

GEF project # GF/2740-03-4608

National Capacity Needs Self-Assessment for Global Environmental Management in Estonia

Final NCSA-Estonia Document



MINISTRY OF THE ENVIRONMENT



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PREFACE

It is a pleasure to present a final report of the National Capacity Self-Assessment (NCSA) launched by Estonia with support from the Global Environment Facility (GEF) and the United Nations Environment Programme (UNEP), which is to lead a better understanding of the capacity development needs in the context of Estonia's priorities for addressing global environment challenges. The NCSA project was an excellent opportunity for Estonia to carry out an analysis of its environmental policies, determine its shortcomings and find solutions to overcome thereof.

As part of the global economic, cultural and environmental area, only adequately perceiving and taking into account global processes and trends can effect Estonia's development. The principles of the conventions, as well as of the European Union environmental policy have been established as priority areas for the next ten years.

Since Estonia has been performing the obligations undertaken when joining the Conventions on Biological Diversity and Climate Change for over ten years already, a lot has been accomplished. However, problems still persist when it comes to determining the common interests in the conventions and overcoming the conflicts built into them. To date we have been unable to find ways on how to jointly develop the Rio environmental conventions in an optimal manner that would result in synergies beneficial for environmental protection both in Estonia and on the global level. Estonia had not ratified the Convention to Combat Desertification by the time this NCSA Document was prepared. Preparations for acceding to the Convention to Combat Desertification are underway.

The results of this project were significantly influenced and made possible through the positive spirit, remarkable openness and wide range of helpful responses from which the project team benefited. Especial thanks to the Project Management Team, the Institute of Ecology for the excellent project management, efficient provision of key information and documents and for the arrangement in contacting the key people involved in this initiative at both the national and local levels. Special thanks to the Steering Committee, comprising representatives from the ministries, the Parliament, Office of the President and NGOs.

We hope that this document will contribute to the process of harmonization of implementing the Rio conventions. We also wish that other regions of the world could also use the experience gained by Estonia institutions and specialists.



Allan Gromov

Deputy Secretary General on International Co-operation, Ministry of Environment
Chair of Steering Committee of NCSA-Estonia

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EXECUTIVE SUMMARY

Introduction and Background

Today's growth in human population and a sharp increase in consumption have turned environmental problems into issues of global significance. People have understood that the future of our planet depends on how countries are able to agree on common rules to ensure that human existence on the Earth lasts as long as possible. In 1983 the UN General Assembly established the independent World Commission on Environment and Development, led by Gro Harlem Brundtland, aiming to define global problems and seeking solutions thereto. The 1987 Brundtland Report *Our Common Future* (I, II) defined the principle of sustainable development as development "which meets the needs of the present without compromising the ability of future generations to meet their own needs". The 1992 United Nations Conference on Environment and Development in Rio de Janeiro was a major breakthrough in this respect, formulating the concept of sustainable development.

The principles of maintaining the quality of the environment and using its resources in a balanced manner have been set out in three documents approved by the UN member states, dealing with the different facets of the natural and human environment. These documents are generally known as the Rio conventions:

- The United Nations Convention on Biological Diversity, whose main objective is conservation of biological diversity at its various levels, both occurring naturally and in domesticated or cultivated form.
- The United Nations Framework Convention on Climate Change, whose principal objective is to control and slow down the increase in anthropogenic greenhouse gas concentrations in the atmosphere and to develop measures to mitigate the effects of possible climate changes.
- The United Nations Convention to Combat Desertification, whose principal objective in the narrower sense is to put a stop to the worsening of the environment in the arid climatic zone and in a broader sense to protect the soil as a valuable global resource.

Estonia ratified the Convention on Biological Diversity and the Framework Convention on Climate Change on May 11, 1994. Preparations for acceding to the Convention to Combat Desertification are underway.

As part of the global economic, cultural and environmental arena, Estonia's development will only proceed by adequately taking into account, global processes and trends. The principles of the conventions, as well as of the European Union environmental policy, have been established as priority areas for the next ten years. Acceding to the conventions means that the provisions thereof take precedence over domestic law and activities, and countries are bound by the international commitments undertaken under the conventions. Given the broad scope of application of the individual conventions, the specific nature of local circumstances and the needs and interests of the states, the environmental and economic policy acts may in practice turn out to be in conflict with the objectives of the conventions.

Estonia, with the support of the United Nations Environment Programme (UNEP), has initiated a self-assessment process to lead to a better understanding of capacity development needs in the context of Estonia's priorities for addressing global environment challenges, and to gain a better understanding of how the global environmental management system may assist Estonia to address these capacity development needs. The National Capacity needs Self Assessment (NCSA), project was implemented by a broad-based working group established by the Institute of Ecology (IoE) at Tallinn Pedagogical University (TPU) and operating under the guidance of a Steering Committee (SC), comprising representatives from the ministries, the Parliament, Office of the President and Non Governmental Organisations (NGOs).

The objectives of the NCSA project were the following:

- To identify priority issues for capacity building for the themes of biodiversity, climate change and land degradation;
- To explore the needs for capacity building within the framework of each issue and those arising from the interrelationship of these issues,
- To catalyze targeted and co-ordinated action, and requests for future external funding and assistance;
- To couple specific environmental protection activities with the broader framework of national environmental management and sustainable development.

In order to fulfil the above objectives a total of 127 legislative instruments of different level, and 119 development plans, programmes and other documents were reviewed. Relevant questionnaires were developed and sent to ministries, agencies, stakeholders. Interviews and forums were organised to obtain information about how the ideas of the conventions have been reflected in the legislative instruments, and about problems with actual implementation of legislative decisions and national plans.

The first phase of the project was devoted to analysing issues relating to the individual conventions. In the second phase capacity constraints were determined which were common to at least two conventions. Then the significance of the capacity constraints to successful implementation of the conventions was subjected to a comparative assessment. In addition, proposals were made to overcome the constraints by both legislative and executive means.

Identified Thematic Priority Issues

The thematic profiles are a thorough review of the progress made with each Rio Convention in Estonia in terms of:

- Legal instruments and their effectiveness
- National programmes and projects
- Implementation of convention issues in national programmes
- Monitoring of adopted programmes
- Databases
- Financing
- Stakeholders
- Public awareness
- The outlook for implementation of convention

Annex 1 (a-c) contains the thematic profiles for each of the three conventions.

The Thematic Profiles were then used to identify priority issues for implementing the Conventions. Annexe 2 (a-c) lists the priority issues for each convention. The issues have been subdivided into general issues and specific subject areas, and given their priority ranking.

The general priority issues for the successful implementation of the Convention on Biological Diversity were identified as follows:

1. Estonia lacks a competent and permanent system, and financial resources, for maintaining and administering information and managing the integration of the convention into sectoral policies.
2. Insufficient account is taken of biological and landscape diversity in preparing land readjustment plans and other plans.
3. Insufficient support is given to small enterprises, especially in rural areas.
4. The state provides insufficient protection to Estonian genetic resources (indigenous animal and plant species).
5. The knowledge of nature is given insufficient attention in study programmes at all school levels.

The priority issues to the successful implementation of the Convention on Climate Change were the following:

1. Estonia lacks a competent and permanent system, and financial resource, for performing the obligations arising from the Convention; cooperation between ministries and state agencies is poor.
2. Some of the requirements of the convention conflict with the national economic and social development goals.
3. There is a low level of applied research in the areas of national energy, industry and transport technology and planning.
4. Administrative capacity in organising the energy sector (including renewable energy,) and the transport system, is not effective.
5. The inability and often the inadequacy of the educational system and the media in explaining the nature of climate change and the possibilities of mitigating its impact.

Estonia has not ratified the Convention to Combat Desertification yet. The main priority issues below certify the need for the ratification thereof:

1. There is a general reduction in the soil fertility of areas under cultivation resulting from past intensive farming and from the current deterioration of social and economic circumstances in rural areas.
2. There is physical degradation of soil resulting from the spread of man-made environments, mining areas and constructions in suburban areas, on coastlines and near highways, as well as from reckless logging.
3. There is underestimating and failure to value soil as a natural resource in legislation and in practice.
4. Changing of landscape-related values and the structure of land use.
5. Issues related to water economy are dealt with by different ministries and coordination between them is poor.

Most of the above problems characterise the implementation constraints of all the conventions, but their significance can vary, depending on the objectives and underlying ideology of each individual convention. However there are certain situations where legislation supporting one convention and activities aimed at implementing thereof can be in conflict with the objectives of another convention: For example with renewable energy the development of hydro-electric power plants mitigates the environmental problems deriving from the use of fossil fuels, but at the same time may adversely affect biological diversity; Similarly letting arable land overgrow with shrubs would help bind more CO₂ but would also result in destroying our traditional landscapes and if one were to use land improvement later to fix the soil once again, considerably more carbon dioxide would be emitted. It is for this reason that the NCSA project documents provide for the analysis of the synergies to be achieved from joint implementation of the three environmental conventions.

Capacity constraints to successful joint implementation of the environmental conventions

In the next stage each of the priority issues were reviewed and their associated capacity constraints were identified. Annex 3 (a-c) summarises the capacity constraints and whether the constraints are at the systemic, institutional or individual level.

The following capacity constraints were identified from the analysis of joint implementation of the conventions:

1. Although valuable results, high-level analyses and reports have been produced on the basis of all three conventions, there is a lack of sufficient cooperation in both theoretical and practical joint implementation thereof.
2. Most of the national documents are not in conflict with the intent of the individual conventions; however, conflicts can arise in the development plans in the field of joint implementation.

3. Lack of adequate statistical background often comes in the way of successful implementation of the conventions.
4. There are serious shortcomings in inter-ministerial cooperation, especially in areas covering different fields (rural life, building activities, transport, and water management).
5. Implementation of and supervision over legislation, poor administrative capacity of the relevant system.
6. Poor state of the education system, lack of educated specialists, who are aware of the joint impact of the conventions, low environmental awareness levels among officials.
7. Failure of the media to adequately assess and cover the issues.

Opportunities for Synergistic Environmental Management

Given that an important element of the project was to couple global environmental management within the framework of national sustainable development priorities, an analysis of the problems of implementing the conventions synergistically was undertaken. The analysis was divided into the following categories:

- general issues
- energy and transport
- land use and rural life
- education and media

Proposals were made to overcome the constraints by both legislative and executive means. The specialists then recommended a number of actions to increase the synergies from the three environmental conventions. These included:

1. Preparing for accession to the Convention to Combat Desertification.
2. Establishing efficient and permanent councils for all conventions with the Ministry of Environment (MoE).
3. Establishing a permanent Environmental Conventions Round Table consisting of specialists in the conventions and representatives of the convention councils, either in the immediate area of administration of the Prime Minister or with the Research and Development Council.
4. The above round table of specialists to develop the strategy for joint implementation of the conventions.
5. The relevant ministries to come to agreement as regards the imposition of pollution charges and energy taxes, and the principles of distributing the revenues so collected. The economic feasibility of establishing the Energy Agency should also be considered.
6. Applied research towards determining Estonia's possibilities for increasing the binding of greenhouse gases should be stepped up significantly.
7. Complex solutions to problems related to rural life should be promoted.
8. Basic and applied research related to the protection of soil should be promoted.
9. The role of the environmental conventions should be increased in study programmes of all school levels and in continuing education programmes aimed at companies.

Annex 4 contains details of how this synergistic management might be put into action.

Next Steps/Follow Up

The proposal of the ratification of United Nations Convention to Combat Desertification (UNCCD) has been sent to the Estonian Parliament.

The Action plan was developed with the suggestions to the next steps included the establishing of the national joint committee on implementation of the Rio conventions and continues the NCSA initiative on monitoring and evaluation this process.

1. INTRODUCTION AND BACKGROUND

1.1. NCSA Objectives

This National Capacity Self-Assessment Document is the result of the project launched by Estonia, with support of the Global Environment Facility and the United Nations Environment Programme (UNEP), to improve the management of global environmental issues in Estonia on the basis of the Rio environmental conventions (hereinafter referred to as the NCSA). The NCSA project has been an excellent opportunity for Estonia to carry out an analysis of its environmental policies and determine its capacity development shortcomings. The next step will be to find solutions to overcome the capacity constraints.

The project is based on the provisions of the three environmental conventions adopted in Rio de Janeiro in 1991:

- United Nations Convention on Biological Diversity (UNCBD) (www.biodiv.org) (hereinafter referred to as the Convention on Biological Diversity);
- United Nations Framework Convention on Climate Change (UNFCCC) (www.unfccc.int) (hereinafter referred to as the Convention on Climate Change);
- United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD) (www.unccd.int) (hereinafter referred to as the Convention to Combat Desertification).¹

The primary goal of the project was to gain a better understanding of the capacity development needs in the context of Estonia's priorities for addressing global environment challenges, and to gain better understanding of how the global system may assist Estonia to address these capacity development needs. The goal also entailed a number of specific objectives:

- To identify priority issues for capacity building for issues of biodiversity, climate change and land degradation;
- To explore both the needs for capacity building within the framework of each issue and those arising from the interrelationship of these issues,
- To catalyze targeted and co-ordinated action and requests for future external funding and assistance;
- To couple specific environmental protection activities with the broader framework of national environmental management and sustainable development.

¹ Estonia had not ratified the Convention to Combat Desertification by the time this NCSA Document was prepared. Given that Estonia has to have acceded to the convention by the moment of joining the European Union, for the purposes of this project the issues arising from the Convention to Combat Desertification were looked upon as if Estonia had acceded to the Convention already.

1.2. Background to Estonia

Physical and Socio-Economic Context

The territory of the Republic of Estonia, the northernmost of the three Baltic countries, covers 45,227 km². Estonia lies almost entirely within the drainage area of the Baltic Sea. In the west and north it has a long coastline on the Baltic Sea with more than 1,500 islands. It has approximately 3,780 km of coastline. Estonia is a lowland country, its highest point rising to only 318 meters above sea level. Estonia is the smallest of the Baltic States, with a total population of 1.439 million (1 January 2000). The average population density is 32 inhabitants /km²; over 70% of the population is concentrated in urban zones.

The mainland of Estonia is largely flat and boggy with a relatively high forest cover. Compared to other regions at similar latitudes, Estonia retains a rich diversity of flora and fauna. The preservation of bogs, wooded meadows and wetland forests – mostly destroyed in the rest of Europe - is largely a result of the late introduction of intensive land use practices and the continued use of manual labour until relatively recently. The variety and mosaic of Estonian landscape results from the differences in bedrock and the retreating ice shield. Significant differences in climatic conditions over only a few hundred kilometres (from typical maritime to typical continental) have created diverse ecosystems. The variety of soil types has resulted in favourable conditions for flora and fauna.

Besides the diverse natural conditions, unique changes in the land-use have occurred with four principal land reforms carried out during the 20th century. The last reform (since 1990), involved land re-privatization and the re-transformation from industrialized agriculture to small-scale land-use. Forest is an important natural resource and is the basis of the wood processing industry. During the past half century the area of forest stands has more than doubled. Oil shale is also a key natural resource, and is the basis of Estonia's energy and chemical industries. Oil shale mining and combustion put a severe load on the environment, providing about 80% of all harmful emissions. During the last decade Estonia has moved towards a liberal free market economy. Environmental considerations are taken into consideration when establishing new enterprises. Application of resource and pollution charges has now provided a solid basis for integrating the principles of environmental protection into economic activities.

Environmental Strategies and Legislation

When Estonia regained its independence (1991), new legislation had to be drafted to govern environmental management. By the end of 1995 most of the legal acts necessary to regulate the use of natural resources, environmental protection and spatial planning had been prepared or had entered into force. In 1995, Estonia adopted an Act on Sustainable Development, the first of its kind in the ECE region. While already active from independence to 1995, the legislative development accelerated with the EU approximation process. The land reform started in 1991, but the first returned cadastral units of land were registered only in 1993. The privatisation process intensified from 1996 and the privatisation of free agricultural and forestlands started in 1999. The state decided that 40% of the land would continue to be state property; 30% would be restored to the previous (pre-Soviet era) owners and 30% privatized.

In March 1997, the Parliament of the Estonian Republic approved the National Environmental Strategy for Estonia (NES), which outlines trends, specifies the priority environmental management and protection goals and sets out the main short-term and long-term priorities to be achieved by the year 2000 and 2010 respectively. The environmental strategy 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, as well as to preserve diversity of landscapes and biodiversity while taking into account the level of economic development in the region. The priorities presented in the strategy must be taken into account when planning environmental activities, developing international cooperation and allocating national funds.

To implement the National Environment Strategy, a detailed National Environmental Action Plan (NEAP) was prepared in 1997-1998. Phase II of the document for 2001-2003 was approved by the GR on 5 June 2001 and the MoE was appointed as the agency responsible for the implementation of the action plan. The action plan will be subject to regular revision and specification to ensure that the rapid socio-economic changes and the impact of accession to the European Union (EU) are taken into account. It is recognized that the objectives of the National Environmental Strategy can only be achieved 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 to prevent overlapping or unregulated spheres of activities. The Ministries active in areas with a considerable impact on the environment (transport and communications, economy, agriculture) will establish structural units for dealing with environmental issues.

Another important strategic action plan, the National Programme for the Adoption of the Acquis (NPAA), was adopted in 1998 as the concretization of the EU accession process into which Estonia was officially entering. In order to incorporate the EU directives into its legislation, Estonia made a tremendous effort to reorganize and strengthen its institutions and to train staff. The accession process placed a significant demand for new tasks on the ministries. Particular effort was therefore devoted to staff training, often with the support of or through twinning with EU donor countries.

The strategy for Estonian sustainable development: Sustainable Estonia 21 (SE21), is an alternative comprehensive national development plan covering the issues of economy, culture and the environment. The document was developed in 2003. The strategy touches upon issues of nature in more general terms.

The Long-term National Fuel and Energy Sector Development Plan is a key document in the energy sector, setting out the principal developments of the sector until 2018. The development plan includes several aspects pertaining to environmental protection. According to the development plan it is the energy sector that mostly affects the environment in Estonia because of the structure of the economy (for example Estonia has no ferrous or non-ferrous metallurgy). The most important environmental priority of the development plan is to "guarantee the performance of international environmental requirements".

The Estonian Research and Development Strategy "Knowledge-based Estonia" for 2002-2006 sets out the key strategies and calls for an increase in the resources to be used for these strategies. National programmes are to be created and launched for developing the key areas. The key areas do not list the environment. However the text does mention that, in parallel with the development of the key areas, research in the Estonian language, national culture and history, in the sustainable development of statehood and the society; and in the preservation of nature and sustainable use of natural resources, shall be pursued and promoted in a consistent manner.

Institutional Framework for the Environment

The environmental management system includes: *Riigikogu* (the Estonian Parliament) - the highest legislative body; the Government of the Republic of Estonia - supreme executive body; and the Ministry of Environment - highest executive body in the territory of the Republic of Estonia responsible for carrying out national environmental policy and communicating with other states and international environmental organizations. As a rule environmental legislation is initiated by the Government of the Republic (GR), the Ministry of Environment (MoE) and the Ministry of Economic Affairs and Communications (MoEAC). The Ministry of Agriculture (MoA) and the Ministry of Education and Research (MoER) have also come forward with legislative initiatives pertaining to the principles of the conventions.

The Ministry of Environment comprises ten departments (Nature conservation, Forestry, Waste, Water, Fish resources, International co-operation, Environmental management and technology, Strategy and planning, Investment, and Legal affairs), as well as the Land Board, subordinated bodies and academic institutions (see www.envir.ee). The Department for Nature Conservation is responsible for the implementation of the UNCBD. The Management and Technologies department is responsible for the UNFCCC. The Department for International Co-operation bears overall responsibility for implementation of international agreements. The MoE, in cooperation with the environmental ministries in Latvia and Lithuania and other institutions, has organized Baltic regional conferences on the implementation of the environmental conventions since 1993.

The main functions of the Ministry of Agriculture of Estonia are to advise the Government of the Republic of Estonia in the field of agriculture and rural life, making proposals, and the implementation of agricultural and rural policies within their competence. The area of government of the MoA includes: the management of agricultural production; processing and agricultural marketing; the administration of the national reserves of foodstuffs, basic grain seed and grain for human consumption; the management of food safety and inspection; plant protection; veterinary medicine; animal and plant breeding; and agricultural environment programmes.

The objective of the Ministry of Economic Affairs and Communications is to create overall conditions for the growth of the competitiveness of the Estonian economy, and its balanced and vital development, through the drafting and implementation of Estonian economic policy and evaluating its outcomes. The MoEAC elaborates and implements the state's economic policy and economic development plans in the following fields: industry, trade, energy, housing, building, transport, informatics, telecommunications, and tourism; as well as co-ordinating the development of state information systems; research and development and innovation; and measures for regional development and investment.

At a county level environmental problems are dealt with by fifteen County Environment Departments which are responsible for regional control of the use and protection of the environment and natural resources, and co-ordination of environmental activities of the municipalities. Overall the Ministry of Environment counts 150 staff at the Ministry level and 300 in the 15 county authorities (i.e. about 20 employees per county office).

There is no continuous monitoring of the development plans and adopted programmes. The ministries are in charge of national development plans and programmes (MoE, MoA, MoEAC, and MoER). Usually their efforts are limited to revising and supplementing the plans at a pace established by the relevant document (e.g. every 3 or 5 years).²

The past decade has seen a steady increase in the number of NGOs, which deal with environmental problems, raising public awareness and other similar matters.³

² Creating a uniform standard for preparing national programmes would improve implementation of the programmes. The process has started already with the guidance of the MoF requirements for preparing strategic development plans. The State Budget Act (RT I 1999, 55, 584, last amended by RT I 2003, 24, 148) will be revised within the framework of this process as well.

³ Co-operation between the different organisations is quite good. However, in the course of drafting this document we learned that the environmental organisations were not too keen on offering their contribution, the alleged reason being the wide range of issues they were already involved in.

1.3. Methodology

The *Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management*, UNITAR 2001, served as the basis for implementing the project. The methodology covered the entire life span of the Rio environmental conventions from the development of the documents to implementation, monitoring and revisions. The methodology was reviewed and agreed by all parties involved in the formulation of the NCSA project report.

