint of sustainability;
- to introduce the principles of ♪good housekeeping into production and everyday life;
- to elaborate legislative acts regulating environmental, economic and social activities in order to promote clean, sustainable production;
- to develop economic incentives promoting sustainable production;
- to improve environmental management, primarily at the enterprise level;
- to implement the best available technology and the best environmental practices in new and reconstructed enterprises;
- to attach higher value to natural resources, to consider their consumption rate and damage caused to the environment in production costs;
- to elaborate a labelling system for environmentally sound products.

Tasks by the year 2010

- to introduce the best available technology and best environmental practices into production and everyday life;
- to consider environmental implications of the product in the product price throughout its life-cycle.

3.3 Reduction of Negative Environmental Effects of the Energy Sector

Goal: to reduce the environmental impact of the energy sector, to direct energy
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policies towards energy efficiency technology development programmes, more extensive use of renewable energy resources and reduction of greenhouse gas emissions, to include all environment-related costs of energy consumption in the energy price.

In order to promote energy conservation, it is necessary:

- to introduce new technologies to raise the efficiency of the energy sector starting from fuel supply through power generation and transmission to energy consumption;
- to stimulate the use of less polluting fuels;
- to encourage energy saving from the producer to the consumer;
- to support the use of renewable fuels and energy sources;
- to reduce the negative impact of the oil-shale energy complex on the environment.

Tasks by the year 2000

- to reduce the negative effects of energy and heat production by introducing the principles of good housekeeping;

Tasks by the year 2005

- to elaborate development trends in electricity production, taking into account environmental requirements;
- to introduce economic instruments that raise the efficiency of energy use;
- to reduce dust and ash emissions by 25% from 1995 levels;
- to terminate the use of high-sulphur fuel oil (sulphur content exceeding 2%).

Tasks by the year 2010

- to reduce emissions of pollutants in electricity production to a level harmonized with the European Union.

3.4 Improvement of Air Quality

Goal: to reduce emissions of pollutants to air, focusing primarily on pollutants causing climate change and ozone depletion, and on pollution originating from transport.

In order to achieve improvements in air quality, it is necessary:

- to support development of less polluting types and means of transport (railway, electric transport) and other means of public transport;
- to ensure the importation of high-quality engine fuel;
- to stimulate the consumption of cleaner fuels by differentiating the rates of excise taxes for motor fuels according to their quality and environmental hazardousness.
- to impose restrictions established by international conventions on the use of ozone depleting substances and in order to achieve reduction of emissions of volatile organic compounds and heavy metals, emission of sulphur and nitrogen compounds, and stabilization and reduction of emissions of greenhouse gases (CO₂, CH₄, C_xH_y).

Tasks by the year 2000:

- to terminate the sale of ozone depleting substances and impose considerable restrictions on the consumption of such substances;
- to stabilize emissions of nitrogen compounds at the 1987 level and to aim for further emission reduction;
- to establish a strict control system for checking the compliance of emissions of exhaust gases with the established emission standards;
- to establish stricter requirements for imported and existing motor vehicles with regard to their emissions;
- to reduce the emission of organic volatile compounds by 50% compared to the 1990 emission level;
- to reduce the use of ethylized petrol by 80% compared to the 1995 consumption level;

Tasks by the year 2005:

- to meet the EU air quality standards;
- to reduce the emission of sulphur compounds by 80% compared to the 1980 emission level;
- to reduce the emission of solid substances by 25% compared to the emission level of 1995;
- to terminate the use of ethylized petrol;

- to terminate the use of diesel fuel with a sulphur content in excess of 0.05%.

Tasks by the year 2010:

- to ensure that emissions of polluting substances do not exceed European Union standards.

3.5 Reduction of Waste Generation and Improvement of Waste Management

Goal: to support sustainable use of raw materials, to reduce waste generation, to stimulate waste recycling, to reduce environmental pollution caused by waste, to reduce areas contaminated by waste, to improve waste management (especially hazardous waste management).