The NCSA activities followed a 'project' methodology, setting an overall time-table, describing a management structure and defining principles for the drafting of actions and their prioritisation. An important part of the NCSA process was the openness and transparency of the whole process and the involvement of a broad range of different stakeholders in society in order to build consensus and ensure ownership of the proposed actions. Two-way communication, stakeholder consultations and partnerships were used for the stakeholder involvement. For the provision of information, public participation, preparation of press coverage and interactive feedback, a big role was played by the NCSA project web-page for both experts and the public (http://www.eco.edu.ee/?_est.rakendus). A full list of participants in the project is given in Annex 5.

The NCSA Project through consultations, analysis, workshops, meetings and forums, focused on the following key issues:

- How to assist the implementation mechanisms, and how they should be negotiated, in order to effectively address the Rio environmental conventions' priorities in Estonia.
- How to build management capacity, and the capacity for more effective implementation of the Rio environmental conventions in Estonia.
- What any potential cooperation/negotiations should aim to achieve, and how would these be financed.
- What kinds of strategic alliances are needed to ensure that social, environmental and economic constituencies can start to work together for sustainable development.
- What do stakeholders, including independent civil society groups, recommend, and how effectively will the cooperation be organized between all stakeholders to become part of the process.

During the preparation of the NCSA project proposal a clear prioritization process for the NCSA project was developed in cooperation between the MoE, the convention Focal Points and the PMT. These prioritisation criteria were then agreed upon and adopted by the SC, as well as by the Focal points, at the first SC meeting.

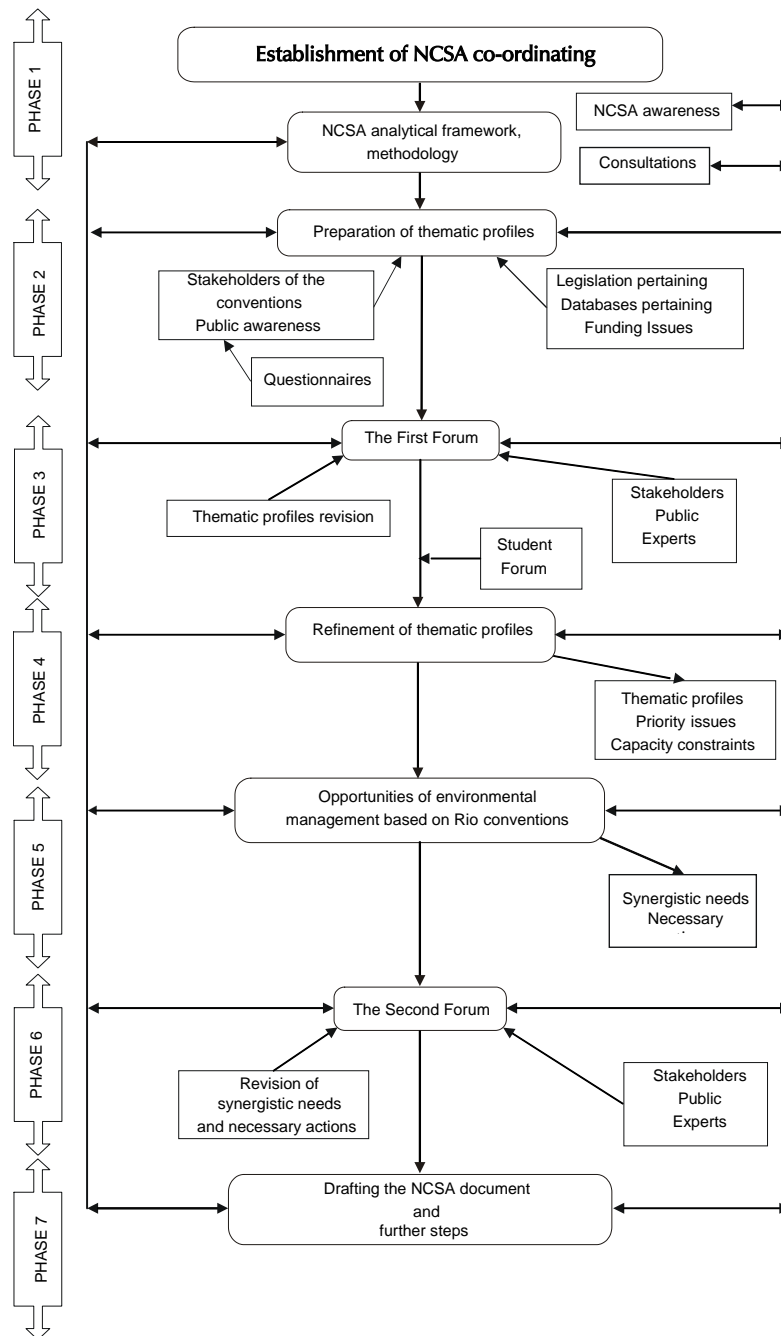
The following prioritisation criteria were:

- Mapping and system quality: the structure and processes infrastructure and ability to implement the conventions;
- Areas of work: to analyze the completed environmental documentation and to identify priority issues, capacity constraints, in order to avoid duplication of work and provide a sound justification for additional new studies and areas;
- Stakeholders;
- Partnership Opportunities: the extent to which needed work can be carried out with partners in the Estonia and abroad.

1.4 Project Activities

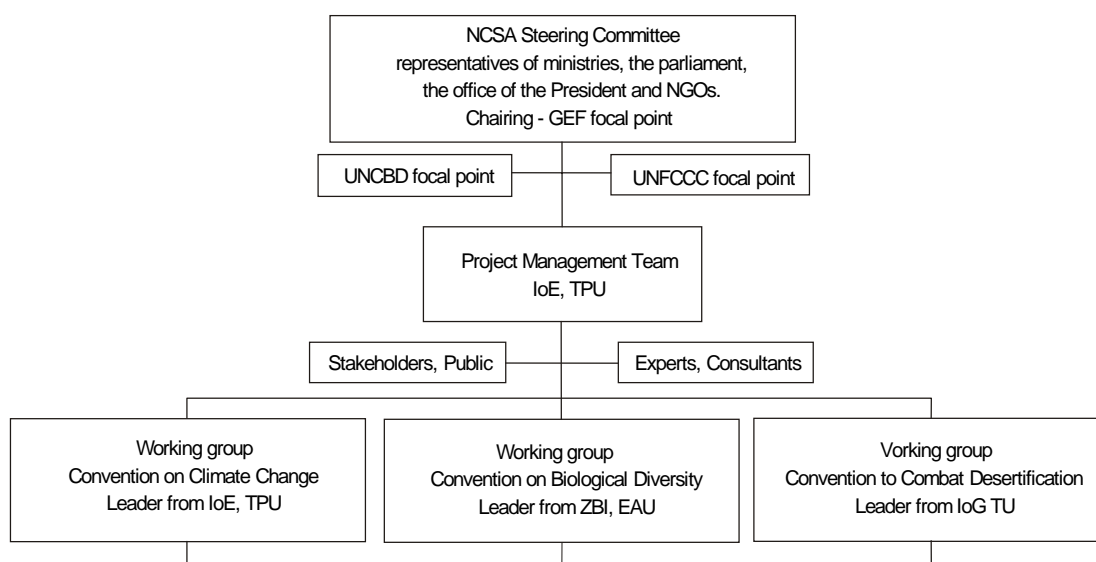
The project was divided into seven phases as illustrated in Figure 1 below.

- Phase 1 - Establishment of a NCSA co-ordination mechanism
- Phase 2 - Preparation of thematic profiles
- Phase 3 - The first forum
- Phase 4 - Refinement of thematic profiles
- Phase 5 - Opportunities of global environmental management in Estonia based on the Rio conventions
- Phase 6 - The second forum
- Phase 7 - Drafting the National Capacity Self-Assessment Document and further steps



1.4.1 Establishment of a NCSA co-ordination mechanism

For the successful implementation of the project a clear management structure was established with well-defined responsibilities, thereby ensuring efficiency of management, involvement of experts and ownership of the project by a broad range of stakeholders, as well as to inform the general public of the project activities through the whole life of the project. The following management structure was established for the project:



The NCSA Management Structure

NCSA Steering Committee

The MoE created the NCSA Steering Committee to provide general supervision over the project direction and management. The Steering Committee consisted of representatives of all ministries, the Parliament, the Office of the President and the non-governmental organisations (NGOs). The GEF operational focal point chaired the NCSA SC. (See list of Steering Committee members within Annex 5).

Project Management Team

The Project Management Team managed the day-to-day co-ordination of the NCSA project. The team, reporting to the Steering Committee, was responsible for developing the methodological structure of the project, provision of technical expertise and supervision of the Working Groups. It also published interim project reports, organised meetings and sessions, prepared quarterly reports to the Steering Committee and the UN Environment Programme. The IoE at TPU served as the National Executing Agency. The Project Management Team included leaders of working groups, the project leader and project co-ordinator and a project assistant. (See list of Project Management Team members within Annex 5).

Working Groups

Three Working Groups (WGs), were established for carrying out the tasks arising from the project, focusing on the thematic areas of each convention. The leaders of working groups were experts from the three major universities in Estonia:

- Convention on Biological Diversity Working Group - Institute of Zoology and Botany of the Estonian Agricultural University;
- Convention on Climate Change Working Group - Institute of Ecology of Tallinn Pedagogical University;
- Convention to Combat Desertification Working Group - Institute of Geography of the University of Tartu.

The leaders of WG's were free to invite members into the working groups, and membership varied during the different phases of the project. The participants involved in WG's came from public, academic and NGOs. (See the lists of working group members within Annex 5).

Convention Focal Points

The Convention Focal Points were initially involved in the NCSA process during the preparation phase, providing administrative and informative support for preparing the application. The principles of the project, its main goals and objectives, the methods, participants (PMT, WG leaders, and representatives of SC), etc. were all discussed and set up during the project preparation stage as well as during the first phase of project with the convention focal points. During the project regular consultations between the convention focal points and the PMT occurred, as well as consultations between the convention focal points and the Working Groups. Conventions focal points instructed WG-s in questions of relevant environment politics in Estonia. The PMT presented regular reports to convention focal points as well as to the SC.

1.4.2 Preparation of thematic profiles

The preparation of the thematic profiles for Estonia began with a review of the status and trends of the legal framework in Estonia and then an analysis of it. The process included two-way communications and consultations. For understanding the baseline situation for each thematic area the working groups began by collecting background information. Legislative instruments of all different levels as well as other national documents were combined into databases. Various reports and action plans that had been previously prepared within the framework of implementing the conventions were reviewed.

In anticipation of Estonia's accession to the European Union on May 1 2004, several important pieces of legislation were adopted during the project cycle. Pursuant to the NCSA Steering Committee decision of 5 November 2003, new additions were to be made to the database of legislation up until 1 February 2004. The working groups also modified their work to take into account the more recent legislation. (See the list of documents that served as a basis for the thematic profiles in Annex 6).

A second database was prepared on stakeholders who are connected by their activities associated with implementing the conventions in Estonia. (See the list of stakeholders in Annex 7).

The working groups then prepared the thematic profiles for the conventions on the basis of the background information they had collected. Each working group was independent in its work, but followed an agreed methodology in preparing the thematic profile for their relevant convention. **The thematic profiles are included in this document at Annex 1. A summary of the thematic profiles is presented in Chapter 2.**

The thematic profiles present an overview of the implementation of the conventions to date with regard to the following:

- Legislation pertaining to the convention
- Legal instruments and their efficiency
- National programmes and projects
- Implementation of convention related issues through national programmes
- Monitoring implementation of the adopted programmes and action plans
- Databases pertaining to the convention
- Funding for carrying out the commitments undertaken under the convention
- Stakeholders of the convention
- Public awareness
- Outlook for implementing the convention in Estonia

After preparing the thematic profiles the working groups determined the priority issues which, when addressed, would result in a more successful performance of the commitments for each convention in Estonia. In order to identify priority issues within each Thematic Profile, the tools used included a prioritization matrix, the “problem tree” and “root cause analysis”. In the process of prioritizing issues the following criteria were taken into account:

- Contributes to the implementation of international commitments
- Creates a basis for subsequent environmental actions
- Has a balancing impact on the environment
- Has a long-term impact on the environment
- Creates preconditions for developments in other sectors (policies)

A summary of the priority issues to implementing the conventions is also included in chapter 2.

Having determined the priority issues, the reasons behind such issues were also analysed in order to try to establish why these priority issues are hindering the successful implementation of the conventions in Estonia. **Chapter 3 contains a summary of the capacity constraints standing in the way of implementing the conventions.**

During the project process different scales (for example 1-10 and 1-3) were used. The scale of 1-3 to prioritise the issues and capacity constraints was selected by common agreement after work meetings and consultations between all the project participants. Agreement on the priority scale was reached by adopting a voting process.

Involving the general public in the NCSA project played an important role during the whole life of the project. The public was involved through two way communication process, using questionnaires and forums. For the purposes of the questionnaires the stakeholders were divided into four categories as follows: the public sector, the private sector, research and training institutions and the NGOs. Please refer to the questionnaires sent to the stakeholders in Annex 8. The responses were taken into account for the purpose of preparing the thematic profiles and for determining the priority issues and constraints. A website was created in order to better inform the general public of the NCSA project process, so that everyone can be aware of the progress achieved and study the project documents (http://www.eco.edu.ee/?_eng.rakendus).

1.4.3 The First Forum

The first NCSA forum was held on October 23rd 2003 in order to create awareness of the NCSA project and to seek involvement of stakeholders. Everyone included in the database of stakeholders, including members of the SC and the convention focal points, received an invitation. (see the list of forum participants within Annex 5).

The thematic profiles of the conventions, together with the priority issues and capacity constraints to the implementation of the conventions, were presented at the forum. In order to enliven the discussion experts who had not been involved in the project until then were invited to present their opinion of the work that had been carried out by the working groups. (See the list of such additional experts within Annex 5).

Based on the proposals of the Project Management Team, the first forum approved the work accomplished by that time, made some adjustments and also approved a further action plan. The criteria were discussed and agreed to by the participants by a voting process. On October 25th 2003 a student forum was held in order to better involve the general public and create awareness of the contents of the project. The agenda of the student forum coincided with that of the first forum. (See the list of student forum participants within Annex 5).

1.4.4 Refinement of thematic profiles

The working groups used the feedback from the forums to refine the thematic profiles of the conventions, as well as the reviews of the priority issues and the capacity constraints. Refined thematic profiles with lists of priority issues and capacity constraints to convention implementation were approved by the SC meeting on November 5. 2003.

At this stage constraints which were common to at least two conventions were determined, and the significance of the constraints to successful implementation of the conventions were subjected to a comparative assessment. In addition proposals were made to overcome the constraints by both legislative and executive means. The capacity constraints were grouped into individual, institutional and systematic categories.

1.4.5 Opportunities for global environmental management in Estonia based on the Rio conventions

The opportunities for enhancing environmental management in Estonia by adopting the concepts and obligations/requirements of the Rio Conventions played an important role in the NCSA process. The section on 'Opportunities for environmental management in Estonia based on the Rio conventions' includes details on the synergistic needs and necessary actions.

Based on the proposals received from the working groups, the experts held a joint meeting where they developed a list of synergistic issues that were common to two or more of the conventions. Synergistic issues were developed on bases of priority issues and capacity constraints identified on previous phases. By common agreement the synergistic issues were divided into the following subject areas:

- 1) General issues
- 2) Industry, energy and transport
- 3) Land use
- 4) Education and media

Once the experts had come to an agreement about the synergistic issues, working groups were established and assigned the tasks of developing the necessary actions for eliminating the shortcomings in Estonian environmental policies. The resulting list of opportunities for environmental management in Estonia, based on the Rio conventions, was introduced to the regular quarterly meeting of the NCSA SC held on February 2. 2004. The members of the committee offered additional proposals concerning the synergistic issues and necessary actions. The working groups then built the feedback into the NCSA project document.

1.4.6 The second forum

The second NCSA forum was held on 19 February 2004. Two weeks before the forum, experts who had not been involved in the project until then received proposals concerning the 'opportunities for environmental management in Estonia based on the Rio conventions' and were invited to offer their opinion thereon. The tables of opportunities of environmental management in Estonia based on the Rio conventions were displayed on the project website so that the general public could also study and give feedback on them. A circle of stakeholders, similar to those invited to the first forum and including members of SC and convention focal points, received invitations to the second forum.

The aim of the second forum was to assess the opportunities for environmental management in Estonia based on the Rio conventions. Representatives of the respective fields presented the

synergistic issues in short interventions and provided arguments as to their importance. The necessary actions that had been developed were introduced as well. The invited experts and participants came up with a number of proposals. The feedback was integrated into the NCSA project document. **The opportunities for environmental management in Estonia based on the Rio conventions are summarised in chapter 4.**

1.4.7 Drafting the National Capacity Self-Assessment Document and further steps

The Project Management Team was responsible for finalizing this NCSA Document and submitting the document to the Steering Committee on May 20, 2004. After reviewing the document the Steering Committee has to submit the document to the MoE, seeking the Government's approval to put into action all plans to improve capacity for environmental management in Estonia. **A summary of the proposed actions are given in Chapter 5.**

The NCSA process should not end with the drawing up of the action plan. The project must be followed by implementation of the actions detailed in the document and monitoring thereof. These activities are facilitated by the fact that the project mapped in great detail the stakeholders who are able and willing to continue their efforts towards sustainable environmental management.

One important aspect that emerged as a result of the project was an institutional cooperation network between top specialists in universities as well as other institutions. The recommendation is to maintain the existing structure of the NCSA process so as to periodically repeat the reviews of implementing the Rio environmental conventions. The documents prepared within the framework of the project shall be handed over to the MoE and the final version of the project results shall be made available on the project website in the Internet (<http://www.envir.ee/>).

2. THEMATIC PROFILES AND PRIORITY ISSUES

The Thematic Profiles provide an understanding of the baseline situation for each of the three Rio Conventions. To prepare the thematic profiles, legislative instruments of different levels as well as other national documents were combined into databases. Various other reports and action plans that had been previously prepared within the framework of implementing the conventions were also reviewed. In anticipation of Estonia's accession to the European Union on May 1st 2004, several important pieces of legislation were adopted during the project cycle. Pursuant to the NCSA Steering Committee's decision of November 5th 2003, new additions were made to the databases of legislation until February 1st 2004. The working groups also modified their work to take into account the more recent legislation. The list of documents that served as a basis for the thematic profiles is given in Annex 6. A second list was prepared on stakeholders who are connected by their activities with implementing the conventions in Estonia. The list of stakeholders is at Annex 7. The working groups started to prepare the thematic profiles for the conventions on the basis of the background information they had collected. Each working group was independent in its work, but followed an agreed methodology in preparing the thematic profile of the relevant convention. The thematic profiles are included at Annex 1.

The thematic profiles present an overview of the implementation of the conventions to date with regard to the following:

- Legal instruments and their efficiency
- National programmes and projects
- Implementation of convention related issues through national programmes
- Monitoring implementation of the adopted programmes and action plans
- Databases pertaining to the convention
- Funding for carrying out the commitments undertaken under the convention
- Stakeholders of the convention
- Public awareness
- Outlook for implementing the convention in Estonia

While developing the thematic profiles for the conventions the working groups determined the priority issues of the Estonian environmental policy to date which serve as major constraints to the implementation of these conventions. Integration of the principles of the conventions into the national legislation, development plans and programmes plays a key role in implementing the conventions. Ascertaining conflicts between the provisions of national documents and those of the conventions was also an important part in the process. The state of play as regards fulfilment of the commitments undertaken by the state when ratifying the conventions and any shortcomings in this respect were also reviewed.

In the process of prioritizing issues the following criteria were taken into account:

- Contributes to the implementation of international commitments
- Creates a basis for subsequent environmental actions
- Has a balancing impact on the environment
- Has a long-term impact on the environment
- Creates preconditions for developments in other sectors (policies)

In order to better establish the nature of the priority issues, and to quantify them so as to be able to compare and prioritise the different issues, the scale of the problem and the level of concern were developed. The *scale of the problem* is a measurement of the relative importance of the priority issue. The *level of concern* is a measurement of the level of importance in relation to convention implementation. The rating scales were:

Scale of problem – the extent of the relevant priority issue was measured on the global, national, local scale. A global issue is important for the global environment, i.e. has transboundary environmental impact. National issues are those deriving either from the national policies or having a nation-wide impact on the environment. Local issues relate to Estonian regional problems.

Level of concern – here we assessed the impact of the priority issue on the implementation of the conventions in Estonia as being high, medium and low. Priority issues that are directly in conflict with the principles of the conventions, or are related to activities working fully against the provisions of the conventions, are of high concern. Priority issues that serve as constraints to implementing the provisions of the conventions are of medium concern. However, these may derive from the “lenience” of the conventions towards some social and economic issues. Priority issues that have to be taken into account in nature and environmental protection but have little impact on the implementation of the conventions are of low concern.

To determine the priority ranking, priority was assessed on the scale of 1-3. Priority ranking is derived from a synthesis of the above two scales, where number 3 means the most severe problem and number 1 the least severe problem.

2.1. United Nations Convention on Biological Diversity

Profile Summary

Name of convention: United Nations Convention on Biological Diversity (UNCBD)
Bioloogilise mitmekesisuse konventsioon

Adopted: June 12. 1992
Entry into force: December 30. 1992
Ratified by Estonia: May 11. 1994

Organisation responsible for implementation in Estonia: MoE,
National focal point: Liina Eek-Piirsoo, Department of Nature Conservation, Estonian MoE

Translation into Estonian and Ratification Act:
<http://riigiteataja.ee/ert/act.jsp?id=24654>

Main convention objectives:

The main objective of the Convention on Biological Diversity is conservation of biological diversity at its various levels (genetic, taxonomic and ecological), both occurring naturally and in domesticated or cultivated form, through protection and sustainable use. The convention also pertains to all processes and activities in the society that may, even if indirectly, influence biological diversity. Thus the convention has an impact on many different facets of the society and this is reflected in the obligations of different agencies. In addition the convention establishes international obligations pertaining to the fair and equitable sharing of costs and benefits between the parties.

Commitments undertaken under the convention:

The obligations arising from this convention include conservation planning, management of the environment and its resources, and the related economic relations. However, the obligations formulated in the convention are aimed at actions on the national level and are worded in such general terms that they are applicable in the case of widely different social, economic and ecological conditions. The convention does not define the objectives of the activities to be undertaken by the states in precise terms. Each member to the convention has to determine itself the national goals of its implementation.

Outlook for implementation of convention:

The Estonian National Biodiversity Strategy and Action Plan, covering the years 1999–2005, determines the outlook for implementing the Convention on Biological Diversity in Estonia. The strategy and action plan are to be revised and renewed every five years. The process of evaluation will take into account the biological diversity monitoring data acquired in the meantime, but also the experience and recommendations of the UNCED follow-up process, any new developments, e.g. in the EU environmental policy etc.