The choice of solutions for improving the waste management system should be based on the following list of priorities:

1. prevention of waste generation;
2. reduction of generated waste volumes and decrease in their hazardousness;
3. increase in the quantity and scale of recycled wastes:
 - reuse of waste;
 - recycling of waste
 - use of biological processes (composting);
 - energy production (combustion).
4. consideration of environmental safety and requirements in waste treatment;
5. environmentally safe disposal and final disposal of waste.

Tasks by the year 2000:

- to stabilize waste generation in industry and in households at the 1995 level;
- to appoint owners/operators for existing landfills and to close down landfills which do not have an owner/operator;

- to increase the degree of waste recycling to 30% - 40%;
- to establish new landfills and close down old disposal sites in accordance with the requirements of the European Union;
- to dispose 40% of municipal waste in accordance with environmental and health protection requirements;
- to introduce a hazardous waste management system;
- to develop a programme for radioactive waste treatment and to ensure environmental safety of the existing disposal sites;
- to achieve compliance monitoring concerning all waste generators.

Tasks by the year 2010:

- to improve disposal methods and the use of oil-shale processing waste;
- to increase the share of waste recycling to 50%;
- to stabilize municipal waste generation at an annual level of 250 - 300 kg per person;
- to optimize the number of municipal landfill sites (up to 150);
- to treat, dispose and dump all wastes according to internationally accepted environmental and health protection requirements;
- to reduce the share of hazardous waste in the total waste volume;
- to construct a radioactive waste storage facility that meets European Union requirements;
- to offer waste management services all over Estonia.

3.6. Elimination of Past Pollution

Goal: to eliminate past pollution caused by closed down sites and to recultivate disturbed landscapes.

To achieve this goal it is necessary:

- to establish by law the liabilities of the site owner for environmental pollution and damage as well as the responsibility to eliminate past pollution in the case where

- ownership changes;
- to eliminate past pollution posing a threat to the environment which has been caused by industrial and military activities;
- to prevent migration of pollutants into the environment from industrial waste disposal sites (enrichment waste, ash and semi-coke dumps) and municipal landfill sites;
- to recultivate areas disturbed by the mining industry, to create aesthetic artificial landscapes and establish preconditions for restoration of soil fertility of the disturbed areas;
- to curtail the expansion of areas prone to mining subsidence and decrease the volume of mining waste, apply open cast mining as much as possible.

Tasks by the year 2000:

- to prepare an inventory of past pollution originated from abandoned military sites, industrial enterprises and municipal landfill sites and to assess their environmental risks;
- to localize past pollution of soil in areas where it poses a direct risk to ground water and human health;
- to recultivate areas disturbed by mining activities according to projects drawn up in compliance with established procedures.

Tasks by the year 2005:

- to decommission and recultivate abandoned quarries;
- to prevent migration of pollutants from currently operating industrial waste depositories and municipal landfill sites into the soil and into surface and ground water; to recultivate abandoned industrial waste depositories and municipal landfill sites.

Tasks by the year 2010:

- to ensure isolation of past pollution sites which are of enhanced environmental risk.

3.7. Better Use and Protection of Ground water Supplies

Goal: to ensure good quality ground water supplies as well as their sustainable use and protection.

To achieve this goal it is necessary:

- to introduce sustainable ground water exploitation systems in regions of ground water deficit;
- to minimize losses of ground water in extraction, distribution and consumption;
- to improve ground water protection, to eliminate local past pollution and the existing pollution sources.

Tasks by the year 2000:

- to reduce leakages in water supply systems by 50%.

Tasks by the year 2005:

- to develop drinking water supply systems in small settlements (especially in the case of contaminated water intakes);
- to ensure effective protection of the ground water formation area on the Pandivere Upland;
- to eliminate the main sources of ground water pollution;
- to localize areas with contaminated ground water;
- to reduce the use of quality ground water in industry;
- to increase the recycling of water.

Tasks by the year 2010:

- to develop possibilities for the population to get quality ground water;
- to eliminate leakages in water supply systems as far as technically and economically feasible;
- to reduce the use of water per production unit.

3.8. Protection of Surface Water Bodies and Coastal Seas

Goal: to ensure ecological balance of surface water bodies and coastal seas, natural regeneration of fish stock and aquatic flora and fauna by rational use of water bodies.

To achieve this goal, it is necessary:

- to introduce a countrywide scheme of rational use of water bodies;

- to introduce rational use of water in industry and in households;
- to ensure biological and, if necessary, chemical treatment of waste water contaminating the environment.

Tasks by the year 2000:

- to bring the main municipal and industrial waste water treatment indicators (BOD, phosphorus etc.) in line with the recommendations of the Helsinki Commission (HELCOM) of the Convention on the Protection of the Baltic Sea Region Marine Environment.

Tasks by the year 2010:

- to remove nitrogen compounds from the waste water of municipalities of over 5,000 inhabitants in accordance with the HELCOM recommendations in order to maintain ecological balance of water bodies sensitive to nitrogen content.

3.9. Maintenance of Landscapes and Biodiversity

Goal: to ensure preservation of viable populations of local plant and animal species, natural and semi-natural communities and landscapes typical of Estonia.

Tasks by the year 2000:

- to improve protection of plant and animal species, their habitats and landscapes in accordance with revised legislation, bearing in mind international agreements and European Union requirements;
- to improve the existing network of nature reserves in accordance with EU recommendations in order to ensure protection of ecosystems;
- to establish a network of forests protected according to nature conservation criteria thus ensuring preservation of all natural and semi-natural forest types and communities.

Tasks by the year 2010:

- to establish a network of nature reserves corresponding to EU recommendations where zones of strict protection (strict nature reserves and special management zones) would cover up to 5% of the terrestrial area of Estonia.

3.10. Improvement of the Quality of Built Environment

Goal: to bring the state of the built environment into conformity with the principles of health protection and sustainable development.

Establishment and preservation of human and nature friendly built environment is both a slow and expensive process. To achieve this goal it is necessary to step by step and systematically direct the national economic, regional, agricultural, housing, etc. policies towards:

- preservation of cultural landscape heritage;
- promotion of country life as a life style;
- encouraging industrial production in smaller towns and rural settlements;
- promotion of energy and water saving in buildings;
- promotion of construction requiring the use of less materials, including reduction of the use of non-renewable building materials;
- prolongation of the lifetime of buildings and reduction of repair volumes;
- demolishing of useless buildings or parts of buildings and the recycling of demolition and construction waste;
- reduction of noise levels;
- promotion of construction of private houses;
- increasing the number of green areas in towns and other settlements and attaching more value to the aesthetic aspects of the built environment.

Tasks by the year 2000:

- to work out a renovation programme for large panel houses proceeding from the principles of sustainable development;
- to draw up an action plan for exploitation, preservation and maintenance of agricultural landscapes.

Tasks by the year 2010:

- to bring manufactured, marketed and utilized building materials into compliance with modern environmental and health protection requirements;

- to work out modern building norms and regulations harmonized with those of the EU.

4. Instruments for Sustainable Use of Natural Resources and Environmental Management

4.1. Environmental Legislation

By the end of 1995 about 70% of all legal acts necessary to regulate the use of natural resources, environmental protection and spatial planning in Estonia had been adopted, were in the process of being adopted or drafted.

In future primary emphasis will be placed on efficient organization of the legislative process, systemisation of legal acts and implementation of necessary measures for integration to the EU.

To achieve this goal it is necessary:

- to cover unregulated areas gradually with legal acts;
- to integrate relevant environmental requirements into economic and social legislation;
- to draw up and harmonize legal acts as required by the White Book by 1997;
- to carry out analysis of legal acts in order to identify contradictions, variances and imbalances, and to propose amendments to current legislation;
- to establish environmental liabilities;
- to approximate Estonian legislative acts to those of the EU and integrate them into an Environmental Code by 2005.

4.2. Institutions

For the purpose of the National Environmental Strategy, institutions include public or municipal institutions and organizations dealing with environmental management.

The present institutional system was developed in the late 1980s and early 1990s. In principle, it consists of an institutionally and geographically dispersed management system. Environmental management institutions follow administrative regulations valid in Estonia.

The environmental management system includes:

Riigikogu (the Estonian Parliament) - the highest legislative body;

Government of the Republic of Estonia - supreme executive body.