There are no major problems in fulfilling the general objectives of the convention in Estonia, however, creating and launching the more specific institutional and procedural infrastructures could cause difficulties. Following the requirements of the Cartagena Protocol on Biosafety could probably be fairly complicated.

Estonia has successfully launched the national planning process for the conservation and sustainable use of biological diversity by preparing a national review, strategy and action plan: Kull T. (Compiler and editor) Estonian National Biodiversity Strategy and Action Plan – Tallinn – Tartu, 1999 – 184 p. (<http://www.envir.ee/euro/konventsioonid/Biol%20mitmekes%20strate%20ja%20tegevuskava%20est.pdf>). Unfortunately the Estonian Government has not discussed this document, although it is its obligation under the Sustainable Development Act. Many of the activities defined in the action plan are actually being carried out and more emphasis should be put to monitoring and launching a new planning cycle (the existing action plan covers the period until 2005).

Additional materials:

Estonian Environment Information Centre:

<http://www.envir.ee/itk/>

Priority issues for implementing the Convention on Biological Diversity

The general priority issues to the successful implementation of the Convention on Biological Diversity are the following:

- Estonia lacks a competent and permanent system and financial resources for maintaining and administering information and managing the integration of the convention into sectoral policies.
- Insufficient account is taken of biological and landscape diversity in preparing land readjustment plans and other plans.
- Insufficient support is given to small enterprises, especially in rural areas.
- The state provides insufficient protection to Estonian genetic resources (indigenous animal and plant species).
- The knowledge of nature is given insufficient attention in study programmes of all school levels.

A more detailed overview of existing priority issues for implementation of the Convention on Biological diversity is given in Annex 2 where the issues are divided into following sectors: general, education, agriculture and planning, forestry, fisheries and water, energy industry and transport, genetic resources.

2.2. United Nations Framework Convention on Climate Change

Profile Summary

Name of convention: United Nations Framework Convention On Climate Change (UNFCCC)

Ühinenud Rahvaste Organisatsiooni kliimamuutuste raamkonventsioon

Adopted: May 9. 1992

Entry into force: March 21. 1994

Ratified by Estonia: May 11. 1994

Number of member states: 193

Organisation responsible for implementation in Estonia: MoE

National focal point: Andres Kratovits, Director General Department of International Cooperation, Estonian MoE

Translation into Estonian and Ratification Act:

<http://www.riigiteataja.ee/ert/act.jsp?id=24655>

Main convention objectives:

The objective of the Convention on Climate Change is first and foremost to stabilise anthropogenic greenhouse gas (GHG) concentrations in the atmosphere. Although the greenhouse effect itself is not anthropogenic, but a phenomenon characteristic of the Earth's geological and geochemical development, man is able to increase the greenhouse effect by influencing the composition of the atmosphere. This is mainly accomplished by affecting the natural circulation of greenhouse gases. The greenhouse effect is probably not the only cause of the warming trends observed during the past few decades, but it obviously is a part of a more complex system influencing the climate. Pursuant to the Convention on Climate Change control over GHG concentrations should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Commitments undertaken under the convention:

States acceding to the Convention on Climate Change have to undertake several commitments, e.g. carry out and disclose periodic national inventories of anthropogenic emissions and removals by sinks of greenhouse gases; launch national programmes containing measures to mitigate climate change, by addressing anthropogenic emissions and removals by sinks of greenhouse gases; promote educational and public awareness programmes. Promoting co-operation both on national and international levels is crucial. By doing so the state has to take into account its possibilities and consider the effects of climate change in its social, economic and environmental policies. Estonia carries out an annual inventory of greenhouse gases and at the beginning of 2002 Estonia submitted its third climate report to the Secretariat of the United Nations Framework Convention On Climate Change.

Implementation of the convention to date:

The Kyoto Protocol to the United Nations Framework Convention on Climate Change was adopted in Kyoto on 11 December 1997 (COP 3), signed by the Republic of Estonia on 3 December 1998 and ratified by the Estonian Parliament on 3 September 2002 (SG II, 13.09.2002, 26, 111). Under the Kyoto Protocol the Parties included in Annex I to the Convention undertake to reduce emissions of six greenhouse gases (CO₂, N₂O, CH₄, HFC, PFC and SF₆) by a specific percentage. During 2008–2012 Estonia has to reduce the GHG emissions by 8% in comparison with the 1990 levels.

To achieve the Kyoto targets Estonia has drafted the National Programme of Reduction of Greenhouse Gas Emissions for 2003-2012, whose main objective is meeting the international obligations arising from the Convention on Climate Change and the Kyoto Protocol and reducing GHG emissions. The MoE is the agency responsible in Estonia for the implementation of the Programme of Reduction of GHG Emissions. Other bodies dealing with the various issues pertaining to the climate include the IoE at TPU, the Institute of Geography (IoG) of the University of Tartu (UT), Estonian Maritime Institute (EMI) of the UT, the Power Engineering Institute and Faculty of Power Engineering of Tallinn University of Technology (TUT), Estonian Agricultural University (EAU) and Stockholm Environment Institute, Tallinn (SEIT). Scientists are carrying out GHG inventories on a regular basis, and have developed scenarios on how the different climate changes could affect our life in the future. The knowledge derived from this work serves as a basis for plans to help mitigate the negative impacts of climate change. The relevant legislation has been and is being drafted as well.

Outlook for implementation of convention:

There are no difficulties in implementing the general objective of the Convention. Problems may emerge upon creating and launching the institutional framework. However, there are doubts as regards the sustainability of the convention since to a large extent the fulfilment of the convention objectives has resulted from processes accompanying Estonia's re-independence. Even if Estonia has no current problems with meeting the conditions of the Kyoto Protocol, economic development could lead to problems in the next phase.

To date the state budgetary allocations for implementing the convention have been fairly modest. Additional funding should be sought for better implementation of the convention and for carrying out the development plans whose objectives are in compliance with those of the convention.

It is important to understand that the funds for financing national goals are limited, therefore these goals have to have clear priorities. We need to concentrate on these priorities and not “do something of everything”. In other words, we need to draw two pyramids, one for a hierarchy of national needs/goals and the other for national funds/resources along the same principles. A comparison of these two helps us determine where the activities are for which funds exist and then contribute to implementing these activities.

Additional materials:

Translation of the Kyoto Protocol into Estonian and Ratification Act:

<https://www.riigiteataja.ee/ert/act.jsp?id=199096>

MoE, ambient air protection:

<http://www.envir.ee/valisohukaitse/kliima.html>

Estonian Environment Information Centre:

<http://www.envir.ee/itk/>

Institute of Ecology of Tallinn Pedagogical University

<http://www.eco.edu.ee/>

Estonian Institute for Sustainable Development

<http://www.seit.ee/index.php3>

Priority issues for implementing the Convention on Climate Change

The priority issues to the successful implementation of the Convention on Climate Change are the following.

- Estonia lacks a competent and permanent system and financial resources for performing the obligations arising from the Convention; cooperation between ministries and state agencies is poor.
- Some of the requirements of the convention conflict with the national economic and social development goals.
- Low level of applied research in the area of national energy, industry and transport technology and planning.
- Administrative capacity in organising the energy sector (including renewable energy) and the transport system is not effective.
- The inability and often the inadequacy of the educational system and the media in explaining the nature of climate change and the possibilities of mitigating its impact.

A more detailed overview of existing priority issues for implementation of the Convention on Climate Change is given in Annex 2 where the issues are divided into following sectors: general; energy, industry and transport; agriculture; waste management; forestry.

2.3. United Nations Convention to Combat Desertification

Profile Summary

Name of convention: United Nations Convention to Combat Desertification (UNCCD)

Ühinenud Rahvaste Organisatsiooni kõrbestumistõrje konventsioon

Adopted: June 17. 1994

Entry into force: December 26. 1996

Ratified by Estonia: Not ratified

Number of member states: 190

Organisation responsible for implementation in Estonia: --

Translation into Estonian and Ratification Act: --

Main convention objectives:

The Convention to Combat Desertification primarily addresses the problems of the arid tropical climatic zone, and especially Africa. In its capacity as an environmental policy document the convention treats desertification as a global issue, but the scientific approach is narrower, dealing with insufficient water resources of arid areas. In general the convention takes a narrow approach to desertification, i.e. proceeding from insufficient freshwater resources. In the broader sense, desertification is not limited to the expansion and advancing of deserts, but also includes worsening environments for plants, animals and people resulting from excessive use of water, grazing and inadequate land use. Thus the convention indirectly covers loss of fertility and degradation of every kind of soil cover. The initial version of the convention took a regional approach to desertification (tropical and subtropical desert areas). However, the range of water and soil related and social problems arising from desertification is considerably broader. Thus, in order to bring the temperate zone, which is not suffering from the lack of water, into the scope of the convention, and resolve the additional problems, a new annex V, named Regional Implementation Annex for Central and Eastern Europe, was added to the convention during the fourth Conference of the Parties held on 11–12 December 2000 in Bonn, Germany. Estonia is now also covered by this annex. This implementation annex deals primarily with inadequate use and deterioration of soil caused by socio-economic changes, pollution, as well as physical degradation.

Pursuant to Annex V the regional tasks in Central and Eastern Europe are the following:

- problems related to the process of economic transition (production, privatisation, legislation etc);
- desertification (serious loss of soil fertility) due to soil erosion caused by water and wind;
- crisis conditions in agriculture (crop husbandry) and failure to follow sustainable practices in soil and water use;
- chemical degradation and salinisation of soil caused by irrigation;
- forest coverage losses and deterioration of forest soil due to climatic factors, air pollution and wildfires;
- unsustainable practices in using natural resources and inadequate land use practices, leading to physical, biological, political, social and economic problems;
- social and economic hardships in affected areas;
- the need to review and modify policy and legislative framework for the sustainable management of natural resources;
- the need to improve regional and international co-operation to successfully implement the principles of sustainable development.

The importance of implementing the convention:

According to §1 g of the convention the scope of application of the convention includes areas in which the ratio of annual precipitation to potential evapotranspiration falls within the range from 0.05 to 0.65, except polar and sub-polar regions.

Estonia's mainland is mainly flat with only small differences in heights. Estonia has a humid maritime climate and since more than half of the mainland lies at heights less than 50 m from sea level, Estonia's soil cover is dominated by excessively moist soils (59.2%) (Histosols 23.2%, Gleysols 34.0% and Fluvisols 2.1%). Thus in general the problems with Estonian soils are rather related to drainage and reducing swamping than fighting excess aridity. However, one cannot completely rule out the possibilities of drought related problems, given Estonia's pedoclimatic conditions. Almost 5% of the soil cover is made up of drought susceptible soils. The drought susceptible sandy and stony soils are mostly located in North Estonia and in the islands, which are areas with thinner soil cover and less precipitation. Predominantly natural grasslands, coastal meadows and alvar forests can be found on soils susceptible to drought. Still close to 5% of areas under cultivation have drought susceptible soils, and in every second or third year the weather does not yield sufficient precipitation and crops cannot meet their need for water and may fail, if the drought persists. The situation during the 2002 period of drought turned out to be so grave that the government had to compensate the losses from grasslands and grain crops sustained by agricultural producers due to drought.

Climate change has resulted in warmer winters with less snow, and therefore the soil dries sooner in spring and the irregular summer rainfall is not sufficient to keep up adequate water levels in the soil which are needed by the plants. Therefore climate change increases the probability of drought and the issue of desertification becomes ever more topical in Estonia as well because of failing crops due to drought. On the global plane one also has to consider the possibility that the areas of agricultural production are shifted further to the north due to warming and Estonia's role as agricultural producer and exporter may grow as a result. In the long term silviculture and especially growing the demanding spruce also need more attention, since the melting of the permafrost means further swamping of the boreal forest soils and a shrinking of the distribution area of coniferous forests.

During the writing of proposal of NCSA-Estonia it was planned to establish WG-s only for UNCBD and UNFCCC, as Estonia is still not ratified the UNCCD. At the first SC meeting in June 9. 2003 it was decided to also establish a WG for UNCCD and to treat this thematic area as if Estonia had already ratified the convention. The MoE will use results of this project as suggestions for ratifying the UNCCD.

Priority issues of implementing Convention to Combat Desertification

Estonia has not ratified the Convention to Combat Desertification yet. The main priority issues below certify the need for the ratification thereof:

- A general reduction in the soil fertility of areas under cultivation resulting from past intensive farming and from the current deterioration of social and economic circumstances in rural areas.
- Physical degradation of soil resulting from the spread of man-made environments, mining areas and constructions in suburban areas, on coastlines and near highways, as well as from reckless logging.
- Underestimating and failure to value soil as a natural resource in legislation and in practice.
- Changing of landscape-related values and the structure of land use.
- Issues related to water economy are dealt with by different ministries and coordination between them is poor.

More detail overview of existing priority issues to implementation of the Convention on Climate Change is given in Annex 2 where the issues are divided into following sectors: general; agriculture and land use; industry, energy and transport; forestry.

3. SUMMARY OF CAPACITY CONSTRAINTS FOR THE IMPLEMENTATION OF THE RIO ENVIRONMENTAL CONVENTIONS IN ESTONIA

Following the identification of the priority issues for implementing the conventions described in Chapter 2, the working groups also analysed the capacity constraints which are causing such problems. For identifying and grouping the capacity constraints the following categories were used:

- Systemic capacity constraints – factors centred on the general policy framework in which individuals and organisations operate and interact with each other along both formal and informal lines.
- Institutional capacity constraints – factors centred on the overall organisational performance and the ability of an organisation to adapt to change.
- Individual capacity constraints – factors centred on the process of change, attitudes, information, participation etc.

This chapter provides a summary analysis of existing capacity constraints to implementation of the Rio conventions at the three capacity building levels. More detailed analysis is given in Annex 3.

The analysis of systemic capacity constraints to implementation of the Rio Conventions in Estonia indicated that the legislative documents are in general environmentally supportive but that there are problems with implementing the legislation acts. There are also problems with funding the long term strategies and development plans. There is an understanding that the responsibility for the implementation of certain environmental conventions is the MoE. Probably the reason for this is the novelty of concepts of sustainable development, information networking etc, but in general it is due to an insufficient awareness of nature in education. To date the education related development plans deal only partly and declaratively with matters pertaining to the Rio conventions. Also the scientific research policies have not regarded biodiversity, climate change, circulation of GHG and issues of soils as a priority.

Poor living standards and high unemployment rate among the remote populations leads to over consumption of natural resources. Problems exist with poaching, over-fishing, illegal forest harvesting etc. But at the same time transitions in economies, and people's movement to cities, has led to abandoned areas where soils are going out of agricultural use because of natural reforestation and rising groundwater.

Analysis of the institutional capacity constraints to implementation of the Rio Conventions indicates that the responsibilities of institutions are not clearly defined. Institutions are not adequately aware of their role in the process of implementing the Rio conventions. The command line and information movement is strictly vertical; co-operation between the institutions is poor. To date the ministries have developed their institutions without collaboration of other ministries so that the infrastructure is overlapping in some cases. The infrastructure is also inflexible and incompatible. There is a general lack of sufficient human, financial and information related resources.

Analysis of capacity constraints at the individual level for implementation of the Rio conventions indicates that there are problems with qualification of employees. There is insufficient general awareness of nature and of the issues of the conventions. There is a lack of people with necessary skills as employees with more initiative have left for the more rewarding private sector: In the public sector there are major concerns about employees' attitudes, values and motivations.

4. OPPORTUNITIES FOR ENVIRONMENTAL MANAGEMENT IN ESTONIA BASED ON THE RIO CONVENTIONS

Taking into consideration the progress and shortcomings in meeting the requirements of the Rio conventions, and the new problems and opportunities born as a result of their synergy, it is possible to give only a general preliminary estimate of Estonia's capacity to develop further the fulfilment of the Rio conventions. Given the common objectives of the conventions in environmental protection it is important, on the one hand, to view the Rio environmental conventions as being uniform, but on the other hand, each of them has their own specific goals as well. It is also important to remember that the conventions enshrine objectives and principles that may be in conflict with those of other conventions.

As just a short period of time has elapsed since Estonia regained its independence, the nation has undoubtedly made great progress in developing its legislation, building up its government institutions and proceeding towards harmonisation with the European Union. Estonian legislation was amended in the process of integration with the European Union, and today Estonian legislation, including legislation on environmental management, is in every respect mostly comparable to the legislations of other EU member states. However this period of time has been too short to develop good customs and to understand and implement this legislation.

It is also important to recognise that the human potential of Estonia is too small to fulfil all the executive and control functions envisaged by the legislation and resulting from the EU integration. For these reasons Estonia's insufficient administrative capacity can be felt in certain areas, including in implementing Rio conventions. Although Estonia has joined the Convention of Biodiversity and Climate, and fulfils generally its obligations resulting from conventions, there are clear shortcomings in creative implementation of the ideas of the conventions with consideration of local peculiarities and in interlinking the conventions.

Interlinking Conventions – Common Needs

Considering the limited capacity of the Estonian human potential, the main way will be involvement of larger numbers of interested persons, primarily scientists and students but also environmental activists, into the implementation of single conventions. To improve the level of necessary knowledge it is necessary to pay attention to the level of specialists connected with conventions as well as of society as a whole, especially of schoolchildren. Various courses of different level and training programmes should be arranged to achieve this.

Systemic Level:

To increase the common elements of the implementation of conventions, and the synergies between them, it is necessary to develop and implement a common round table with representatives of scientists, specialists, environmentalists, politicians and employees of the central and local governments involved. As problems ensuing from Rio conventions are of direct interest for various ministries it would be advisable to form such a coordinating body either directly at Prime Minister's cabinet or at the Estonian Research and Development Council. The integrating leading organ should also be directly responsible for the use of finances allocated for the implementation of conventions. It is advisable that the institutions financing Estonian research (Estonian Ministry of Science and Education, Estonian Science Foundation, Estonian Innovation Foundation) regarded the projects of joint implementation of Rio conventions as priorities.

NGOs and occupational associations should be involved in the decision-making processes of all levels. The Land Board, Statistical Office, EEIC and other competent national bodies should work together in order to launch a real-time database of the state of natural resources, which also involves data collected by scientific research institutions

Institutional Level:

It would be rational to establish a working group at the Ministry of the Environment to carry out a complete inventory of the investigations made in Estonia with support from various foundations, programmes, grants etc. concerning the three Rio conventions. Also, the list of potential investigators should be inventoried. In addition, university curricula should be reviewed to estimate how these reflect the conventions. Then, based on the results of the inventories we can start to develop a concrete implementation plan. This work should be done under the guidance of the Round Table Council.

Upon adoption of long-term programmes which are developed at the state level, the necessary budgetary funds should be earmarked for their funding and a long-term state guarantee should be issued for their funding. The ministries should order more applied research in areas related to the conventions and integrate the results thereof into national databases.

The legislation regulating environmental impacts should be improved and amended as regards mandatory requirements, and the share of taking into account long-term impacts should be increased therein. Specific accounting-based parameters should be established for assessing environmental impacts.

Individual Level:

- The methodology on environmental impact assessments, included the definitions of the responsibilities of experts should be specified.
- The national councils of the conventions should identify the parameters necessary for implementing the conventions.
- State support for carrying out longer-term and systemic environmental education programmes should be increased. The share of learning to know the nature should be increased on all levels of education, the network of nature houses should be restored and organisation of study camps and trips by schools should be supported.
- The life sciences curricula in basic schools should be brought closer to life and be integrated with other subjects
- Environmental science should be introduced as part of the general higher education.

Individual Conventions – Specific Needs

UNCBD – Targeted Actions

In this area the most topical problem today is landscape planning. The formation of the Natura network is presently underway; this requires a careful inventory and is one of the main tasks of the convention. Also, genetically modified alien species is topical. Principles of determining and applying the intended purpose of arable lands that have fallen out of use, and are to be left so, should be developed in the area of responsibility of the MoA.

UNFCCC – Targeted Actions

The use of the main energy resource of Estonia – oil shale – generates ca 80% of our greenhouse gases. A thorough life cycle analysis of the use of oil shale and a wide discussion of alternatives are needed. Presently it is clear that the application of hydro power under conditions prevailing in Estonia would have a detrimental impact on biodiversity. Likewise it is not possible to use energy sources based on solar energy. Wind generators are being rapidly implemented, however, these cannot meet our energy requirements and therefore, it is necessary to find new solutions. Estonia has worked out a programme for reducing greenhouse gas emissions which has been approved by the Government. Problems are wider cooperation with the conventions of biodiversity and soil protection and greenhouse gas sink in land use.

UNCCD – Targeted Actions

The first task is to take steps to join the convention. In principle, Estonia has decided to join the convention, presently it is necessary to support and assist. In Estonia different ministries coordinate problems regarding soils and their cooperation is weak. It is necessary to form at once the Estonian Soil Council that would involve representatives of different fields.