Ministry of Environment - higher executive body on the territory of the Republic of Estonia carrying out national environmental policy and communicating with other states and international environmental organizations.

The administrative field of the Ministry includes:

- environmental management,
- landscape and biodiversity protection at the national level - activities connected with land, construction and regional planning;
- management and protection of natural resources and keeping of relevant registers;
- organization of supervision of the use of natural resources, environmental protection and building activities as well as of the use of environmentally hazardous substances;
- guidance in the field of weather forecasting and geodetics as well as in the organization of research in the fields of geology, building, nature, inland and marine waters;
- management of cadastres for natural resources.

As of 1 August 1996 the following boards and inspectorates were under the jurisdiction of the Ministry of Environment: Land Board, Forest Board, Fisheries Board, Nature Conservation Inspectorate and Marine Inspectorate. County environmental departments, land boards, building and architecture departments and forest boards are dealing with environmental problems on county level. The Land Board has local offices at Sillamäe and Narva. The Marine Inspectorate has six regional departments. There are environmental departments in Narva and Tallinn.

Regulation of environmental, landscape, biodiversity management, the use and protection of mineral and water resources as well as fish stock, is carried out through the environmental departments of the county authorities. These departments are also responsible for regional control of the use and protection of the environment and natural resources and coordination of environmental activities of the municipalities.

By 2000, the environmental administration and supervision system will be regulated at the national level. Establishment of five regional services instead of the current environmental departments in the county authorities will be considered. The Ministry of Environment will be reorganized. In future, the tasks of the Ministry will include legislation, coordination of implementation of environmental policy and development activities, international environmental cooperation and communication with other ministries and the public. The various boards will be responsible for the implementation of the environmental policy.

The objectives of this Environmental Strategy can be achieved only in cooperation with other

Ministries; consensus has to be reached in decision making and cooperation in the activities related to environmental protection within their areas of jurisdiction. It is essential to prevent overlapping or unregulated spheres of activities. The Ministries active in the areas of considerable impact on the environment (transport and communications, economy, agriculture) will establish structural units dealing with environmental issues. In order to ensure smooth cooperation with the Commission of the European Union, clear division of functions between the Ministries of the Environment and Social Affairs (health protection) will be considered.

With the development of the Estonian economic and administrative system, the role of the municipalities will gradually increase. In the process of regulation and improvement of legislation, this means that more attention will be paid to precise specification of obligations, rights and liabilities of municipalities. This in turn will require the establishment of environmental units at town and local government level.

In order to solve the problems on the spot, an environmental management system will be introduced at enterprise level, thus providing for a better occupational safety and working environment.

The demand for public participation and the growth of environmental awareness significantly increase the role of non-governmental and public organizations, citizens' associations and individual citizens in environmental protection. The state supports the implementation of this requirement.

Gradually, an independent ombudsman for pre-court and formal resolution of environmental disputes will be established as well as an environmental court within administrative court system.

4.3. Anticipative Instruments

The most significant anticipative instruments applied to prevent environmental damage are planning, environmental impact assessment and environmental auditing. Other measures include risk assessment, reduction and prevention as well as assessment of the efficiency of environmental management.

4.3.1. Spatial Planning

Planning together with environmental impact assessment is one of the most significant and complex instruments in shaping the environment.

Spatial planning is carried out at four levels. The purpose of strategic planning (state master plans, county plans, general plans of local municipalities and towns) is to balance territorial, economic, social and environmental as well as individual and general interests. The purpose of detailed planning is to prepare building and development activities while considering possible environmental impacts. While influencing public opinion as well as training of administrative officers, specialists, interest groups and public, e.g. shaping public preferences, special attention is paid to the introduction of transparency and democratic

requirements.

Cooperation between different planning and administrative institutions will be improved. When considering the international integration of the Estonian economy and the issue of transboundary pollution, international and multinational planning is becoming gradually more and more important.

The balancing of environmental and economic interests is the main task in drafting the Estonian strategic plan (Estonia 2010) and county plans. The latter will be ready in 1998. Revision of earlier plans will be finalized in 1996.

Strategic plans for communes are a prerequisite for balanced development. The elaboration of these plans is supported by the state. They should be ready by 2005.