5. ELEMENTS OF A STRATEGY FOR CAPACITY BUILDING TO PROTECT THE GLOBAL ENVIRONMENT

Major actions for further capacity building are given in the table below:

Action	CB Level (Sys, Ins, Ind)	Lead agency, partners	Timeframe
1. Synergetic Actions	Establishing efficient national secretaries for all conventions	MoA, MoE , MoEAC, MoER	2005
	Establishing roundtable committee for joint implementation of conventions in Estonia	Prime minister	2006
	Development of the monitoring plan included the monitoring indicators the research objects necessary for implementing the conventions and their funding.	National Secretaries of the conventions	2005–2006
	Adaptation of environment related curricula as part of general education in all education levels	MoER , MoE, National Secretaries of the conventions	2006
	Conduction of applied research and financial analyses to assess the effectiveness of the various methods of developing man-made landscapes	MoE , National Secretaries of the conventions	2004–
2. UNCBD	Development of efficient and transparent control mechanisms for use of GMOs	MoE , National Secretary of CBD	2005
	Development of complex measures to support traditional management of livelihood	MoE , MoA, MoER, MoC, National Secretary of CBD	2005
3. UNFCCC	Preparation of the new national renewable energy development concept	MoE , MoEAC, National Secretary of FCCC	2004–2006
	Compiling of long-term National Development Plan for the Fuel and Energy Sector up to the year 2015	MoEAC , MoE, National Secretary of FCCC	2004–2005
	Preparation of new Transportation Development Plan	MoEAC , MoF, MoE, National Secretary of FCCC	2005–
4. UNCCD	Ratification of UNCCD	MoE, Parliament of Estonia	2005
	Adoption of the Soil and Landscape Act	MoE , National Secretary of CCD	2006
	Preparation of supplementary chapter of soil related issues in the Environmental Register Act	MoE , National Secretary of CCD	2005
	Preparation of the real-time online GIS format database of the state natural resources collected by national programmes and within the framework of scientific research. Catalogue of metadata should be created of the existing data and databases.	MoER, MoE , MoA, National Secretary of CCD	2006–2008
	Preparation of efficient management of Estonian Rural Development Plan in concord with regional policy and plans.	MoA , MoIA, MoSA, National Secretary of CCD	2004–2006
	Development of environmental management plan for sustainable soil, land use and landscape protection according to national monitoring programs and Rural Development Plan.	MoE , MoA, National Secretary of CCD	2005–2007

6. PROPOSED NEXT STEPS AND FOLLOW-UP

This National Capacity Needs Self-Assessment for Global Environmental Management based on the Rio environmental conventions should not be seen as a one-off exercise. The assessment was conducted at the time that the relevant legislation changed rapidly in anticipation of Estonia's accession to the European Union. This document fails to analyse the impact of the national documents adopted during the last pre-accession months on the implementation of the conventions. Therefore a similar exercise should be repeated periodically. This assessment was guided mostly on academic/-research institutions in collaboration with stakeholders. During the monitoring and evaluation it is suggested to use similar project structure to evaluate the implementation of the actions suggested in chapters 4 and 5.

Lessons learned

Additionally, as this project proceeds, the following lessons learned were compiled:

- It is important to create a clear vision on the project process from the beginning
- The Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management, UNITAR 2000 is best tool to the start.
- 'Real-time' project implementation needs longer time frame (about two years)
- Important to know clearly what one expects as the product at any given stage of the NCSA
- Networking and communicating between different participants and institutions have great effect in the project process
- Importance of the evaluating process itself.
- In anticipation of Estonia's accession to the European Union on May 2004, several important pieces of legislation were adopted during the project cycle.
- To maintain the existing structures so as to periodically repeat the reviews of implementing the Rio environmental conventions.

ANNEXES

ANNEX 1. Thematic profiles

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ANNEX 1A

Thematic Profile on the Convention on Biological Diversity for the National Capacity self Assessment (NCSA) project – Estonia

1. Legal instruments and their effectiveness

The process of implementing the Convention on Biological Diversity encompasses several parallel and closely connected environmental policy trends. Some are more general, others more specific and relate to individual areas of economy or life.

The Constitution of the Republic of Estonia (RT 1992, 26, 349) is fairly general and has no provisions about biological diversity. However, §5 states that „The natural wealth and resources of Estonia are national riches which shall be used economically “and §53 prescribes that „Everyone has a duty to preserve the human and natural environment and to compensate for damage caused to the environment by him or her“.

In general Estonian legislation pays insufficient attention to biological diversity. The national policies often are limited to just making environmentally friendly declarations. And even if framework legislation supporting the environment, incl. biological diversity, has been adopted, the implementing laws and other implementing acts have not always been put in place. As a rule environmental legislation is initiated by the GR, MoE and the MoEAC. The MoA and the MoER have also come forward with legislative initiatives pertaining to the principles of the convention.

The Protected Natural Objects Act (RT I 1998, 36, 555) (a revised version is being drafted); Protection and Use of Fauna Act (RT I 1998, 107, 1763) and the Sustainable Development Act (RT I 1995, 31, 384; RT I 1997, 48, 772) are closely connected with the protection of biological diversity. §9 of the latter deals with the preservation of biological diversity, by stating that: „Preservation of biological diversity shall be guaranteed through a national programme and an action plan approved by the Government of the Republic“and prescribing the following as the main principles of preserving biological diversity:

- 1) in the case of natural species - preservation at the level of the lowest taxonomic unit possible, and of the largest number of species possible;
- 2) in the case of local breeds of cultivated plants and domestic animals - their registration and the upkeep of databases on the largest number of breeds possible;
- 3) preservation of different types of ecosystems and landscape as well as the establishment of a network of natural and semi-natural communities to counterbalance and compensate for the impact of human settlement and economic activity;
- 4) the specification of genetic material of social, economic or scientific importance“.

One has to admit that the strategy and action plan for the protection of biological diversity in Estonia do exist, but the Government has not approved the document yet.

Pursuant to § 2 of the Environmental Monitoring Act (RT I 1999, 10, 154) one of the functions of environmental monitoring is to assess and analyse the current state of biological diversity.

According to the Planning Act (RT I, 09.12.2002, 99, 579) the objectives of the national spatial plan include creating a basis for the green network, but it is obviously necessary to specify the actual obligations of the planning sector as well as the other sectors responsible for biological diversity (nature conservation, forestry, agriculture etc.) as regards co-operation. This could be achieved through the implementing acts.

According to Estonia's National Development Plan for 2003–2006 the situation concerning biological diversity is good in Estonia and the plan does not include any specific measures aimed at protecting and sustainable use of biological diversity.

The Coalition Agreement between the coalition partners of the current Estonian government for the years 2003–2007 presents fairly progressive views as regards protecting and sustainable use of biological diversity. One of the commitments of the coalition is the following: „We will ensure efficient management of nature conservation

- 4.1. To avoid conflicts between private and public interests, the state will finance and prepare by the end of 2004 thematic plans of rural municipalities which set out the scope of the shore and coast and the building restriction zone. Nature conservation is the main aim of these activities.
- 4.2. We will contribute advice to the comprehensive planning of the local governments in whose territories ecological reserves are located.
- 4.3. We will continue to pay nature conservation aid in heritage landscapes to preserve natural diversity.
- 4.4. We support the development of an integral ecological tourism network and ensure the state's continuous support for the right of public access.
- 4.5. To preserve the green area of Tallinn, we will establish a landscape conservation area in Nõmme and Mustamäe and take measures to preserve and restore the natural landscape of Estonian cities to an as great as possible extent, based on the best traditions of the Nordic countries.
- 4.6. We will develop an integral nature conservation code.”

The National Programme for the Adoption of the Acquis is of crucial political importance. The programme contains commitments concerning biological diversity. In order to comply with the European Union nature conservation requirements each Member State has to:

- Establish the network of the EU nature reserves NATURA 2000 in its territory;
- Ensure protection of species of Community importance;
- Prohibit certain ways of hunting;
- Introduce regulations for the export and import of endangered species.

The most important obligations derive from the directives on the conservation of natural habitats and of wild fauna and flora and the regulations related to them (92/43/EEC, 79/409/EEC, Regulation (EEC) No 3254/91, Regulation (EC) No 35/97), whose transposition and implementation is labour intensive and has required and continues to require sizable funds and the creation of new jobs. In 1999 - 2002 the Protected Natural Objects Act (RT I 1998, 36, 555) was amended, the plan of implementing Natura 2000 was adopted as a national programme and the building of structures and training necessary for implementing the Natura 2000 programme was undertaken. Estonia has participated in the EU LIFE III programme. In this framework some of the problems of introducing the Natura 2000 network were resolved as well.

In Estonia forest is the predominant ecosystem, therefore the Forest Act (RT I 1998, 113/114, 1872) characterises to a great extent the national biological diversity policies. One of the constraints in protecting and sustainable use of biological diversity deriving from the Forest Act is the inefficient administrative co-operation and division of tasks between the agencies engaged in nature conservation and forestry, but also within the forestry agency itself (e.g. who has to provide the funding and who has to organise any specific facet of the activities). An example of the shortcomings of the Forest Act is its failure to set out the specific mechanism of “the maintenance of natural objects (nature protection) “, which is defined as one of the forest uses in this Act.

The effectiveness of protection forests, which cover one almost fifth of the forested area in Estonian and are crucial for maintaining biological diversity, depends often on the specific landscape conditions and the nature of the influence that has to be prevented. Unfortunately the law fails to provide incentives for co-operation between the agencies (agriculture, planning and forestry) in this area of activity, which touches on all of them.

Neither does the law solve the issue of funding for offering and maintaining the nature as an object to be visited. A large part of tourism (in particular nature-related tourism) is operating as black economy and thus cannot be subjected to strategic management due to the scarcity of channels and

mechanisms of influencing such activities. No limits have been formulated for permissible loads for forest nature protection objects or nature areas in general. The same is true for the principles of levelling out the loads. To illustrate the point, the visiting infrastructure for nature reserves is only planned in the course of preparing the management plan, which, given the current practice, follows the protection rules with a delay of several years.

However, the main reasons for the disadvantageous effect and the resulting harmful trends concerning biological diversity derive from the lack of knowledge, goals and guidance as well as control over the quantitative and qualitative levels of forestry-related impact on biological diversity.

The agricultural agencies are another important non-environmental actor who has emphasised the protection and use of biological diversity in their various guidelines. A more widespread use of organic farming is especially important for maintaining biological diversity. Estonian farmers have used organic farming practices for about two decades already. Today this area is regulated by the Organic Farming Act (RT I 2004, 6, 31), which states that „Organic farming is the sustainable production of agricultural produce and the sustainable handling of agricultural produce and products which maintains basic equilibria and which is carried out in compliance with this Act, with other Acts regulating the production of agricultural produce and the handling of agricultural produce and products, and with legislation established on the basis thereof ”.

The secondary legislation provides a more specific explanation about the nature of organic farming in the regulation establishing the Requirements for receipt of agri-environmental support and the procedure for applying for support and processing applications (RTL 19.04.2003, 48, 697). The objective of this regulation is to increase the diversity in agricultural landscapes. However, questions arise, depending on which part of diversity we are speaking about. The range of those who can apply for the support is narrowed down significantly and as a result a large part of the land is ruled out. For example only a sole proprietor or a company owning land can apply for support for the maintenance of land under cultivation which is overgrown and is temporarily not used for agricultural purposes (and also for maintenance of state land under cultivation which is not overgrown but is temporarily not used for agricultural purposes). By doing so we have left those who have no land, those who do have land, but have not registered as sole proprietors, as well as NGOs without the possibility to participate in preserving scenic diversity and open landscapes.

The strategic decisions we make today determine our future as regards biological diversity. This also applies to release of genetically modified organisms, regulated by the Deliberate Release of Genetically Modified Organisms into the Environment Act (RTI, 27.04.2004, 30, 209). The law prescribes the conditions of using such organisms. The gene technology commission, established by the GR, plays a key role here. The current commission mostly consists of gene technology specialists and has no experts in agri-ecological systems.

The Water Act (RTI, 21.04.2004, 28, 190) and Shores and Banks Protection Act (RT I 1995, 31, 382) are important for protecting the biological diversity of the water. The objective of the Water Act is to guarantee the purity of inland and transboundary water bodies and groundwater, and ecological balance in water bodies regulates the use and protection of water; insofar as the protection of water is concerned, the provisions of the Water Act also apply to the exclusive economic zone. The Shores and Banks Protection Act establishes the shore and bank zones of water bodies, the organisation of the protection and use of their ecosystems, proceeding from the principles of sustainable and conservative development and preservation of natural diversity. The established building ban does not apply to objects constructed under a comprehensive plan or a detailed plan, and the provided list is too liberal. For example the building ban does not cover an extension to an existing construction works built on the basis of a comprehensive plan or a detailed plan; to a new building in the courtyard of an existing farm, provided that the new building is not necessary for the economic activities of the farm etc. Such provisions leave too much room for derogations in the protection of the coastal zone.

The EU Water Framework Directive (2000/60/EC) sets out modern European principles on the protection of water bodies. The directive imposes on all Member States the obligation to take care of the quality of water bodies, establishes new quality criteria, pursuant to which the ecological status of a water body is the main indicator to characterise its condition.

Among the list of objectives that the Water Framework Directive sets out to achieve the following comes first: "prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems".

Member States must take action that leads to a situation by 2015, where the water bodies have maintained/achieved a good status. In the case of surface water "the status is the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status". Good surface water status" means the status achieved by a surface water body when both its ecological status and its chemical status are at least "good". However, the term "ecological status" has not been clearly defined. The following system is used for surface water: the quality elements necessary for determining the ecological status have been established, as well as standards for classifying the ecological status of a water body on the basis of the quality elements. The ecological condition is mostly established by biological elements, which in their turn depend on hydromorphological elements and physico-chemical elements. Annex V of the directive contains guidelines for evaluating the relevant elements.

A state must prescribe a detailed system for evaluating the water bodies, which enables planning actions for achieving the goals and follow-up on performance. Various methods can be used for setting up the system, but the underlying principle always remains the same: first the status of a water body if there were no human impact should be established and all evaluation to quality should be based on comparison with such status. Most of the European ecological regions, including the Baltic region, have not achieved satisfactory results yet as regards classification of water bodies and establishing ecological quality requirements. This is understandable, given the major preparations that need to be carried out in order to be able to describe several quality elements (especially the biological elements) in compliance with the requirements of the directive.

Water Framework Directive also establishes the obligation and general principles for monitoring water bodies: "The monitoring network shall be designed so as to provide a coherent and comprehensive overview of ecological and chemical status within each river basin and shall permit classification of water bodies into five classes consistent with the normative definitions in section 1.2".

Clearly the construction of a barrage or dam on a river that hinders its flow causes the river to lose its natural status. If the barrages do not allow migration of fish to their spawning grounds and the fish fauna loses an important species as a result, then clearly the status of fish fauna can not good any more. Thus the directive is justified in imposing restrictions to the building of dams and barrages on rivers: "Protection of water status within river basins will provide economic benefits by contributing towards the protection of fish populations, including coastal fish populations".

The principle of "preventing further deterioration and protecting and enhancing the status of wetlands directly depending on the aquatic ecosystems, with regard to the water needs of Member States" is also unambiguously understandable. To this end "Member States shall ensure the establishment of a register or registers of all areas lying within each river basin district which have been designated as requiring special protection under specific Community legislation for the protection of their surface water and groundwater or for the conservation of habitats and species directly depending on water". The above-mentioned specific Community legislation includes first and foremost Council Directive on the conservation of wild birds (79/409/EEC) and Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC), on the basis of which the Natura 2000 network will be established.

The Research and Development Organisation Act (RT I 1997, 30, 471) regulates the funding of research. The conditions and procedure for targeted financing of research topics at research and development institutions shall be approved by a regulation of the Minister of Education and Research. The current procedure only enables funding for topics of five years in duration. Changes in biological diversity would also require more long-term research.

2. National programmes and projects

As the most important document in the environment sector, the National Environmental Strategy was approved by the Estonian Parliament on 12 March 1997. This environmental policy document provides general guidelines and objectives for environmental management and protection and establishes the most important short-term and long-term goals to be achieved by the year 2000 and 2010 respectively. The environmental strategy 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 in the region. The priorities presented in the strategy must be taken into account when planning environmental activities, developing international cooperation and allocating national funds.

The objective of the National Environmental Strategy is “to ensure preservation of viable populations of local plant and animal species, natural and semi-natural communities and landscapes typical of Estonia”. To this end several tasks must be achieved, for example, by 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.”

Based on the objectives and tasks of the National Environmental Strategy the Estonian National Environmental Action Plan was developed in 1997–1998. Phase II of the document for 2001–2003 was approved by the GR on 5 June 2001 and the MoE was appointed as the agency responsible for the implementation of the action plan. The action plan will be subject to regular revision and specification to ensure that the rapid socio-economic changes and the impact of accession to the EU are taken into account.

National Environmental Action Plan includes a chapter on preservation of landscape and biological diversity (Chapter 9), setting out 104 actions, which are divided into policy actions (34), administrative actions (24), educational actions (16), species conservation actions (15) and landscapes management and protection actions (14).

According to Estonia’s National Development Plan for 2003-2006 the situation concerning biological diversity is good in Estonia and the plan does not include any specific measures aimed at protecting and sustainable use of biological diversity.

The principal goal of the Estonian National Programme for Natura 2000 for years 2000–2007 is to create a Natura 2000 network in Estonia that meets the requirements of the EU birds directive and habitats directive. The objective of stage 1 is preparation of the Natura 2000 sites in Estonia (i.e. the lists proposed sites of Community Importance), the required database and maps of the sites and forwarding thereof to the European Commission. Stage 1 was carried out in 2000–2002. The main goal of Stage 2 is to organise protection of the Natura 2000 areas in accordance with the EU requirements. To this effect protected areas will be established, conditions of protection will be determined, management plans will be drafted, contracts will be concluded with landowners and other actions will be taken (incl. plans) in order to ensure a favourable protection status of the habitats and species found in the Natura 2000 areas.

Several documents of strategic significance for biological diversity are being drafted currently (in 2004) in the nature conservation sector. The Project of Organising Estonian Protected Areas Management⁴, prepared in 2004 serves as a basis for administrative reform of the protected areas and its outcome ought to considerably increase Estonia’s capacity in preserving biological diversity in protected areas. The process of developing another key document, the Nature Conservation Development Plan⁵ has begun already and is due to be completed in 2005.

The National Environmental Monitoring Programme is a comprehensive plan for observation of the state of the environment, containing elements of biological diversity, which has been in operation since

⁴ <http://www.ekal.org.ee/looduskaitsehaldus/>

⁵ <http://www.envir.ee/search.php?q=looduskaitse+arengukava&initial=yes&submit=Otsi>

1994. The outputs of the sub-programme of monitoring of biological diversity and landscapes include timely submission of reporting data in the required format, for fulfilling the obligations undertaken under international agreements, incl. the fulfilment of monitoring obligations under the Convention on Biodiversity. Another objective under the same sub-programme involves monitoring and forecasting the status of habitats of species and populations of species that have been classified as rare and/or endangered at the national level, incl. monitoring and forecasting the status of indicators of the indigenous biological diversity of Estonia. The bases of the forest monitoring sub-programme include: "ascertaining and analysing of the current status of forest as a renewable natural resource and the biodiversity associated with forests".

Sustainable Estonia 21: The strategy for Estonian sustainable development (SE21) is an alternative comprehensive national development plan covering the issues of economy, culture and the environment. The document was developed in 2003. The strategy does touch upon issues of nature but in more general terms. There are several deficiencies as regards biological diversity. The condition of and development trends in agriculture and rural life could have deserved more attention, since the development level of the rural areas plays a key role in determining the quality of life of the whole population. The description of the desired status does not contain a vision of the desired environmental status, the level of using natural resources and the status of the Estonian nature. The analysis of the status is based on current approaches and is too general. There is no in-depth analysis of the use of non-renewable natural resources (in particular biological resources). It is rather the management of natural resources and not protection thereof that the document describes. There are few goals aiming at the status of the environment and those few are fairly vague. The use of biological resources is seen as a threat, whereas in reality they should be deemed an opportunity. Here a detailed approach would be more desirable.

The process of implementing the convention in Estonia has resulted in chapters on the protection and sustainable use of biological diversity appearing in strategic documents of some other sectors as well. Among them the work of the forestry sector carries the most weight. Namely, a detailed biological policy document, Biodiversity Management Strategy for Commercial Forests in Estonia, has emerged from this economic sector.

Biological diversity is a key word of the Estonian Forest Policy. The following general goals of forest management are set out in this document:

„sustainable (uniform, continuous and versatile) forestry, defined as maintenance and use of forests and forest lands in a manner and at a rate that guarantees their biological diversity, productivity, regeneration, viability and potential today and enables future performance of local, national and global ecological, economic and social functions without harming other ecosystems;

effective management of forests, defined as economic production and use of all forest-related benefits both in the short term and long term “.

The document's chapter 5, Management of Forests and Protection of Ecosystems, defines the most important principles of forest management: „The underlying principle of forest management and environmental protection is the sustainable, continuous, uniform and versatile use of forest resources. In light of this the goals of forest management and protection of ecosystems include preservation of biological diversity, improvement of the sound status of forests and increasing the volume and value of timber, by-products and immaterial benefits“.

The Estonian Forest Policy establishes an obligation which is crucial for information that serves as a basis for making adequate management decisions (which has been insufficient in the field of biological diversity): „The necessary monitoring and information systems shall be established for observing and evaluating environmental changes“.

The Estonian Forestry Development Plan up to 2010 is a development document to provide more detailed rules and implement the forest policy. Protection and sustainable use of biological diversity has been given an important role in this document. The chapter on the protection of ecosystems sets out two inseparable aspects of the strategy of the protection of ecosystems in order to preserve biological diversity and protect natural treasures: ensuring the inviolable development of natural forests and introduction of measures to protect elements of biological diversity in other forests. To

implement each of the strategies aimed at protecting and sustainable use of biological diversity, measures taking into account ecological, economic and social interests are applied. There are altogether 13 such measures in the development plan.

Measure 7 of the Estonian RDP (European Union SAPARD 2000-2006), designing the funding policy of accession to the EU is fully dedicated to agri-environment, irrespective of the fact that the measure only takes up 1.4% of the total budget of the plan. The overall objective is to create a sound foundation for funding projects co-financed by the EU, which are aimed at protection and enhancement of the rural environment, development of a sustainable rural economy (incl. the training and education of farmers) and encouragement of alternative economic activities.

From the accession of Estonia to the EU until 2006 a lot will depend on the RDP for 2004–2006, whose main goal is to support the balanced development of the rural areas through measures accompanying the EU Common Agricultural Policy. The support for less-favoured areas and environmentally sensitive areas and agri-environmental support are directly related to biological diversity. The RDP is funded via the EAGGF (European Agricultural Guidance and Guarantee Fund). In the coming years ca 250 million EEK per year is to be channelled through the Rural Development Fund to support activities pertaining to biological diversity. 80% of the money is EU funds and Estonia has to co-finance 20%. Given the importance of the measure, the funds should be used as efficiently as possible. Users of land (either owners of land or contractual users of land), both legal persons (including non-profit associations) and natural persons should also be eligible to agri-environmental support. Currently even the NGOs engaged in maintaining semi-natural communities cannot apply for this type of support (because the Rural Development and Agricultural Market Regulation Act (RT I 2000, 82, 526) fails to provide for this. The RDP has also been subjected to Strategic Environmental Assessment⁶, which produced several proposals concerning a more detailed description of the protection of biological diversity in this document.

Chapter 7 of the Long-Term Sustainable Development Strategy for Agriculture is also devoted to the agri-environment. The chapter on the environment touches upon several issues of sustainable use of biological diversity, e.g. making the agricultural landscapes more biota-friendly and preserving indigenous animal and plant species.

The Transport Development Plan for 1999–2006 lists among future problems the possibility of the predominantly irreversible fragmentation of both urban and rural landscapes due to uncontrolled sprawl of the transport infrastructure. We cannot allow a situation where the quality of the environments deteriorates and free movement is restricted, with people and animals having to make do with small patches of land surrounded by roads and highways. However, the development plan fails to provide a single political goal to overcome this problem. The only objective related to biological diversity in the chapter on environmentally and a human-friendly policy pertains to the need to put a stop to harming the nature through acidification.

The major road construction works in Estonia are carried out with the help of external financing and financial institutions make the allocation of funds dependent on the appropriate solution of issues related to both the natural and social environment. The MoTC planned such funding through the ISPA National Transportation Strategy. The strategy does not contain specific nature conservation or environmental measures but there is a special pull-down menu on the website of the Estonian Road Administration, listing among the requirements to projects the condition that a project has to ensure that natural communities can maintain their habitual living conditions as closely as possible. Therefore special measures (e.g. speed restrictions, traffic control devices etc) and special structures (mesh fence, wildlife underpass, ecoduct etc) must be used in places where animal migration paths cross highways to keep animals away from highways.

The Long-term National Fuel and Energy Sector Development Plan is a key document in the energy sector, setting out the principal developments of the sector until 2018. The development plan includes several aspects pertaining to environmental protection. According to the development plan the energy sector affects most the environment in Estonia, given the structure of the economy (for example

⁶ http://www.maves.ee/MAK_SMH/MAK_SMH.pdf,

Estonia has no ferrous or non-ferrous metallurgy). The cleaning of excess wet ash removal waters discharged into natural water bodies from the oil shale burning power plants (pH > 12, heavy metals) remains an unsolved problem to date. Emissions of sulphur and fly ash are another significant environmental concern of the energy sector. Mainly on account of oil shale based power engineering sulphur emissions originating from Estonia are 1.4 times higher than those received from the neighbouring areas. Less than 20% of the sulphur precipitation has been generated here. Thus only the classical air and water pollution aspects are dealt with. The most important environmental priority of the development plan is to “guarantee the performance of international environmental requirements”. Unfortunately no attention is paid to the aspects of resource protection (incl. biological resources, i.e. peat, timber) in relation to the use of local fuels nor to the aspect of biological diversity in relation to hydro and wind power.

The Principles of Estonian Tourism Policy is a document that defines the action plan for one of world's most rapidly developing economic sectors. Based on the guidelines contained therein the general socio-economic objectives of tourism in the field environmental protection and cultural policies are the following: raising the sense of responsibility in designing the environment; promoting the preservation of natural and cultural treasures.

Unfortunately no further explanation is provided about the contents of these objectives in the document. The more detailed but already outdated National Tourism Development Plan for 2000–2002 is equally unhelpful. One of the product development measures (development of recreational and national parks) states that „in addition to research national parks must pay more attention to the needs of guests and tourists”. Road signs and information stands shall be put up in the parks, visiting centres, recreation and picnic areas shall be created and special means are employed to attract visitors.

The county development policies do not regard biological diversity as a priority. It is usually mentioned in quite general terms in chapters devoted to environmental protection or tourism. For example, the development documents of Järva or Põlva County, which are typical counties in Estonia, regard “scenic landscapes and a clean environment as good preconditions for developing farm, sports and other types of tourism”.

The Estonian Research and Development Strategy “Knowledge-based Estonia” for 2002–2006 sets out the key strategies and calls for an increase in the resources to be used for these strategies. National programmes are to be created and launched for developing the key areas. The key areas do not list the environment or nature, however, the text does mention that in parallel with the development of the key areas, research in the Estonian language, national culture and history, in the sustainable development of statehood and the society, in the preservation of nature and sustainable use of natural resources shall be pursued and promoted in a consistent manner. Research in biological diversity requires considerably more attention and financial support.

3. Implementation of convention issues in national programmes

By way of summary one can say that national programmes and development plans usually touch upon the issues pertaining to the Convention on Biological Diversity either directly or indirectly and that often the coincidence of the principles can be accidental. Only the development documents of the environmental and natural resources sectors make direct references to biological diversity, with strategies of other sectors barely mentioning the convention. Such development plans emphasise the following biological diversity aspects:

environmentally and human-friendly policies;

protection and improvement of environment;

environmental impact;

designing the environment;

preservation of natural and cultural treasures;

ensuring that natural communities can maintain their habitual living conditions as closely as possible.

4. Monitoring of adopted programmes

The continuation of the biological diversity process, which usually means monitoring, evaluation, supplementing and amendment, has not undergone sufficiently detailed discussion between the parties as of yet. What is clear though is the obligation of the Contracting Parties deriving from article 26 of the convention, to present regular reports about the measures undertaken to implement the provisions of the convention and the effectiveness of these measures in meeting the objectives of the convention. The plans for conservation and sustainable use of biological diversity, prescribed by article 6 of the convention, are the most important bases for preparing the reports.

Monitoring of the implementation of the National Biodiversity Action Plan and the biodiversity status should be co-ordinated by a national advisory body, bringing together representatives of political, administrative and economic circles and the third sector. This body could also co-ordinate the preparation of national biological diversity interim reports, whereas the members of the operational network and organisations they are representing would provide information for the reports.

The respective steering bodies (ministry, county government, local government or its sub-unit and appointed responsible persons) ought to be responsible for implementing the sub-national development plans and programmes. At present the monitoring of implementing the biological diversity programmes and development plans has not been too successful. Some of the reasons of this shortcoming include failure of the programmes and development plans to define clear and measurable objectives, appoint responsible persons, prescribe the reporting procedure or determine the nature, volume and sources of the necessary resources.

Creating a national standard for development programmes would make implementation of the programmes more effective. This process has begun in the MoF, which hopefully will establish specific requirements for the preparation of strategic development plans.

5. Databases

Stakeholders of biological diversity are as a rule involved in general or specific information pertaining to their respective fields. Estonia has not yet established a Clearing House Mechanism for biological diversity, i.e. a meta-database, despite the fact that as Contracting Party to the Convention on Biological Diversity Estonia has undertaken the relevant obligation. The Clearing House Mechanism is an interactive information exchange environment arranged along the themes of the convention, which also includes the strategy and action plan for biological diversity information exchange. Still, in the autumn of 2002 the preparations for establishing the mechanism began through the sub-project Creating a Biodiversity Clearing House Mechanism in Estonia of the UNEP project GF/2716-01-4354: "Assessment of Capacity building needs for Biodiversity, Participation in Clearing House Mechanism in Estonia". Within the framework of this project an Internet-based interactive information exchange environment is currently being established, with contractual thematic focal points generating information for more than 20 themes under the convention. Plans are also underway for preparing the strategy and action plan for biological diversity information exchange.

6. Financing

The state budgetary allocations used directly for the Convention on Biological Diversity amounted to 25 000 EEK in 2000, 185 000 EEK in 2001, 100 000 EEK in 2002 and 200 000 EEK in 2003. Although the actual amounts spent by the state on protecting biological diversity are by times higher than that, there is no clear overview thereof, given the lack of a co-ordinating body.

It is necessary to establish a system of co-ordinated planning and reporting for the funds needed for implementing the convention. This would help build a sound basis for implementing biological diversity development plans in a more goal-oriented way. At least one employee would have to work full-time in order to co-ordinate the activities of this scope.

7. Stakeholders

Stakeholders could be defined as organisations and associations of individuals who wish to influence the national policy outside the government and parliament. Over the past ten years civil society has developed in Estonia in leaps and has become more politicised as well: freedom of speech and freedom of the press have led to emergence of versatile mass media (television, radio and print journalism), the originally homogeneous popular movement has broken into political parties and groups pursuing different goals and ideas, including environmental groups. However, such stakeholder groups are still in a developing stage and their features may not always be clearly distinguishable. In order to get a better idea of these groups, the more dominant institutions among them, but also the various project-based and web-based social associations could be described in more detail. The list of stakeholders in the annex also includes governmental organisations, due to the influence they have in the extra-governmental and extra-parliamentary preliminary consultations, in addition to their regular executive tasks.

8. Public awareness

Public awareness and responsibility plays a key role in the actual implementation of each of the conventions. According to a study conducted by the Finnish Environment Institute in 1999 environmental awareness in Estonia is by an order of magnitude lower than in the Nordic countries and Central Europe. This is predominantly expressed in unwillingness to take active individual responsibility for the state of the environment and seeing the right of public access rather from the consumer's point of view and not from the point of view of someone being responsible.

At the same time Estonia's advantages include sufficient knowledge of the nature on the academic and educational plane and the high motivation of the third sector to engage in nature protection. It is necessary to see the value of this knowledge and initiative and communicate it to many target groups.

The most important education policy documents, the Educational Strategy "Learning Estonia" and the Estonian Life-Long Learning Strategy fail to touch upon nature education

Public awareness has connections with the implementation of the biological diversity programme on several levels:

- training of top experts and involving their skills and knowledge;
- formal nature education (higher, vocational and general education, curricula);
- informal nature education, practical knowledge of nature;
- public awareness, values, actions

All levels are equally important for Estonia as a whole. Informal nature education is also especially important for practical knowledge of nature and for forming values and attitudes. (The Nordic countries, e.g. Denmark have made this area a priority and as a result large target groups have started to value nature.)

Several bachelor's and master's programmes in the universities, in particular in the UT and the EAU, prepare specialists in the knowledge of nature, who can then start working in environmental bodies, research facilities and other similar organisations. The UT is introducing a biological diversity curriculum as part of its bachelor's and master's programmes. At the same time, sadly, the volume of practical study aimed at the knowledge of nature, is shrinking in the new curricula. The new master's programme in the EAU sets out to avoid this danger. Many of the PhD and MSc level theses defended in both the UT and the EAU (ZBI and Environmental Protection Institute) support the preparation of top specialists in this area. They can be involved in monitoring and working with protective measures related to biological diversity in Estonia and they can engage in the relevant international co-operation.

One can become a teacher in natural sciences by studying either at the TPU or the UT (both daytime study and distance learning are available). Both universities are also actively involved in continuing education of teachers of life sciences. This has turned out to be the most important way of channelling

new information to schools. This channel would probably also be the best for informing schoolchildren about the new conventions pertaining to Estonia. Many teachers regard the journal "Estonian Nature" as the most reliable source of information.

Given the emphasis in the EU on supporting vocational education, it would be a good idea to engage European programme funds for vocational education aimed at enhancing the knowledge of nature. As a pilot project the Suuremõisa Technical School has launched a two-year programme in natural environment and landscape management. The curriculum includes 40 hours of (nature) interpretation. Consultations are also underway for creating a new curriculum for teaching nature guides in the Luua Forestry School. The UT Colleges in Türi and Pärnu, offering professional higher education have also been developing curricula for environmental education.

Students in schools with generally good performance indicators have also sufficiently good general abstract knowledge of nature. However, many city schools are not offering enough practical opportunities for studying the nature. Given the already crammed school programmes the best solution here could be a national investment into developing a network of extracurricular nature study bases. The role of universities (in particular that of the TPU or the UT) in updating the formal general education is reflected in creating new textbooks and other study aids and new curricula.

Over the past years the MoE has been funding a project-based programme in environmental awareness through the EIC. The annual volume of funds allocated for this purpose is ca 10-15 million EEK out of the total volume of ca 250 million EEK spent on the EIC programmes. Pursuant to a scheme launched in 2002 a part of this amount has been allocated to county programmes since 2003. The EIC has concluded agreements with NGOs for the co-ordination of these county programmes.

The role of protected areas in the protection of habitats and in the practical study of nature must not be underestimated. The scenarios of managing both manned and unmanned protected areas have been high on the agenda in Estonia (the manager could be the MoE, a new agency or the SFMC). Scenarios creating a conflict between commercial (e.g. interests of recreational mass tourism and forest industry) and conservation and study interests could pose a grave danger to both nature conservation and education. The MoE Strategy and Investments Department has started the process of drafting the terms of reference for a Cohesion Fund project for developing the infrastructure for protected areas related to the Natura 2000 sites. Several other measures use EU funds for enhancing the infrastructure for (nature) tourism. Although through proper management such developments could promote practical nature education, it is important to avoid a conflict of such investments with the objectives of protecting biological diversity (e.g. developing hiking trails in protected habitats out of incompetence). The MoER has had only limited resources for supporting extracurricular nature education (ca 500 000 EEK per year). These funds have been used for preparing study aids, organising student competitions and camps for the best student authors of research works etc. The low priority assigned by the MoER to informal nature education has been a persisting problem, which partly arises from its classification as marginal hobby education.

Nature houses are an important part of the support structure of informal nature education. The MoER has the obligation to supervise the study quality of the Tartu and Pärnu Nature Houses, which have been registered as private schools providing hobby education. In the course of the so-called 2001-2002 hobby education reform the future of several nature houses was in danger. Neither the state nor the city of Tallinn took responsibility for financing the activities of the Tallinn Nature House, which had served as a national co-ordinator and thus the establishment with a 50-year history was closed. A compromise was struck in Tartu, as a result of the active steps taken by environmental organisations. Thus the nature house continued operating as a private school, under the management of the Tartu Environmental Education Centre and with continued financial support from the City of Tartu. The Pärnu Nature House has been operating without major problems in the administrative area, and with the support of the city.

Nature schools do not have the number of teachers and teaching loads to meet the requirements established for hobby schools, but they can offer programmes of practical study of nature aimed at enhancing the knowledge of nature and learning to value the nature...

The Sagadi Nature School of the SFMC is well-known as the most active among nature schools. Smaller nature schools and nature bases (including the SFMC nature houses) usually offer the possibility to be out in the nature and/or 1-2 guided nature tours.

NGOs have contributed greatly to the promotion of nature education both due to their mission and through various programmes. Several organisations have formed joint pressure groups to prevent the closing of the Tartu Nature House, stop incompetent initiatives aimed at reorganising the Estonian nature conservation system etc. Many NGOs have their own nature education programmes or they are participating in the activities of other foundations and non-profit associations pursuing the same goals (e.g. Tartu Environmental Education Centre, the Loodusajakiri (Nature journal) non-profit association).

9. Outlook for implementation of convention

The Estonian National Biodiversity Strategy and Action Plan, covering the years 1999–2005, determine the outlook for implementing the Convention on Biological Diversity in Estonia. The strategy and action plan are to be revised and renewed every five years. The process of evaluation will take into account the biological diversity monitoring data acquired in the meantime, but also the experience and recommendations of the UNCED follow-up process, any new developments, e.g. in the EU environmental policy etc.

There are no major problems in fulfilling the general objectives of the convention, however, creating and launching the more specific institutional and procedural infrastructures could cause difficulties. Following the requirements of the Cartagena Protocol on Biosafety could probably be fairly complicated.

ANNEX 1B

Thematic Profile on the Framework Convention on Climate Change for the National Capacity self Assessment (NCSA) project - Estonia

1. Legal instruments and their effectiveness

The Convention on Climate Change provides that every Contracting Party has the obligation to mitigate the effects of climate changes; however, any such measures should be taken in compliance with the development of the society and economy and avoids adverse effect on economy. At the same time the Convention on Climate Change allows the Contracting Parties great latitude in bringing their legislation in line with the convention and therefore there are no direct conflicts therewith.

According to § 5 of the Constitution of the Republic of Estonia (RT 1992, 26, 349) the natural wealth and resources of Estonia must be used economically and §53 prescribes that everyone has a duty to preserve the human and natural environment and to compensate for damage caused to the environment by him or her. The Sustainable Development Act (RT I 1995, 31, 384; 1997, 48, 772) prescribes the most general principles of sustainable development, thus serving as a basis for national and regional programmes, including the Action Plan for Air Pollution Reduction.

Since re-independence the Republic of Estonia has concluded 37 bilateral or trilateral environmental agreements and has become party to 26 environmental conventions and protocols.

The Vienna Convention for the Protection of the Ozone Layer (1985) and the Montreal Protocol on Substances that Deplete the Ozone Layer (1987) (RT II, 02.10.1996, 33/34, 119). The objective of the convention is to encourage cooperation among countries to protect the ozone layer against adverse effects resulting from human activities, which modify the ozone layer. The Montreal Protocol regulates emissions of substances that deplete the ozone layer, with the ultimate objective of their elimination.

The Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (1998). The convention establishes the obligation to make environmental information available to the public, both in the form of replying to queries and actively disseminating such information. Public authorities must involve the public from an early stage in environmental decision-making.

The Energy Charter Treaty and Energy Charter Protocol on energy efficiency and related environmental aspects. These documents regulate economic activities and co-operation between the countries in the energy sector.

The Geneva Convention on Long-range Transboundary Air Pollution (1979). Pursuant to the convention the parties have the obligation to develop policies and strategies for air pollution abatement through information exchange, consultations, research and monitoring.

The Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991). The convention regulates the procedure for transboundary environmental impact assessment.

The Rio de Janeiro (1992) Convention on Biodiversity. The objective of the convention is to start the process of national planning in the Contracting States for the protection and sustainable use of biological diversity.

The Ramsar (1971) Convention on Wetlands of International Importance Especially as Waterfowl Habitat. The objective of the convention is to protect wetlands, given their shrinking area and deteriorating value due to pollution, drainage and growing economic use. A total of 10 Estonian wetlands have been included in the List of Wetlands of International Importance within the framework of the convention.

The Berne (1979) Convention on Conservation of European Wildlife and Natural Habitats. The convention sets out to preserve the European flora and fauna and their natural habitats.

In Estonia drafting environmental legislation is usually initiated by the GR, the MoE and the MoEAC. The MoA and the MoER have also come forward with legislative proposals concerning the principles of the convention. The latter also takes care of reflecting the problems of climate change in the curricula. There is some formal conflict here, though, for according to the Riigikogu Rules of Procedure Act (RT I 2003, 24, 148; RT I 2003, 90, 601), a committee of the Parliament (Riigikogu) may initiate the deliberation of a matter of significant national importance, whereas several other acts (e.g. the Sustainable Development Act) prescribe that "the GR shall determine the tasks and deadlines for preparing development plans in matters of national importance, i.e. in matters concerning the development of the energy, transport, agriculture, forestry and tourism sectors and the chemical, construction material and food industry". This causes ambiguity as regards responsibilities and duplication. At the same time the Parliamentary Environmental Committee has been the leading committee in the legislative proceeding of almost all draft acts pertaining to the environment. The committee reviews proposals concerning amendments and additions to the draft acts and is responsible for the whole procedure until the Parliament adopts the final decision in the matter.

The Environmental Impact Assessment and Environmental Auditing Act (RT I 2000, 54, 348) should be mentioned as an act regulating general environmental issues. The law prescribes the requirements for the conduct of assessments of environmental impact (incl. assessment of strategic environmental impact) in developing national policies. Thus compliance with this act could be viewed as a guarantee for the implementation of the convention. However the law is worded in quite general terms. In order to guarantee compliance with the convention the law should prescribe specifically, which parameters and activities serve as a basis for assessing the environmental impact (in particular strategic impact), which control parameters are used and in which case the likely environmental impact is acceptable. The other relevant acts include the Environmental Monitoring Act (RT I 1999, 10, 154), which provides for the organisation of environmental monitoring, the procedure for processing and storing data obtained, and the Integrated Pollution Prevention and Control Act (RT I 2001, 85, 512), which lays down the bases for the prevention and control of pollution and regulates the grant of integrated environmental permits.

Regulation of the GR establishing Special Conditions for Granting State Aid for Environmental Protection (RT I, 11.12.2002, 100, 588), prescribes the procedure for environmental protection investments and investments for covering operating expenses related to environmental protection.

The Ambient Air Protection Act (RT I 1998, 41/42, 624) regulates activities, which involve the emission of pollutants into the ambient air, damage to the ozone layer, and appearance of factors, which cause climate change. The law also determines the measures to reduce the level of pollution and establishes the procedure for grant of pollution permits. The Minister of Environment has issued a number of regulations on the basis of the Ambient Air Protection Act, e.g. Target Values of Level of Pollution of Ambient Air (RTL 1999, 148, 2097). In addition there is legislation to regulate the emissions of pollutants in exhaust gases of motor vehicles, the volume of exhaust gases of large combustion plants, emission limit values of pollutants from the industry etc. Unfortunately the Ambient Air Protection Act was adopted already in 1998 and has become obsolete, given the rapid development of the economy and the requirements of the new EU directives on the protection of ambient air. The process of drafting a new law is underway, given the large amount of the necessary amendments, which would otherwise considerably exceed the volume of the existing law.

In 1999 the Parliament adopted the Pollution Charge Act (RT I 1999, 24, 361), which provides the rates of the charge to be paid for release of pollutants or waste into the environment and the procedure for calculation and payment of the charge. The pollution charge for release of carbon dioxide (CO₂) into ambient air was imposed on 1 January 2000 in Estonia. If the total rated thermal input of the combustion plants of a source of pollution of an energy undertaking is greater than 50 megawatts, the undertaking shall pay the relevant pollution charge. Combustion plants using biofuel, peat or waste are exempt from the charge. It is important to note that the current model, which ties the obligation to pay the pollution charge with the capacity of the plant, distorts the market and is irrational (leading to the impression that smaller capacities are more preferable as regards their impact to the environment) and thus needs to be modified.

Pursuant to the Pollution Charge Act the pollution charges are increased in some regions of Estonia, these are densely populated areas, resorts and industrial regions. The law also provides for the possibility to finance activities as a substitute for the pollution charge if the polluter implements, at the polluter's expense, environmental protection measures which ensure the reduction of pollutants or waste by the rate prescribed by the law or participates in the financing of national and regional environmental programmes or projects.

Since January 1997 the use of renewable resources has been given preferential treatment by the Estonian Value Added Tax Act (RT I 2001, 64, 368, last amended by RT I 2003, 48, 344): electricity generated by wind, and hydro-electricity was subject to the value added tax rate of 0% until Estonia's accession to the EU. Thereafter the regular 18% rate started to apply. In addition the reduced 5% value added tax rate is used "for heat sold to natural persons, housing associations, apartment associations, churches, congregations, and bodies or organisations financed from the state budget or a rural municipality or city budget, and for peat, fuel briquettes, coal and firewood sold to natural persons". For the purposes of energy conservation and consequently for the purposes of the Convention on Climate Change this tax advantage is extremely incorrect, distorting the market and slowing down investments into energy conservation measures. Fortunately this exception is of a temporary nature and the tax advantage will be lifted from 1 July 2007, thereafter the regular 18% rate starts to apply.