4.3.2. Environmental Impact Assessment and Environmental Auditing

The most effective measures in the prevention of environmental damage include consideration of environmental impacts at the earliest possible stage of the decision-making process, and the monitoring and assessment of these impacts.

Environmental Impact Assessment (EIA) is the obligatory assessment of the compliance of proposed activities with environmental requirements and principles of sustainable development in the preparation of decisions which have an impact on the environment and in order to assist in finding an optimum solution. EIA is also a mandatory part of the environmental permitting procedure in terms of use of nature, pollution and construction.

Until 1997, EIA will be carried out either by the Ministry of Environment or by Environmental Departments of County Governments depending on the size and environmental hazardousness of the facility. After the new EIA and Environmental Auditing Act which follows the EU directives and the principles of the convention on transboundary environmental impact has come into effect:

- enterprises are responsible for carrying out EIA studies;
- public participation in the EIA procedure is promoted through local authorities;
- Ministry of Environment ensures that EIA procedure will be carried out before decision-making;
- awareness of decision-makers, combined with public pressure, has to secure consideration of the EIA results.

The requirement for licensing of experts to perform EIA studies will be maintained as well as state control of EIA quality.

Environmental audit assesses whether the activities and management of an operating enterprise meet the requirements of environmental protection, good environmental practice

and the main principles of sustainable development. Environmental auditing should develop into an integral part of the environmental management system at the enterprise level. Environmental auditing must be mandatory in privatization (it is recommended in the case of other changes of ownership), for environmentally hazardous facilities, and where there is systematic violation of environmental requirements and when applying for public investments and loans.

A new system for assessment and management of environmental risks will become an integral part of EIA and environmental auditing.

4.4. Regulatory Instruments

4.4.1. Environmental Quality Requirements and Standards

Environmental normatives, which establish quality requirements for environmental media, take primarily into consideration human health (environmental quality requirements) and limit values for pollution sources (emission normatives), are implemented in environmental protection.

Environmental quality requirements (control values) in Estonia, as of January 1996, were established for ambient air, drinking water, ground water and soil. Quality requirements for noise, vibration, radiation and sludge are being prepared.

Emission normatives have been established for wastewater and exhaust gases of vehicles. The latter as well as the valid normatives for the noise level of motor vehicles correspond with those of the EU. Emission normatives for pollutant concentration in wastewater will be harmonized step by step with those of the EU, according to their environmental and economic importance and taking into account the specific character of the Baltic Sea Region. When establishing discharge limits for air and water pollution sources the EU emission normatives per production unit will be introduced step by step.

The number of substances to be controlled has been reduced and most of the normatives have become more realistic compared to those of the former Soviet Union. Many normatives are equal to, or more stringent than, those of the EU (e.g. relevant normatives on wastewater purification corresponding to HELCOM recommendations and securing the ecological balance of the Baltic Sea).

The environmental standards valid in Estonia as of 1996 are outdated and need to be reviewed. Until now, standardization activities in the environmental sphere have been limited to checking environmental aspects of product standards. In future, work of environmental laboratories (sampling, methods of analysis) will be regulated by standards. The same applies to the introduction of environmental management systems in enterprises, undertaking of environmental audits, qualification requirements of auditors, assessment of effectiveness of environmental management, analysis of product life cycles, establishing of criteria for ecolabels and other matters of "good housekeeping".

Before 2010, about 350 various environmental standards of the International Standard

Organisation (ISO) and the European Standard Committee (CEN) have to be introduced. International and regional cooperation in the field of ecolabels will be developed and a common Baltic ecolabel system established.

4.4.2. Environmental Permits

Environmental permits for research activities, the use of environmental media or for activities affecting the environment are issued by regional environmental departments and the Ministry of Environment. The most important among these are permits for geological survey (research), mining of mineral resources, water permits, air pollution and waste permits. The latter three permit types stipulate emission and discharge limits for enterprises. The permits are valid for up to five years. In the case of mineral resources - up to 25 years and the provisions of the permit can be revised after five years. The process of issuing permits has to promote the introduction of cleaner technologies and sustainable use of natural resources. Thus, the current trend in issuing permits is to rely more on the results of EIA and take into account the requirement for the introduction of the best available technology and best environmental practices.