From 1 July 2003 the Energy Act was replaced by a package of four different pieces of legislation:
Electricity Market Act (RT I, 10.03.2003, 25, 153);
Natural Gas Act (RT I, 03.03.2003, 21, 128);
Liquid Fuel Act (RT I, 03.03.2003, 21, 127);
District Heating Act (RT I, 10.03.2003, 25, 154).

Within the context of the Convention on Climate Change it is important to point out the new support scheme introduced in the Electricity Market Act to renewable energy – the obligation to purchase electricity generated from renewable energy sources at a price that constitutes 1.8 times the production price of the Narva Power Plants (According to the amendment in the law, the above production price is a price approved by the Energy Market Inspectorate). The District Heating Act introduces as an important development the right to establish district heating regions. The Liquid Fuel Act prescribes liquid fuel quality requirements (which become gradually more stringent) and mechanisms for controlling fuel enterprises (from the latter obligation arise concerns with regard to supervision over the implementation of the law). In addition the following provisions are of significance:

Electricity Market Act (§2): "Every three years, the MoEAC shall prepare a development plan for the electricity sector and submit it to the GR for approval" (this plan has to discuss environmental protection aspects as well). District Heating Act (§3): "In order to increase energy efficiency, preserve the quality of the environment and use natural resources rationally, the GR shall approve an energy conservation programme and an operational programme for the conservation programme".

The legislation for the energy, industrial and transport sectors, i.e. the sectors that are the most important for the purposes of greenhouse gases, usually contains measures necessary for implementing the convention. Thus the political direction of the state is in compliance with the convention. However, the priorities of the convention in our legislative and policy formulation processes derive first and foremost from the EU priorities and compliance with the convention occurs due to the fact that the two coincide.

The development and existing legislation of the agricultural sector, a sector which is somewhat less important as regards the convention, but still important for Estonia because of various reasons, has been in full compliance with the principles of the convention. However, total emissions from the agricultural sector would not be decreasing in the medium to long-term perspective, when the development of Estonia's agriculture starts to be supported by various programmes and measures.

In the future Estonian agriculture will be mainly following the EU Common Agricultural Policy (CAP). Articles 32-38 of the Treaty establishing the European Community serve as a legal basis for the implementation of CAP. One of the goals of the Common Agricultural Policy is to increase the productivity of the agricultural sector. The reform plan agreed upon in 2003 did go somewhat back on the previous positions, aimed at a strong policy reform towards developing rural life and environmental

protection. The same principles could still be maintained though – in the future the grant of direct payments is dependent on the fulfilment of environmental, food safety and quality requirements, thus promoting production not for the sake of production per se, but promoting environmentally friendly and high-quality production, which is safe for consumers.

The Organic Farming Act (RT I 2001, 42, 235) is also important among the legislation regulating the agricultural sector. According to the act organic farming is the sustainable production of agricultural produce which maintains basic equilibria, whose principles are in compliance with the provisions of the Convention on Climate Change, reducing on the one hand the emissions of N₂O caused by the use of nitrate fertilizers and promoting on the other hand the development of effective and sustainable production. A number of secondary legislative acts have been issued on the basis of this act to regulate the various aspects of organic farming. The Fertilizers Act (RT I 1997, 93, 1563) regulates the use of fertilizers and the establishment of the relevant register. The financing of the agricultural sector via the SAPARD Programme is regulated by the Special Accession Programme for Agriculture and Rural Development Multiannual Financing Agreement Between European Community Represented by Commission of the European Communities and Republic of Estonia Ratifying Act (RT II, 07.05.2001, 14, 68). The rules for the grant of agri-environmental support are prescribed in the regulation establishing Requirements for receipt of agri-environmental support and the procedure for applying for support and processing applications (RTL 2003, 25, 363). Agri-environmental support is financial assistance used as partial compensation for the development of environment-friendly economic activities, increase of biological and scenic diversity and the expenses incurred for the activities for preservation of natural and cultural heritage characteristic of the local environment, and for smaller profitability arising from these activities.

There are some problems with respect to information available to agricultural producers when applying for support. According to the producers the whole procedure is too cumbersome and way beyond their ability to manage it. The number of applications has been increasing year by year, as has the interest towards support to receive practical training and education.

Several legislative acts regulate waste management in Estonia, which allows us to say that all the preconditions are there for activities in compliance with the Convention on Climate Change. The Waste Act (RT I 1998, 57, 861; 1999, 23, 353) provides general requirements for prevention of waste generation, for prevention of hazards arising from waste generation and for organisation of waste management with the objective to reduce the harmfulness and quantity of waste. Regulation of the Minister of Environment establishing Requirements for the Construction, Operation and Closing Down of Landfills (No 34; 26.06.2001) plays an important role as well. In addition to the various requirements concerning landfills, the regulation also touches upon the collection of landfill gas. However, the regulation is vague about when the layer collecting the gas should be created. This is left for the local environmental service to decide, for the data concerning the volumes of landfill gas produced, must be submitted to the local environmental service.

The new Waste Act (RT I, 26.02.2004, 9, 52), which entered into force on 1 May 2004, places the obligation to organise the transport of waste in densely populated areas on the relevant local governments. The unit of local government need not organise waste transport in low density areas of its administrative territory, where the number of waste producers is small, they are scattered and produce little waste, thus rendering organised waste transport too expensive, on the condition there are no environmental or health considerations for organised waste transport. The rate of the fee for waste transport must be sufficient to cover the cost of the construction, operation, closing and aftercare of waste management facilities and the transport costs. As a new development the units of local government are allowed to impose a waste tax by a regulation within their administrative territory in order to develop waste management. The local council shall establish the rate of the waste tax, which may not be higher than 20% of the fee for waste transport charged by the waste holder.

The Packaging Excise Duty Act (RT I 1997, 5/6, 31) is also connected with waste management. Excise duty on packaging is imposed on packaging filled in Estonia or imported or re-imported into Estonia. Packaging which is recovered at a rate prescribed by the law is exempt from excise duty. This ought to lead to a reduction in the volume of waste.

The forestry and land use sector is the main greenhouse gas sink in Estonia. The Forest Act (RT I 1998, 113/114, 1872) prescribes the obligation to prepare a forestry development plan at least every ten years. Pursuant to the Forest Act there are three objectives for cutting: reforestation, obtaining of timber and directing the growing of new forests. The current activities fail to strike a balance between these objectives – obtaining of timber takes precedence. Although the legislation is not in direct conflict with the wording of the convention, the sector has quite a number of problems with implementing the legislation and supervision. The reasons are manifold – the forestry policy in Estonia has undergone drastic changes in recent times, given several sweeping turns in the political system, ownership relations and economic strategy. Until 1995 most of forest land belonged to the state. By the time the ongoing land reform is completed 40 – 50% of the forests ought to be in private hands. This has made cutting a very lucrative business in a situation where state control over cutting and reforestation is insufficient and reliable statistics about actual cutting volumes is scarce. Black forestry is one of the main problems in the sector. The state is unable to put a stop to illegal cutting and the activities of the so-called strawmen. Any success can be achieved through stringent controls and in order to resolve the issue of using strawmen, some amendments have to be made in the current legislation. The Act Amending the Forest Act, the Use of Proceeds from Exploitation of Environment Act and the State Fees Act (RT I, 26.02.2004, 9, 53) specifies aspects pertaining to forest survey, the private forestry support system and prescribes the amounts of penalties for violating the rules pertaining to the transactions performed with right to cut standing crop or with timber.

Often there is uncertainty as regards who is responsible – the policies and strategies fail to establish clearly with whom the responsibilities rest for fulfilling specific objectives. This in its turn limits the possibilities of targeted financing. There is no following of the principle: background-objective-measures-responsible persons-resources. The attempts to deal with all outputs of the convention at the same time and the lack of clearly established priorities lead to ineffectiveness of legislation, scarcity of funds for everything – and therefore success is delayed. No decisions are in immediate conflict with the convention (although the arbitrariness in setting priorities is a problem). Still there are certain contradictions (e.g. several national documents mention emissions trading as a possible funding source, but the current Coalition Agreement rules out the possibility). At the same time the convention refers to differentiated social and economic conditions, which allows for legislation and formulation of policies to over generalise the attaining of the goals of the convention.

2. National programmes and projects

To date the National Environmental Strategy (RT I 1997, 26, 390) has served as the underlying document for planning environmental policy. The National Environmental Action Plan was prepared for implementing the strategy, defining specific conceptual, legislative, organisational, educational and training measures. Implementation of the National Environmental Action Plan is underway. The MoE is responsible for the general co-ordination thereof. Several ministries, which are also responsible for carrying out an element of the action plan, have included the respective measures in their own plans and budgets, in the same way several regional environmental plans draw on the experience of the National Environmental Action Plan. A number of NGOs are supporting and promoting public awareness about the National Environmental Action Plan and are monitoring the process of implementing the plan. For the purposes of the Convention on Climate Change the objectives promoting environmental awareness, use of environmentally friendly technologies, reduction of the adverse effects of the generation of energy on the environment and improving air quality are of highest importance; waste management is also significant, but to a lesser extent.

As the National Environmental Strategy was approved already in 1997, some results of its implementation can be assessed. Access to environmental information and co-operation with other countries has improved considerably, but the immediate goal has not been achieved, given the generally low regard of people towards environmental issues. Companies are also attempting to economise on account of environmental requirements, since the general state of the environment is not so bad. The discrepancy between the environmental protection requirements prescribed by law and the real possibilities has a further impact on the attitudes of some of the entrepreneurs. Malicious carelessness

is often reflected in the daily behaviour of people. Companies with foreign ownership tend to use more environmentally clean technologies, using the best available techniques in production and taking into account the environmental friendliness in the price of products is also high on the agenda. The Estonian Energy Company (Eesti Energia) is actively involved in reducing the adverse effect of the energy sector on the environment, the first results as regards reducing the negative impact of oil shale based power engineering on the environment have been achieved, but there is still a long way to go. As regards improving air quality the main emphasis so far has been on substances causing climate change and depleting the ozone layer and on transport pollution. Although some results have been achieved in this area as well, the lack of a general programme is a constraint. Not much has been achieved recently in the transport sector. The waste management sector has been relatively successful, but there is still no integrated waste handling system.

Pursuant to the Kyoto Protocol and Council Decision of 24 June 1993 for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions (93/389/EEC), as amended by Council Decision 1999/296/EC the Contracting Parties and Member States must prepare programmes of reducing greenhouse gases. The Draft National Programme of Reduction of Greenhouse Gas Emissions for 2003–2012 has been developed in Estonia. The MoE is responsible for implementing the programme. The programme was put together in 2003 for the years 2003–2012, by the IoE at TPU, Estonian Energy Research Institute of the TUT and Estonian Institute for Sustainable Development. Since May 2003 the programme has been waiting for approval and adoption by the GR. The principal goal of the programme is fulfilling the international obligations arising from the Convention on Climate Change and the Kyoto Protocol and reducing greenhouse gas emissions. The sub-objectives of the programme are the following:

- Determining the possibilities for reducing anthropogenic emissions of greenhouse gases;
- Offering possibilities for reducing anthropogenic emissions of greenhouse gases in order to reduce human impact on potential climate change;
- Developing the flexible mechanism of Joint Implementation along the lines of the Kyoto Protocol to reduce greenhouse gas emissions;
- Determining project themes for Estonia, suitable for Joint Implementation on the basis of the Kyoto Protocol and preparing a relevant database;
- Increasing the energy efficiency of the Estonian economy (reducing energy intensiveness).

The Estonian National Development Plan for the Implementation of the Structural Funds - Single Programming Document 2004-2006 is an important national document also for the purposes of the Convention on Climate Change. Measure 27 deals directly with the environment (Development of Environmental Infrastructure), measure 10 should also be mentioned (Investment into Agricultural Holdings). The general objective of measure 27 is improving the state of the environment and sub-objectives include improving the quality of ambient air, reduction of waste generation, enhancing the environmental supervision and monitoring system and promoting environmental awareness.

As regards climate, objectives no 2, 3 and 5 are of more importance. These provide for investing through the Cohesion Fund into the best available techniques in the oil shale burning power plants and promoting the use of renewable energy. The objective of promoting environmental awareness means involving the general public in environmental decision-making, active environmental protection and supervision and forming environmentally sound consumer attitudes among the younger generations. The plans are to achieve this goal by supporting initiatives that ensure the interest of the general public in environmental issues and invite the public to participate in the process of seeking solutions to the problems; forming values and attitudes through education is another important activity, especially aimed at children. Measure 10 deals with investment into agricultural holdings. This measure replaces measure 1 of the current SAPARD Programme. The general objective of this measure is to increase the competitiveness of agricultural production through technical progress. Unfortunately the strategic environmental assessment for the Estonian SPD states that the document fails to specify the real deadline for achieving the environmental objectives and requirements prescribed by law.

Sustainable Estonia 21: The strategy for Estonian sustainable development (SE21) analyses long-term development trends. This is a strategy for developing the state and the society until 2030, aiming at combining the aspirations towards success deriving from global competition with the principles of

sustainable development and preserving the traditional values in Estonia. Pursuant to SE21 the precondition for balanced sustainable development in Estonia is improved environmental mentality on all social levels, but especially among makers of decisions in general policy matters and among officials. According to SE21 economically and ecologically optimal schemes of using natural resources must be established in Estonia; as a first step in this direction, registers covering all natural resources and landscapes are to be drawn up. The document also offers recommendations for reorganising the energy and transport sectors. The authors admit though, that there is an inherent contradiction – intensive work towards one goal may turn out to be an obstacle to achieving another. The same can be true for the implementation of the convention. Moreover, SE21 is a document that is not binding on the decision-makers and has no force of law.

The Kyoto Protocol introduces three solutions for reducing greenhouse gas emissions; these are the so-called flexible mechanisms: Joint Implementation (JI), Clean Development Mechanism (CDM) and Emissions Trading (ET). Estonia became involved in the early stage of Joint Implementation in 1993, launching a number of renewable energy projects (these were mostly aimed at rebuilding boilers to start using local wood instead on imported liquid fuel) and energy conservation projects (renovation of district heating networks, insulation of apartment blocks and building heat stations) in co-operation with Sweden as the investing state. An Agreement between the Government of the Republic of Estonia and the Government of the Republic of Finland on Joint Implementation for Reducing Emissions (RT II 2002, 37, 183) was concluded in 2002 within the framework of implementing the convention. In co-operation with Finland the old boiler in the Paide boiler house is to be replaced with a bio boiler and a wind farm is to be constructed in Pakri. On 9 September 2003 a Memorandum of Understanding on co-operation between the Government of the Republic of Estonia and the Government of the Netherlands in reducing emissions of greenhouse gases under article 6 of the Kyoto Protocol (RTL 2003, 90, 1341) was signed. Within the framework of the MoU a 50.6 MW wind farm will be created in Paldiski. In return Estonia is ready to transfer to the Netherlands carbon dioxide emission reduction units. On 25 September 2003 a Memorandum of Understanding was concluded with Denmark (Türisalu wind farm, Ahtme). However, a serious bottleneck has emerged: these projects cannot be pursued further before the principles of ownership, use and administration of the emission quota have been established on the national level.

The initial goal of reducing pollution levels comes from the Estonian National Environmental Strategy, under which SO₂ emission levels must be reduced by 80% in comparison with 1980 levels, the emissions of particulates by 25% in comparison with 1995 levels and emissions of nitrogen compounds must be stabilised at the 1987 level and aims must be set for further emission reduction of nitrogen compounds by the year 2005. Pursuant to the bilateral agreement concluded between Estonia and Finland in June 1993, Estonia has to cut SO₂ emission levels by 80% in comparison with 1980 levels by 2009 and the NO_x emissions may not exceed the 1987 level. In 1980 the total SO₂ emissions from the Eesti and Balti Power Plants amounted to 190 259 t. In 2005 the ceiling for SO₂ emissions for the Narva Power Plants (AS Narva Elektriijaamad) is 38 052 t. The actual SO₂ emissions were 66 994 t in 1999, 68 794 t in 2000 and 64 721 t in 2001. In order to meet the target of reducing the SO₂ emissions set out in the Environmental Strategy, at least two of the power units must be renovated. This process is currently underway.

In compliance with the Order of the GR No 623-k of 25 July 2000, approving the National Programme for Reduction of Air Emissions from Large Combustion Plants 1999–2003 (RTL 2000, 88, 1338) Power Unit No 8 of the Eesti Power Plant underwent renovation.

Estonia requested and was granted a derogation for the rate of desulphurisation prescribed pursuant to Art 4(3) of the large combustion plants directive (2001/80/EC) for existing combustion plants firing oil shale mentioned in part A (solid fuels) of Annex III (SO₂ emission limit values) of the directive. The EU agreed to grant the derogation until 31 December 2010 to AS Kohtla-Järve Soojus Ahtme Power Plant and until 31 December 2015 to AS NEJ Balti and Eesti Power Plants and AS Kohtla-Järve Soojus Kohtla-Järve Power Plant. Estonia also undertook to close all the old type TP-17 units in the Balti Power Plant by 1 January 2008 at the latest. The rate of desulphurisation may not exceed 65% and emission limit values for solid particles may not exceed 200 mg/Nm³ in the combustion plants coming within the scope of the derogation.

The fact that by 2016 Estonia can use barely ~6% of its current power generation facilities (the Iru Power Plant and some small plants) is of critical importance. Thus more than 40 billion EEK must be invested in the electricity system (power plants + the distribution network) before 2016.

The Energy Conservation Programme (with the Operational Programme for the Conservation Programme 2001–2005) must also be mentioned in connection with the energy sector. The MoEAC is responsible for implementing the programmes. The general goal of the programme is to support the competitiveness of economy through increased energy efficiency; the quantitative objective is to keep the growth rate of energy consumption at 50% of the economic growth rate. Although positive results can be reported within the framework of the programme, there are also some constraints: in addition to limited funding, the insufficiency of the underlying statistical data (as regards energy consumption statistics by sector and by specific groups) has turned out to be a major problem. As a result some of the conclusions made have been inadequate and have led to difficulties in planning implementing measures.

The current Long-term National Fuel and Energy Sector Development Plan (RT I 1998, 19, 295) was approved by the Parliament on 18 February 1998. One of the main objectives of the plan was to raise the energy sector to the level required for accession to the EU. In 2004 two boilers using circulating fluidized bed technology will be completed in the Narva Power Plants. Since the technology is unique, any decisions concerning the development of large-scale power generation can only be made after analysing the operation of the new units. The decision concerning the next phase of developing large-scale power generation has to be made by mid-2005 at the latest.

The transport sector follows the current Transport Development Plan for 1999–2006, adopted by the GR on 9 March 1999. To a large extent this plan has remained on paper and only the growing share of new and cleaner vehicles and better quality motor fuels have helped slow down the increase in environmental intensity of the sector. In 2004 the MoEAC should come up with the National Transport Development Plan for 2004–2010. The fuel excise duty policies also have a considerable impact as regards the objectives of the Convention on Climate Change – upon accession to the EU the fuel excise duty rate for motor fuels will start going up, reaching almost double the current rate by 2010.

The Estonian RDP has been developed on the basis of Regulation 1268/1999/EC (article 4). This regulation provides a framework for pre-accession aid in agriculture and rural development (SAPARD Programme) in Central-European and Eastern-European countries for 2000–2006. The RDP was drafted in 1999–2000 and on the basis of the STAR Committee (an advisory committee of Member State representatives) 24 October 2000 decision the European Commission approved the Estonian RDP Sapard on 17 November 2000. The investments to be made within the framework of this plan are aimed at increasing the effectiveness and environment- friendliness of production. The general objectives of this support measure are to promote the development and continued use of environment-friendly economic activities; preserve and increase of biological and scenic diversity, help agricultural producers acting for the benefit of the environment earn appropriate income and raise the environmental awareness of the agricultural producers.

The draft RDP for 2004-2006, has been prepared as well. In general it follows the principles of its predecessor but covers the period from Estonia's accession to the EU to the end of 2006. The main goal is to support regionally balanced development of the rural areas through the measures of the EU Common Agricultural Policy. After accession the various agricultural payments will not be made out of the SAPARD programme but from the European Agricultural Guidance and Guarantee Fund (EAGGF) Guarantee Section. The measures that are important for the convention will remain mostly the same (incl. agri-environmental support). The problems in applying for the agri-environmental support have arisen from the insufficient number of trained consultants. The positive effects of the agri-environmental support (which has been paid only since 2000) include increasing environmental awareness of the producers, more careful planning of production activities and expansion of environmentally friendly management and organic farming practices on a gradual basis. Another positive development: the new RDP emphasises directly the issues concerning climate change and greenhouse gases.

The National Waste Management Plan (RT I, 23.12.2002, 104, 609) is the first ever strategic document organising waste management and providing guidance on a national level. The Waste Management Plan constitutes a part of Estonia's environmental policy and it is closely connected with the National Environmental Action Plan, prepared on the basis of the Environmental Strategy and with other strategic national documents. The Waste Management Plan provides for systematic waste management, uniform goals for the state as a whole, establishes objectives and tasks for counties, local governments, businesses and the general population. The Waste Management Plan is a dynamic strategic document, which is regularly revised, the activities undertaken are subjected to assessment, new activities are added to take account of the changing trends and needs. An important external objective of the Waste Management Plan is approximation of the EU and Estonian waste management trends, transposition and implementation of the EU waste handling principles. At the same time the Waste Management Plan does not cover waste that is excluded from the scope of the Waste Act pursuant to subsection 1(2) thereof, e.g. gaseous effluents emitted into the atmosphere. The Environmental Investment Centre Waste Handling Programme for 2003 is based on the Environmental Strategy and follows the obligations deriving from the Waste Act. A number of projects have been launched in this area.

In June 1997 the Parliament approved the Estonian Forest Policy (RT I 1997, 47, 768), which regulates the forestry sector as the main greenhouse gas sink in Estonia. This document does not allow the annual cutting volume to exceed the increment. The lack of an integrated plan of measures has been an obstacle to the successful implementation of the Forest Policy. The Estonian Forestry Development Plan up to 2010 deals with direct aid to private forest owners, which is good for sustainability. Attempts have been made to put a stop to black forestry and violations of provisions of forestry law. The plans to limit the circle of entitled subjects of privatisation were dropped in order to eliminate the current system that favours the use strawmen and black forestry. However, it is not clear how this is going to help solve the problem. The development plan includes annual prescribed cut data, which can be modified on an as needed basis.

The major forestry programmes are aimed at providing advice to private forest owners and at promoting their joint activities. To this end a private forestry advisory system will be developed on the basis of the county environmental services and the Private Forest Centre. As regards the Convention on Climate Change, it is important to develop and implement a reconstruction programme for land under cultivation which is overgrown and is temporarily not used for agricultural purposes, with funding from the EU pre-accession funds (incl. SAPARD) and structural funds. Among the newly launched programmes are the Forest Seed Stock Programme, Sustainable Forestry Monitoring Programme, Forest Regeneration Programme etc. Much of this has been achieved through co-financing from the EU structural funds.

It is difficult to assess (justify) the various national programmes, since most of them are ongoing. In general the transport sector seems to face the most complicated situation: it is only the new technology (the share of new cars is growing steadily) and high-quality fuels that have helped slow down the increase in environmental intensity in this sector.

3. Implementation of convention issues in national programmes

As a rule national programmes and development plans do reflect the issues pertaining to the Convention on Climate Change, although the connection need not be direct (the goals do not derive from the convention but rather coincide with those of the convention). Thus there are very few direct references in the various documents to the Convention on Climate Change. The development plans and programmes emphasise the following aspects:

- Conservation of energy;
- Sound management of the environment;
- Best available technique etc;
- Increasing effectiveness of production;
- Sustainable management.

However, there are problems as well: other areas have also determined their objectives, which may be contradictory to the convention (e.g. socio-economic objectives – employment). And without establishing priorities, having to operate with scarce resources, while trying to follow all the various objectives, it is difficult to achieve success in any of them. At the same time this tendency is quite natural and not at all in conflict with the principles of the convention (the convention does state that economic development is necessary for fulfilling the environmental requirements, i.e. implementing the convention may not jeopardise the sustainability of the economy of the country).

Another problem is the weak connection between the state budget formation process and the programmes. This could lead to a situation where a programme contains objectives, which are in compliance with the convention, but there are not enough funds for implementing the programme, no one has been appointed as directly responsible for the programme and there is no clear reporting procedure. As a result the programme element could fail or could only succeed due to a random factor (but not as a result of purposeful actions).

4. Monitoring of adopted programmes

In general a steering body (ministry, county government, local government etc) is responsible for implementing the development plans and programmes. Unfortunately monitoring of the programmes and development plans has not been overly successful. The reason lies in the fact that the development plans and programmes fail to set out clearly measurable objectives, persons responsible for implementation, procedures of reporting or the nature, volume and sources of the funds required for implementation.

Creating a uniform standard for preparing national programmes would improve implementation of the programmes. The process has started already: with the guidance of the MoF requirements are to be established for preparing strategic development plans. The State Budget Act (RT I 1999, 55, 584, last amended by RT I 2003, 24, 148) will be revised within the framework of this process as well.

5. Databases

National law regulates issues related to databases. The GR established the state register of databases with its 30 June 1998 Regulation No 150. Pursuant to the regulation the MoEAC is the chief processor of the register and the Estonian Informatics Centre is the authorised processor of the register. The Databases Act (RT I 1997, 28, 423) provides for the procedure for possession, use and disposal of state and local government databases, for the general principles of maintenance of databases belonging to the state, local governments and persons in private law, and for release and use of their data.

The Statistical Office of Estonia has the most important databases at its disposal. The Statistical Office is an agency within the area of administration of the MoF, which organises and co-ordinates national statistics and exercises supervision on the grounds and to the extent prescribed by law. Access to data is organised through the Internet and periodical publications. In addition the Statistical Office has been publishing for several years already special publications Environment in Figures and annual publications Environment and Environmental Protection Expenditures. 2002 saw the publication of Indicators of Sustainable Development, with data and analyses of several factors influencing our climate. There are also regular sectoral publications with indicators concerning agriculture, industry, transport etc. In recent years one of the challenges for the Statistical Office has been to bring the Estonian national statistics in line with the requirements of the EU acquis. In order to produce environmental statistics the Statistical Office organised 20 national statistical surveys in 2002, to collect data about the anthropogenic impact on the environment and the measures to improve the environment.

Special mention should be made of the EEIC at the MoE, which collects environment information and makes the data available through the Internet and publications. The EEIC also monitors the gaseous effluents emitted into the atmosphere. In 2000 the EEIC published State of Environment in Estonia on

the threshold of XXI century, a detailed collection of data, including data on air pollution sources and loads, gaseous emissions related to climate change etc.

The state register of construction works contains construction-related information, and its main task is to keep record of construction works, which are being built or are in use. As regards climate issues, this register should start collecting data about the heating systems of the construction works and fuels used for heating.

Some of the tasks undertaken under the Ambient Air Protection Programme coincide with the needs of the Convention on Climate Change, e.g. the collection of data about CO₂ emissions.

Under the Kyoto Protocol the obligations of the Contracting Parties include the establishment of a national register for greenhouse gases and carrying out periodic national inventories of anthropogenic emissions and removals by sinks of greenhouse gases. In Estonia the IoE at TPU organises the annual inventory of greenhouse gases required by the convention. The institute also keeps a relevant database, which is being updated on a regular basis. The data are forwarded to the MoE and the latter discloses then the data to the general public.

The aggregate energy and transport statistics is generally acceptable, but some problems do exist here as well. For example the specific information concerning industrial and domestic consumption is outdated and thus there are difficulties in carrying out research and analyses by target groups, aimed at applying energy conservation measures. Transport statistics could be improved as well. To date we are lacking adequate information broken down by fuels (petrol, diesel, gas) used by vehicles and data concerning annual mileage are based on very general estimates.

Agricultural statistics is reliable. An agricultural census was conducted in 2001 and the Statistical Office used the data so gathered to establish a database of household agricultural holdings. This database serves as a basis for samples of households from whom data are gathered. The Estonian forestry statistics is among the most problematic, due to the lack of a clear picture about cutting volumes. In addition to the Statistical Office forest surveys are being conducted by the Estonian Forest Survey Centre, which is a company whose only share is held by the MoE. The Estonian Forest Survey Centre has a large database of survey data and forest maps. Data from the database can be bought for a fee.

Various research institutions have formed databases for studying and analysing climate change and the ways to mitigate the effects of climate change. The Estonian Meteorological and Hydrological Institute manage long-term climate data rows.

The SG is the main database for legislation. The State Chancellery manages the database, which is available both in paper format and electronically. Any legislation, notice or other document published in either format has equal legal effect. The Estonian Legal Language Centre keeps an extensive free database on its website of translations of EU legislation. The MoE website has a link to the database of documents and publications related to the convention and other environmental documents and publications.

6. Financing

The MoE is responsible for the implementation of the Convention on Climate Change. The state budget allocations for the direct commitments undertaken under the convention have been the following over the years: in 2000 – 50 000 EEK, in 2001 – 280 000 EEK, in 2002 – 340 000 EEK and in 2003 – 350 000 EEK. Future direct convention related costs (including implementing the Kyoto Protocol, establishing the Secretariat, reporting, research, increasing public awareness) could amount to approximately 1.4 million EEK per year. The Climate Secretariat budget ought to set aside ca 300 000 – 500 000 EEK for analyses, reviews and research to be ordered from experts and consultants. According to the draft National Programme of Reduction of Greenhouse Gas Emissions for 2003–2012 the Climate Secretariat must be established no later than by 2007. It is quite impossible to estimate the amounts that are needed for fulfilling the principles of the Convention on Climate Change in more general terms, since most of the measures have broader objectives than implementing the convention (e.g. renovation of the power plants and introducing new technology in the power plants, regulating the forestry and transport sectors etc).

Both the private and public sectors are incurring sizable environmental expenses, but it is not possible to separate those costs that are incurred directly for the convention. One could rather see them as investments into the general principles of environmental protection and sustainable economy and into increasing the effectiveness of production.

Works and research that have implications for the Convention on Climate Change shall be carried out within the framework of the Ambient Air Protection Programme: monitoring gaseous effluents emitted into the atmosphere (CO₂), reduction of pollution sources and preparation of the national climate report. The central government budget also includes certain resources for protecting the air and climate; in 2001 this budget was 8 million EEK. The EAU plays an important role in organising the use of proceeds from the exploitation of environment and other funds earmarked for the environment. In 2001 the state budget allocated 220.9 million EEK for the Environmental Investment Centre, of which 5% was used for ambient air protection. On the other hand, emissions into the air account for 50% of the pollution charge proceeds. A situation like this, i.e. that emissions into the air account for 50% of the pollution charge proceeds whereas only a small amount of these funds is re-channelled into reducing emissions into the air, cannot be sustainable and should be amended. It must be noted though, that activities coming directly under the Convention on Climate Change constitute only part of the whole range of measures undertaken for the protection of the ambient air.

The funding of development plans and programmes for the various areas that are crucial for the long-term development of the state is relatively problematic: the state budget allocations tend to be meant for resolving short-term issues that are high on the political agenda and not for implementing development plans. This is why the development plans and programmes often are reduced to formal documents whose contents are not much taken into account, with only limited funds for implementing them.

7. Stakeholders

State agencies and enterprises with the majority of state ownership play the key role in implementing the convention and developing the relevant policies, but research institutions involved in the specific fields are participating quite actively as well. Since 1994 the IoE at TPU has been responsible for conducting the inventory of greenhouse gases and preparing the Estonian climate reports. Many scientists from the Estonian Energy Research Institute of TUT, the EAU and UT have been involved in research as well. The Faculty of Power Engineering of TUT has been very effective in resolving general issues pertaining to power engineering.

Several research groups in the EAU, IoE at TPU, IoG of the UT, EMI of the UT and the Estonian Meteorological and Hydrological Institute are studying the effect of climate change to agriculture, fresh waters, forests, the Baltic Sea and the Estonian coast, natural resources and biological diversity. Many Estonian scientists are participating in the EU VI Framework Programme and other international co-operation projects dealing with climate change research. The Tallinn Department of the Estonian Institute for Sustainable Development has shown initiative in several educational and practical co-operation projects, with special emphasis on the possibilities of reducing greenhouse gases in power engineering. University institutes devoted to forestry matters, e.g. ZBI of the EAU, are participating in research on sustainable management of forests, dissemination of the relevant information etc.

The involvement of the third sector and the general public is poorer than the average. During the past few years, the legislation has made it possible to involve the third sector and the general public, a good example is the Environmental Impact Assessment and Environmental Auditing Act (RT I 2002, 99, 579). The limited resources are a significant constraint here (bringing along the general public and the third sector requires additional resources both as regards time and money). The involvement of the third sector is further compounded by the strong emotionality of the stakeholders of the third sector and their unwillingness to compromise. It is interesting to note that the larger the share of private capital in any specific field, the more active the third sector in that field. At present there are no specific provisions in legislation to involve the general public, economic and scientific stakeholders in the process of implementing the conventions.

8. Public awareness

In Estonia public awareness of the Convention on Climate Change is still relatively poor. One of the causes for this is the actual level of CO₂ emissions, which is already considerably lower than the obligation undertaken by the Kyoto Protocol (due to the disappearing of the Soviet time energy intensive industry in the early 1990s). At the same time not enough has been done to explain the possibilities of emissions trading and joint implementation to the public.

In recent years provisions promoting the involvement of the general public have started to appear in the national legislation (e.g. Environmental Impact Assessment and Environmental Auditing Act (RT I 2002, 99, 579)). The Education and Research Information Programme Energia 2000 has been implemented as well. Energy conservation measures have been advertised to some extent in the media. At present energy conservation is mostly promoted through public competitions and through publishing annual reports. A survey conducted by the Environment Service of the Tallinn Transport and Environment Department showed that the people of Tallinn considered waste handling important and thought that it deserved more attention. The current general awareness level of Tallinners is not too high yet when it comes to waste handling. There are significant shortcomings in their behaviour as regards waste sorting and attitudes towards waste handling.

However, through mass media the general public has been constantly informed about the problems of climate change: through articles in the daily newspapers and specialised magazines, publication of numerous project reports and brochures. There have been conferences and meetings, which are open to all interested parties. The steady pace at which co-operation between the MoE, the NGOs and the media is improving, has directly contributed towards better public awareness. The Estonian Academy of Sciences, the universities, institutes and research societies are organising regular seminars and forums dealing with the various aspects of global warming and discussing the ways of mitigating the adverse effects thereof.

The past decade has seen a steady increase in the number of NGOs, which deal with environmental problems, raising public awareness and other similar matters. Co-operation between the different organisations is quite good. For example, eleven major environmental organisations formed an umbrella organisation - Estonian Chamber of Environmental Associations. The objective of the umbrella organisation is to improve and co-ordinate co-operation between the organisations and arrange joint projects. However, in the course of drafting this document we learned that the environmental organisations were not too keen on offering their contribution, the alleged reason being the wide range of issues they were already involved in.

Within the framework of drafting this document questionnaires were distributed among the stakeholders in order to learn about their proposals with respect to the convention, their own opinion of the strength of their connection with the convention and their ideas about projects that could be launched in order to better implement the convention. In general the feedback showed low awareness and involvement. This can also be seen as indicative – if there is no informed connection with the implementation of the convention, and then it is difficult to come up with the right answers to the questions put to them. According to the stakeholders, public awareness of the issues of the convention is low or medium at most. Even if people have heard about the convention they do not see its real connection with themselves or their activities. Social problems are a limitation to the people's good intentions with regard to following the principles of the convention. In general the responses showed that the respondents did feel connected with the convention to a greater or lesser extent, that they were actively involved in introducing more environmentally friendly technologies. However, they also pointed out the problems of financing general development plans, since the state budget fails to make provision for implementing these plans.

The important activities of the MoER in increasing awareness should be pointed out. Pursuant to Regulation of the GR Approving the National Curriculum for Estonian Basic and General Secondary Education (RT I 1996, 65/69, 1201) issues related to the environment and sustainable development are dealt with in basic school already. These themes are looked upon from three aspects: the natural environment, social environment (incl. economic environment) and cultural environment. The objective

here is to raise the environmental awareness of the students and teach them competences that help them live in a constantly changing environment in such a manner that the next generations will also have the resources available to them.

As a result of developing general competences and subject competences and integrated teaching the students will acquire broader thematic competences, which also include:

Nature competences – being well versed in the phenomena of animate and inanimate nature, their regularities, knowledge and mentality concerning nature; having environmentally sound attitudes. The subjects leading to nature competences include life sciences, geography, biology, chemistry, physics; the environment and sustainable development are the underlying themes;

Technological competences – ability to understand the changes caused by technical development in the ways people live and work, to operate in the modern high tech world, use resources sustainably. The subjects leading to competences include handicrafts, life sciences, mathematics, and history, civic studies; the environment and sustainable development are the underlying themes.

The relevant competences are monitored through the grading procedures of the education system. The Education Act (RT I, 07.04.2003, 33, 205) does not prescribe directly the agency responsible for carrying out these tasks, but in the government, the tasks should rest with the MoER. The various provisions of the Education Act cover quite well the convention related themes. Other legislation regulating the education sector, i.e. the Private Schools Act (RT I 1998, 57, 859), Vocational Educational Institutions Act (RT I 1998, 64/65, 1007), Universities Act (RT I 1995, 12, 119) fail to make direct reference to this subject, but it does exist in the curricula of the relevant subjects.

Having the environment and sustainable development as the underlying themes in the schools' curriculum is quite a new phenomenon in our education system and therefore teachers and heads of schools need advice and training in these matters. To meet this demand, a successful environmental education project for schools, Tuulik, was organised by the Dutch Foundation of Permanent Education. EMI-ECO was the Estonian project co-ordinator. Partners in the project were also the MoER, the MoE, UT, TPU, and IoE at TPU, Estonian Youth Work Centre and the Sagadi Nature School of the SFMC. The project aims to make students aware of changes in the environment over time and take responsibility for the environment in which they live. The project materials are in Estonian and Russian and can also be obtained through the Internet.

In addition to the Tuulik project a number of other environment projects are ongoing or being launched for schoolchildren.

The Consumer Protection Board started a new Internet programme for schoolchildren, Learn to Choose! ("Oska valida!"). The aim of the Consumer Protection Board is to use consumer training to make consumers independent, critical and informed and teach them the basics of consumer protection. The Learn to Choose! aims to inform the young consumers of their rights and opportunities in market economy.

The Green Flag project is a sub-project of the Foundation for Environmental Education (FEE). The FEE uses its programmes for increasing environmental awareness on a global level. Estonia has been participating in the FEE Blue Flag movement since 1994 and in the Eco-schools and Young Environmental Reporters projects since 2001.

The leading idea behind the Ökokratt environmental education project is to raise environmental awareness of people, especially the children and try to change their attitudes towards the environment, and to explain and inform people about sustainable ways of life.

All Estonian public law universities (UT, TPU, TUT, the EAU etc) have curricula in environmental education, devoted to sound environmental management, sustainable development, environmentally efficient power engineering, protection of the atmosphere etc. There are similar courses in the private universities.

There are several adult training facilities in Estonia where one can study environmental subjects. EMI-ECO is one of them. EMI-ECO is a non-profit independent training and consultation organisation following the principles of life-long learning. The activities of the organisation are aimed at increasing administrative capacity and competitiveness of enterprises and raising the education levels of the society.

The Open University at TUT organises many courses for adults, the subject include environmental issues as well. An example is an Internet-based course Modern Environment, aimed at teachers, environmental officials and inspectors and people involved in environmental issues, organisers of nature tourism and anyone actively interested in environmental protection.

In the end of 2002 the International Network for Environmental Management (INEM) launched the project Unternehmensverband für Umweltbewusstes Management für die Baltischen Länder (BALTEMA). Its main aim is to support the development of environmental management in the Baltic states. The project lasts until the spring of 2005 and the financing comes from the German Environment Fund (Deutsche Bundesstiftung Umwelt (DBU)).

2003 saw the continuation of the Eco Forum Baltica project by SEI-Tallinn. In co-operation with the Swedish County Governments, the Swedish Association Environmental Management, the Swedish Chamber of Commerce and several other partners from Sweden, Latvia, Lithuania and Poland they embark on various environmental management and planning activities.

9. Outlook for implementation of convention

There are no difficulties in implementing the general objective of the Convention. Problems may emerge upon creating and launching the institutional framework. However, there are doubts as regards the sustainability of the convention, since to a large extent the fulfilment of the convention objectives has resulted from processes accompanying Estonia's re-independence. Even if Estonia has no current problems with meeting the conditions of the Kyoto Protocol, economic development could lead to problems in the next phase.

To date the state budgetary allocations for implementing the convention have been fairly modest. Additional funding should be sought for better implementation of the convention and for carrying out the development plans whose objectives are in compliance with those of the convention.

It is important to understand that the funds for financing national goals are limited, therefore these goals have to have clear priorities. We need to concentrate on these priorities and not "do something of everything". In other words, we need to draw two pyramids, one for a hierarchy of national needs/goals and the other for national funds/resources along the same principles. A comparison of these two helps us determine where the activities are for which funds exist and then contribute to implementing these activities.

ANNEX 1C

Thematic Profile on the Convention to Combat Desertification for the National Capacity self Assessment (NCSA) project – Estonia

1. Legal instruments and their effectiveness

According to § 5 of the Constitution of the Republic of Estonia (RT 1992, 26, 349) the natural wealth and resources of Estonia are national riches, which shall be used economically. Under §123 of the Constitution the Republic of Estonia shall not enter into international treaties which are in conflict with the Constitution. The contents of the Convention to Combat Desertification are not in conflict with the Constitution which takes precedence over the convention.

To date Estonia has not yet ratified the Convention to Combat Desertification, but the existing legislation creates the basis for achieving the general environmental protection aims of the convention on national and local levels. In Estonia environmental legislation is usually initiated by the GR, the MoE and the MoEAC.

The Sustainable Development Act (RT I 1995, 31, 384) regulates the general principles of sustainable development. Other acts that deal with the impact on the environment, incl. the soils are the Planning Act (RT I 2002, 99, 579) and the Environmental Impact Assessment and Environmental Auditing Act (RT I 2000, 54, 348). The Water Act (RT I 1994, 40, 655) and the Shores and Banks Protection Act (RT I 1995, 31, 382) regulate the protection of the water resources and the Protection Rules for Pandivere and Adavere-Põltsamaa Nitrate-sensitive Protected Area (RT I, 2003, 10, 49) take into account the regional specifics. In addition there are a number of legislative acts which regulate practical agricultural activities: Water Protection Requirements for Fertiliser, Manure and Silage Storage and Requirements for Use and Storage of Mineral Fertilisers, Manure and Silage Juice Storages (RT I, 2001, 72, 443), Rules for Safe Use of Plant Protection Products (RT I 2000, 77, 493), Fertilizers Act (RT I, 2003, 51, 352).

Laws exist that reflect the general state of the soils and the changes in soils deriving from long-term natural conditions: Environmental Monitoring Act (RT I 1999, 10, 154), Environmental Register Act (RT I 2002, 58, 361), Land Improvement Act (RT I 2003, 15, 84).

There is also adequate legislation to avoid pollution of soils, even if they result from the general environmental protection goals: Procedure for Discharging Effluent into a Water Body or Soil (RT I 2001, 69, 424), Plant Protection Act (RT I 2000, 29, 169), Rules for Safe Use of Plant Protection Products (RT I 2000, 77, 493), Fertilizers Act (RT I, 2003, 51, 352), Chemicals Act (RT I 1998, 47, 697), Waste Act (RT I 1998, 57, 861) and Ambient Air Protection Act (RT I 1998, 41/42, 624).

Failure to clearly include the soils among the natural resources gives reason for concern (see § 5 and 6 of the Sustainable Development Act, § 8 of the Environmental Register Act) and still the Soils Act has not been adopted (a draft exists). Thus Annex V of the Convention is important for Estonia not so much for resolving global soil protection issues but for solving local issues.