Permits for fishing are issued by the Ministry of Environment, the Board of Fisheries, the governor and/or the local authority. Permits for hunting are issued by the operator of the hunting area. Felling permits for felling in state owned forests are issued by a forestry unit, in municipal forests - by the local authorities. Construction permits are issued by local or town authorities.

Issuing environmental permits is a public procedure. Strengthening of supervision of compliance with the requirements established by permits is one of the priorities of the environmental management system.

In the near future an integrated permit system has to be elaborated. This is one of the prerequisites for accession to the EU. The system ensures comprehensive consideration of environmental effects caused by the permit owner.

4.4.3. Supervision

Within the field of administration of the Ministry of Environment, liability for supervision rests with three boards (Land Board, Forestry Board, Board of Fisheries), two inspectorates (Nature Protection Inspectorate, Marine Inspectorate), 16 nature reserve administrations, the Environmental Department of Narva and on the Environmental Departments of the county governments and Tallinn City. In the case the Board of Fisheries and the Board of Forestry is reorganized into departments of the Ministry of Environment, the Act on Administration will be amended and the Ministry will be vested with the right of enforcement in regard to third persons.

In future, supervision will be mainly concentrated in two independent inspectorates: the Environmental Inspectorate (covering activities on the mainland and inland water bodies, as well as construction) and the Marine Inspectorate (covering the sea and inland border water

bodies). Supervision of radiation protection will be conducted by the Radiation Centre.

Inspectorates will be developed further into supervision bodies with the help of the staff of inspectors in Tallinn and in the counties (regions).

4.5. Economic Instruments of Environmental Management

The objective of using economic instruments of environmental management is to influence both producers and consumers to use natural resources in a rational way, to avoid pollution and waste generation as much as possible, to ensure better market conditions for environmentally sound products than for competing products which use more polluting and waste generating technologies. The main principles of using economic instruments are as follows:

- all the environmental protection costs incurred throughout the life cycle (production, distribution, use, final disposal) of the product, environmental damage and the value of natural resources used should be included in the price of the product;
- the revenue collected from the taxation of natural resources and environmental pollution will be used for solving environmental problems;
- common rules proceeding from environmental requirements of free market principles are valid for different polluters and users of natural resources.

Economic instruments should include:

- financial support from the state;
- pollution charges the stimulative effect of which will be improved and exemptions not corresponding to free market requirements withdrawn;
- charges for the use of natural resources;
- differentiation of taxes for the purpose of environmental protection;
- local taxes;
- pledge system (pledges for recycling packages, car tires, car bodies, accumulators, batteries, motor oil, etc.);
- environmental insurance (insurance for pollution risk).

State support is provided in the form of subsidies, dotations, soft loans, covering of loan interest, etc. State support is based on cost-effect analyses and is granted to economically substantiated activities which are highly beneficial to the environment. In this case, the state budget and non budgetary funds (Environmental Fund, Forest Fund, Fisheries Fund, etc.) will

be used as financing sources.

In the short term, the state budget, the Environmental Fund and the Fund for Natural Resources will:

- support local authorities in developing the technical infrastructure for environmental protection (at least 6% from the Public Investment Programme);
- cover a part of the management costs of the existing waste water facilities in economically underdeveloped regions;
- support treatment of hazardous and radioactive waste;
- cover the costs related to elimination of past pollution (military pollution caused by the former Soviet army, past pollution on abandoned sites, past pollution transferred to state responsibility during the privatization process);
- partially compensate for damage caused by protected species as well as for owner's lost revenue due to legal environmental protection restrictions.

At the same time, promotion of activities aimed at the prevention of waste generation and the introduction of environmentally sound technologies, including support to corresponding information and consulting centres, will take place.

The tax system in Estonia still has room for development in the field of promoting sustainable use of natural resources and environmental protection. In accordance with the socioeconomic development of the country and environmental requirements, the following measures will be gradually applied:

- introduction of excise taxes differentiated according to adverse environmental impact and quality of the product (lead content in motor fuels, sulphur content in diesel and heating fuel, environmentally sound cars);
- introduction of excise taxes for environmentally hazardous products (disposable packages, detergents, fertilizers);
- tax exemptions from income taxes, customs taxes and VAT.

In order to make the tax system more environmentally sound and to avoid increasing the general tax burden, the aim will be to introduce taxes which would be a source of income at the national and local levels and would have a positive impact on the environment, and at the same time, would reduce income tax and VAT burdens. Such taxes could include an energy tax, tax for the use of roads, car tax, parking tax, waste tax, etc.

4.6. Environmental Information and Education

Assessment of the environmental status, existence and availability of information and active

public support are the prerequisites for successful environmental protection.

Estonia's natural resources have been relatively well studied. Information on their volume and status will be reviewed and made available to the public using modern tools.

Gathering and dissemination of environmental information is oriented at:

- identification of measures necessary to ensure sustainable use of natural resources and the solution of environmental priorities and problems;
- providing public authorities and the population with qualitative and operative information and ensuring environmental safety;
- providing necessary information for making decisions affecting the environment, supervision of implementation of these decisions and assessment of their effectiveness;
- public participation and promotion of environmental awareness;
- informing non-governmental and international environmental organizations.

In order to develop environmental values and to promote environmental education:

- the role of the Ministry of Environment in educational work and in diversification of the forms and opportunities of advanced environmental training will be increased;
- introduction of interdisciplinary environmental education in secondary schools will start in 1997;
- a general environmental protection course will be included in the curricula of universities, high schools and vocational schools;
- environmental education of landscape architects and spatial planners will be improved;
- in order to increase the level of environmental education, a national network of advanced training will be established;
- the level of education of environmental officers as well as local and municipal authorities will be improved;
- the dissemination of information on environmentally sound technologies (clean technologies) will be organized;
- a Public Relations Bureau will be established at the Ministry of Environment to promote public information;

- the environmental aspect will be incorporated into consumer protection promotion in order to guide sustainable public consumption habits and nature conservation;
- special attention will be paid to promoting public awareness of the unique values of biological diversity and the need for its protection;
- international and national environmental documents will be made available and explained to the public.

Public Participation

Giving people an opportunity to participate in solving local and national environmental problems and to make corresponding decisions is a prerequisite for increasing public participation in environmental matters. In order to achieve this, the following measures will be taken:

- results of environmental impact assessment studies, physical planning schemes, procedure of applying for and issuing nature use and pollution permits will be made available to the public; the right and opportunities of the population to influence decision-making will be taken into consideration and rendered possible;
- establishment of nonprofit associations and other non-governmental structures dealing with environmental protection will be supported;
- incentives to motivate the public, such as environmental competitions, bonuses, etc. will be used more actively.

Information and Accessibility

Accessible and reliable information necessary for decision-making is based on monitoring systems and is provided by the institutions dealing with environmental information.

Environmental monitoring will be carried out and coordinated by enterprises, local authorities and the state according to their competence. The Information Centre of the Ministry of Environment will collect and analyse monitoring data and environmental information. Thereafter, it will draw up information bulletins and systematically inform the Ministry, county and local authorities of emergency situations and important trends.

The public will be systematically informed about the state of the environment, given operative information about threats to the environment and ways of acting in emergency situations. Environmental information has to be available also on territories administered by military structures.

A system facilitating the use of environmental indicators will be introduced. Dissemination of environmental information through the Internet will increase.

Currently, cooperation and exchange of information with the European Environmental Protection Agency is being developed via the EIONET information network.

CONCLUSIONS

The introduction of Estonia's environmental policy through implementation of this environmental strategy means restoration and preservation of a living and cultural environment which ensures:

- environmentally sustainable use of the nature historically traditional for Estonia;
- preservation of biological and landscape diversity;
- consideration of nature conservation requirements in privatization of assets and in carrying out land reform;
- that the public is informed about the decisions taken, projects drawn up and work undertaken;
- prevention of environmental damages;
- finding solutions to environmental problems as close to the sources as possible.

These tasks are to be solved by the entire society - from the legislative powers to every single individual.

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