Currently there are adequate requirements for environmental impact assessment and soil protection for large-scale activities. Mining and restoration of soil cover issues are efficiently taken care of in: the Earth's Crust Act (RT I 1994, 86/87, 1488), Approval of Procedures for Recultivation of Mining Areas. Procedure for Recultivating Land Spoiled by Opencast Mining (RTL 1996, 11/12, 89; RTL 2000, 37, 516) and Procedure for Recultivating Peat Production Areas (RTL 1996, 11/12, 89; RTL 2000, 37, 516). Soil affected by construction degradation may not be destroyed but must be restored: Requirements to Technical Construction Documentation for Construction Works of Different Types (RTL, 2003, 3, 28) and Standards and Requirements to Road Design Work (RTL 2000, 23, 303). Upon planning of construction works the possibilities of potential environmental pollution and conservation of

the natural environment must be taken into account, but the biological value of soil is overlooked (Planning Act (RT I 2002, 99, 579), Building Act (RT I 2002, 47, 297), Land Readjustment Act (RT I 1995, 14, 169)). Due to the ambiguous definition of the subject, the activities affecting the soils on the local level are not properly determined. This is true for example in § 2 of the Environmental Impact Assessment and Environmental Auditing Act: „The purpose of environmental impact assessment is to identify, assess and describe the likely impact of proposed activities on the environment, analyse the possibilities for the prevention and mitigation of such impact and make proposals regarding the choice of the most suitable solution.“ and in § 6 of the same act: „Environmental impact is significant if it may exceed the environmental capacity of a site, cause irreversible changes to the environment, endanger human health or property, or results from activities or combinations of activities specified in subsection (2) of this section.“

In order to be able to use soil in a sustainable manner as a renewable natural resource, one needs to know the properties and functions of soil. Therefore the share of laws and provisions regulating monitoring and prevention of changes that may emerge as a result of agricultural activities and forestry (exhaust, degradation and physical destruction of soil) is insufficient. In 1997 the Landscape Act and Soils Act started to be drafted. These drafts have not been adopted as laws yet.

In the transition years prudent management of soils had been organised through documents other than legislation, e.g. Good Agricultural Practice. This clearly did not carry enough weight. In more recent times handling indirect damage to soils caused by agricultural activities have been given better legislative protection, e.g. Land Readjustment Act (RT I 2003, 15, 84). The Requirements for Receipt of Agri-environmental Support and the Procedure for Applying for Support and Processing Applications (RTL 2003, 48, 697) serve as a sound foundation for developing suitable technologies of land use and soil preparation, specified in the convention. On the basis of this regulation of the Minister of Agriculture and through the agri-environmental support financial incentives are used to support the following activities to protect the soil and landscapes: employment of the techniques of good plant production practice; environment-friendly management; restoration and maintenance of semi-natural biotic communities; maintenance of land under cultivation which is overgrown and is temporarily not used for agricultural purposes. Good plant production practice requires restoration of the soil quality class by growing at least 15% of papilionaceous plants as rotational crops. Environment-friendly management means that buffer zones of 1.5 metres in width are used for the protection areas of natural land parcels, drainage ditches and roads. The regulation fails to guarantee protection of the soil, for it imposes no obligations on the owner for destroying the soil, so nothing happens to those who are unable to fulfil the requirements for support, or worse, intentionally remove and sell the soil from their land. Protection of soil and its restoration capacity is not guaranteed without restrictions to legal ownership.

The Forest Act (RT I 1998, 113/114, 1872) regulates the management of forest as a renewable natural resource to ensure human environment, which satisfies the population and the resources necessary for economic activity without unduly damaging the natural environment (§1), but practically fails to touch upon the soil protection aspects which are crucial for the sustainable development of forests. As a minimum rules should be established for the cutting time of forests on excessively wet soil, or else the obligation should be imposed to using technology that saves such soil from excessive pressure. Restrictions should also be established for the management of dry sandy soils sensitive to treading damage.

The national registers reflect soil information only indirectly; therefore it is difficult to connect the long-term changes resulting from human activities or environmental conditions with any specific location. The Act Ratifying the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (RT II 2001, 18, 89) deems as information the state of the following elements of the environment: air, atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components (incl. genetically modified organisms) and the interaction among these elements.

Soils as they are used in human society are characterised by built-in dualism: in natural land ecosystems it is an indispensable and untouchable natural resource to be protected, whereas in agricultural ecosystems (for agricultural activities) it is a bio (productive) resource that needs regulation. On the basis

of the MoE Statutes (§6) the tasks of the ministry include organisation of environmental protection and nature conservation of the state, performance of tasks related to land and databases containing spatial data, incl. organisation of the development and implementation of regional plans, organisation of the use, protection, restoration and registration of natural resources, ensuring radiation protection, organisation of environmental supervision, meteorological observations, nature and maritime research, geological, cartographic and geodetic works, acting as registrar of the land cadastre and water cadastre and drafting the relevant legislation. The Ministry of Agriculture Statues (RT I 2000, 22, 128) (§7) define the competence of the ministry as follows: the management of agricultural production, processing and agricultural market, the administration of the national reserves of foodstuffs and basic grain seed and grain for human consumption, the management of food safety and inspection, plant protection, veterinary medicine, agricultural science, education, training and advisory services, animal and plant breeding and agricultural environment programmes. On the executive government level the MoE would be a more impartial agency to be responsible for and look after the “natural resources” under the Convention to Combat Desertification. At present the various matters pertaining to soils come within the competence of the EEIC at the MoE, the Land Board (databases and maps), and the MoE Environmental Management and Technology Department (mining and environmental management).

The Agricultural Research Centre in the area of government of the MoA is also engaged in soil and land improvement monitoring. Little is known of the activities of the MoA Bureau of Agrienvironment and Renewable Resources. Moreover, Annex V of the Convention to Combat Desertification mostly deals with land use and agricultural problems (except sections a, c, g), which are high on the agenda in Estonia, but not adequately regulated by law. Therefore these two ministries must engage in closer horizontal co-operation, in order to push forward the lingering drafts of the Landscape Act and Soils Act. This is also crucial for the possible division of the competence to administer this natural resource: forest soils vs. arable soils. A somewhat similar solution has been found in the area of using and handling genetically modified seeds, feed and food.

2. National programmes and projects

Estonia has not ratified the Convention to Combat Desertification, therefore no additional programmes or projects have been launched in this area. The following programmes and projects, involving international commitments, are indirectly related to the convention:

Framework Convention on Climate Change (RT II, 01.01.1994, 43);

Convention on Biological Diversity (RT II, 01.01.1994, 41);

Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RT II, 20.10.1993, 27, 84);

HELCOM Programme;

Baltic Environmental Forum (BEF);

UNESCO Man and Biosphere (MAB) Programme;

AGENDA 21 (Decisions of the United Nations Conference on Environment and Development, Rio de Janeiro 1992).

The MoA is preparing the agri-environment programme and measures that will pertain to the protection of soils as well. For the time being there is not much information about land improvement monitoring. At present the volume of soils monitoring within the framework of national environmental monitoring should be increased, especially as regards soils heavily treated with lime (geochemical monitoring of soil), monitoring of hazardous substances (past pollution), long-term monitoring of connections between soil cover and climate (with the emphasis on studying the carbon balance and greenhouse gas emissions). Studies should be launched to investigate the adverse effects of deterioration of land use and drainage systems to the ecosystems.

Not enough has been done in the field of promoting environmental awareness and advanced training. There is a need to establish a network of training centres. Agricultural advisory services were introduced in 1996 and a few hundred agricultural consultants have been accredited. Advisory support is a means to use the national advisory support funds for covering a part of the costs of advisory

services, but neither the advisors nor those taking the advice are entirely happy about the current procedure. Advisory services ought to be seen as an integrated part of a chain consisting of research, study and active agricultural activities. In this way the study and research results are conveyed to the actual farmer by the consultants. More efforts are needed to involve the Estonian academic circles, introduce recent international research results and bring more innovative activities to the agricultural sector.

The volume and thematic range of applied research undertaken on the international level ought to be greater and more thematic training days should be organised.

According to the Estonian Economic Development Plan for 1999–2003 the general aim of economic policy is to achieve sustainable and socially and regionally balanced economic growth through increasing competitiveness. The economic policy must also strive towards reducing the gap between the Estonian and EU development differences and lead to the fulfilment of EU accession requirements.

There is really no alternative to the use of soil as non-arable land if we are to maintain employment in rural regions within the framework of implementing the goals of Annex V of the Convention (sections a, c, g) as well as the above-mentioned objectives. In comparison with Hungary and the Czech Republic, agricultural production that serves as a basis for production quota has dropped in Estonia almost two times during the transition period. Therefore more jobs were lost in the Estonian rural areas than in other EU candidate countries. Estonia has almost reached the average EU levels as regards employment in agriculture and hunting – 5.2%. The average unemployment rate is ca 10% and the share of the long-term unemployed (i.e. the discouraged) continues to be high despite this. The young and more competitive rural population is leaving for cities, thus reducing the rural unemployment level but pushing up the number of the long-term unemployed in urban areas. In 2002 Estonia spent only 0.27% of its GDP on employment policies. This is ten times less than the EU Member States.

The Estonian RDP for 2000–2006 helps mitigate the downturn in agriculture during the transition years. The plan has been developed in accordance with the requirements of article 4 of Council Regulation (EC) No 1268/1999, establishing a framework for Community support for agriculture and rural development for the pre-accession period of 2000–2006 (SAPARD). The task is to contribute to resolving priority and specific problems in order to ensure sustainable development of the agricultural sector and rural areas in the accession process. For the purposes of soil protection measure 7, “Agri-environment”, is the most important. Its objective is protection and enhancement of the rural environment, development of a sustainable rural economy (incl. the training and education of farmers) and encouragement of alternative economic activities.

The Estonian Forestry Development Plan up to 2010 (RT I, 2002, 95, 552) states in section 3.1 the indisputable versatility of the Estonian fauna and flora, especially in comparison with some neighbouring areas. This is the result of regional diversity in climate and soils, the extension of a large number of species distribution area borders to the territory of Estonia, the large proportion of natural landscapes in Estonia, the retention of traditional methods of land use until fairly recent times. Sadly, no more attention is paid to soil and the need to protect soil in this document. It is true though, that there are plans to increase the area of forests subject to strict protection from the current 7.2% to at least 10% of the current forested area, which consequently increases the area of protected forest soils as well.

Regional development plans do exist, but as a rule they are fairly similar to each other and mostly fail to touch upon the natural specifics of the region (incl. the specifics of the soil cover). There seem to be pragmatic reasons for developing these plans, e.g. to get financing from the ERDF for regional programmes. The convention emphasises the need for local development plans. But most of the county development plans only see the development of the infrastructure for the living environment as having potential and as regards natural resources; the stress is on pursuing tourism and recreational activities. The soils fail to be noticed as a rule, traditional agriculture is not considered promising. There are hopes as regards the development of alternative agricultural activities though. This is a good example of how to considerably increase public awareness through skilful promotion and even through legislation (Organic Farming Act (RT I 2001, 42, 235)), despite the marginal role played by these activities within the context of Estonian agriculture. The Järva County is the only exception: the fertile soils of the region allow them to see potential in the development of traditional agriculture as

well. The discussion of the environmental issues in these documents seems to be more informed than that related to soil management. To a certain extent this shows that the society in general and not only the people preparing the development plans are less knowledgeable in matters pertaining to soil.

The Estonian National Environmental Strategy states in the introduction that soil fertility, water, forests, fish stock and mineral resources are crucially important for ensuring long-term development in Estonia, however, this is the first and last time that the word “soil” is used in this document. The comprehensive SE21 is a document that aims at creating preconditions for sustainable development of Estonia. Objective 4 of SE21 deals with ecological balance: the Estonian landscape could become the most important element in the ecosystem; it could be seen as the living environment that encompasses also such global resources as weather (climate), air and water. Soil as a component of the ecosystem or landscape is ignored discretely. As a positive surprise the landscape as part of the cultural heritage is seen as creating added value for preserving the Estonian heritage in the process of globalisation. Strangely though, our peasant origin and non-travelling lifestyle has been “covered up”, however, it is due to the thousands of years of work of our forefathers that we have cleared from forest the (agri) cultural landscapes and have lived on the food produced from our indigenous fields. The recommendation to policymakers to involve natural scientists in the process of creating a knowledge-based and environmentally sustainable state can only be applauded.

3. Implementation of convention issues in national programmes

There is a clear need in the society for longer-term development plans, but given the large number of problems, it is not easy to prioritise them. Also excellent knowledge and in-depth analysis is needed to forecast these very complex processes in the society. National development plans and other plans are too generally worded and are meant as recommendation (guidance), rather than mandatory documents. The county development plans, i.e. those of the next level fail to provide specific objectives and solutions, rendering the implementation of the intentions less likely. On the local government (rural municipality and town) level the implementation part of development plans ought to be the most practical, in reality, it is only the intended purpose of land use that is established through zoning. The ambiguous nature of the Estonian administrative reform causes a fair share of misunderstanding on the local government level as well. And detailed plans are limited to the specific land unit/registered immovable for which the plan is prepared.

The convention related themes are quite thoroughly discussed in the relevant areas and sectors, but connections between the programmes and development plans are limited. Therefore there is duplication in some areas and nothing is happening in some others (e.g. socio-economic issues, employment, re-training). Most of the documents provide guidance and are not binding. Therefore not sufficient funds have been allocated for carrying out the commitments undertaken under the convention and reflected in the programmes.

4. Monitoring of adopted programmes

There is no continuous monitoring of the development plans and adopted programmes. The ministries are in charge of national development plans and programmes (MoE, MoA, MoEAC, and MoER). Usually their efforts are limited to revising and supplementing the plans at a pace established by the relevant document (e.g. every 3 or 5 years). Often it is quite difficult to find electronic versions of documents of strategic importance. Projects financed from external sources include supervision as a mandatory element. For example the Estonian RDP for 2000–2006 prescribes compulsory systematic monitoring of the planned measures and assessment of their impact. A Phare funded Dutch-Estonian Twinning project Development of administrative capacity for monitoring and evaluation of the agri-environmental measures 2003-2004 has been launched in order to get experience in this field.

Only very few programme documents are used in day-to-day operations. The most frequent use thereof is for budget formation and reporting purposes (for example the decisions of the EAU are

guided by the Estonian National Environmental Action Plan). The lack of clear and unambiguous rules for implementing the plans and the fact that they are not legally binding, are the main constraints of their implementation. The implementation of the development strategies is often compounded by failure of the target groups to treat them as documents providing guidance, but rather as those of advisory nature.

5. Databases

Adequate databases about desertification of soil have to be created under the Convention to Combat Desertification. In 1996 modern data systems started to be developed in the MoA, supported by Phare: "Developing an Information System for Monitoring the Land Reform and Land Use", "Land Information System Strategy and Design Development", "IT equipment for the Land Information System to the Land Board". Unfortunately these systems were not put into immediate use.

Academic circles have stressed that sustainable development must be supported by adequate data and a soils database. The general public often has difficulties with access to data and sometimes restrictions are imposed. The purpose of the Public Information Act (RT I 2000, 92, 597) is to ensure that the public has the opportunity to access information intended for public use (this includes documented state of the environment), based on the principles of a democratic and social rule of law and an open society, and to create opportunities for the public to monitor the performance of public duties.

The European Environment Agency discloses regular information about soil monitoring programmes and their results. Europe has information about the following Estonian soil problems: the scope of soil erosion and soils sensitive to treading damage. Reporting by Estonia is hectic, because there is no comprehensive information about the actual state of arable land.

The most important national registers relating to the use and protection of soil are the following: cadastral register, road register, register of mineral resources, nature conservation register and the state register for the accounting of forest resource. National databases (e.g. digital soil map, geochemical atlas etc), regional databases (e.g. of the West-Estonian Archipelago Biosphere Reserve) and local databases (of research institutions, environmental services etc) are an important supplement to the national registers. The national registers treat soil related data as indirect and marginal (e.g. as forest site types or valuation zones etc). Given that the various registers are maintained by different ministries and they are based on different software solutions, their immediate compatibility as regards maps and databases leaves to be desired.

Cadastral register

Basis for establishing: Land Cadastre Act (RT I 94, 74, 1324).

Registrar: Land Board, county land registers.

Graphic content: cadastral units as polygons (distinguishing between different land use types) and boundary points marked as points.

Road register

Basis for establishing: Regulation No 294 of the GR establishing the road registers (RT 1992, 42, 560).

Registrar: Estonian Road Administration.

Basis for the map: 1:50 000 Estonian base map, whose topology was improved by the Estonian Map Centre as regards motorways, national roads and local roads (the classification used in the base map).

Register of mineral resources

Basis for establishing: Statutes of the state mineral resources cadastral register (RT I 1995, 22, 329).

Registrar: Information and Mineral Resources Department of the Geological Survey of Estonia.

Basis for the map: 1:10 000 cadastral map, to which the plan of the deposit is transferred, since it cannot be linked with the coordinates by itself. No new field mapping has been conducted.

Graphic content: Plan of the deposit, containing as polygons the consumption deposits, reserve deposits and possible deposits, extracting permit areas (in the case of construction materials) and extraction areas (in case of peat and mud deposits).

Nature conservation register

Basis for establishing: Statutes of nature conservation register (RT I 1996, 32, 635).

Registrar: Nature Conservation Department of the MoE.

Basis for the map: 1: 10 000 raster cadastral map

State register for the accounting of forest resource

Basis for establishing: Forest Act, (RT I 1998, 113/114, 1872; 1999, 54, 583).

Registrar: MoE

The state register for the accounting of forest resource is maintained as a central register and county register. The following data are entered into the register: a digital forest map indicating the location of the subject matter of the register; survey descriptions of the subject matter of the register and any restrictions imposed on forest management.

Status: the register was to be operational by 1 January 2002 but it is still not fully operational.

Database of forests

Registrar: Estonian Forest Survey Centre, upon the order of the Forestry Board, forest districts etc.

Basis of the map: aerial photographs taken specially for forest maps, i.e. in summer, forest stand plans and other maps. Proper ground cover maps exist only for state forests, with 99% of forests represented on maps in paper format.

Map database: the number of the stand is used to link the map and the database.

Status: The state forests have been using the Topos programme since 1995, but not in all forest districts. Private forests usually have a separate map and data only in paper format or even if the map is created electronically, it may happen that it is not linked with the coordinates and as such not immediately compatible with the GIS software.

Environmental register

The Environmental Register Act (RT I, 2002, 58, 361) serves as the basis for the register. The register is implemented gradually: 2003–2007. The parts that are important for soil protection are implemented at a later stage: indicators of soil quality and data characterising changes in the state of the soil start to be entered in the register from 2005 and data into the list of forest management units only in 2007.

The MoE is the chief processor of the environmental register.

The environmental register is composed of an electronic database entered on registry cards; a ledger for recording the release of data, maintained on paper and electronic data media; the registry archives. The environmental register is a general national register. Data regarding the state of the environment shall enable (§ 27) a comparison to be made of the actual state of the environment with the permitted limit values, target indicators characterising the planned state of the environment and any international obligations assumed; and the critical and used volumes of a natural resource to be determined and forecast. Records of natural resources (§ 8) fail to mention soils. Thus the database related to the soils (e.g. monitoring data) qualifies as "maintenance of other state databases" (§2, (2) 7)). There is a certain conflict between the Environmental Register Act (§8) and the Environmental Monitoring Programme (§29 (1) 5)), the latter stating that the indicators of soil quality and data characterising changes in the state of soils must be recorded.

Field register

The Regulation of the Minister of Agriculture establishing the procedure for the determination of boundary points of agricultural parcels, preparation of maps of agricultural parcels, assignment of numeric codes to agricultural parcels and determination of the areas of agricultural parcels (RTL, 17.09.2003) entered into force in September 2003. The objective of the regulation is to organise and disclose the maps of agricultural parcels as a part of the register of agricultural parcels, which serves as a basis for administering the support under the EU Common Agricultural Policy. The Agricultural Registers and Information Board (ARIB) prepare the maps of agricultural parcels, organises the determination of boundary points and areas of agricultural parcels and assigns numeric codes to them. There are four different ways of searching the maps of agricultural parcels: by the commercial register code; by the name of the company; by the number of the agricultural parcel; or general search, if the correct number of the parcel is not known.

It is important to determine the fields located in agricultural parcels as at 2002, in order to be able to use the direct aid or additional direct payments with respect to arable crops as prescribed by Council Regulation (EC) No 1251/1999 after accession.

The same data are necessary as at 2003 in order to apply the common area-related aid after accession. Estonia is eligible for this support pursuant to the Accession Treaty.

Register of land improvement systems

The register of land improvement systems is a state register which is established by the GR on the proposal of the Minister of Agriculture pursuant to the procedure provided for in the Databases Act, on the basis of the Land Improvement Act (RT I, 2003, 15, 84). It enters into force on 1 July 2004. The chief processor of the register of land improvement systems is the MoA. Information held in the register of land improvement systems is informative and statistical in nature. The aim of maintaining a register of land improvement systems is to keep record of land improvement systems being built and in service. The information held in the register of land improvement systems is public and shall be published on the website of the Land Improvement Bureau of Supervision and Expertise (LIBSE). Interbase cross-usage of data shall be conducted between the register of land improvement systems, the commercial register, the land cadastre, the land register, the register of construction works, the register of agricultural support and agricultural parcels, the register of undertakings operating in a field of land improvement and other registers.

In addition to the above register there are several other databases, like the hydrogeological map of Estonia maintained by the Geological Survey of Estonia and containing information about bed rock aquifers, karst areas, regions of intensive groundwater consumption etc. The EEIC at the MoE maintains the database of rivers and lakes. The Geological Survey of Estonia maintains the map of the Estonian Quaternary deposits, which has information about types and location of sediments.

The EEIC at the MoE maintains the database of deposits and mines; however, the latter is not used because it is not linked with the register of mineral resources. The MoE Nature Conservation Department has a database of wetlands. The IoG of the UT maintains the map of landscape unit types. The MoE placed an order for the CORINE landcover map, it was prepared by the Estonian Map Centre and contains information about different vegetation units, based on pan-European classification. The Estonian Environment Information Centre at the MoE maintains the catchments map.

The Land Board maintains a large-scale digital soil map, and the MoE keeps the archive of its database. In addition to geographical distribution of the soils it also contains data about their structure, state as regards water, mechanical composition, chemical indicators, current state and fertility. SOVEUR (Soil Degradation Status and Vulnerability Assessment for Central and Eastern Europe) has information about the degradation of soils. European Soil Bureau administers a digital map and database of Estonian soils: Soil Geographical Data Base of Europe at Scale 1: 1 000 000, prepared on the basis of the FAO-1990 nomenclature. The Estonian agrochemical maps are taken care of by the Agricultural Research Centre, an agency in the administrative area of the MoA.

Since 1957 and 1965 the Republican Laboratory of Agrochemistry has been preparing maps of Estonian arable soils for the content of P, K, Ca, Mg and maps of micro-fertilizer demand for Cu, B and Mn. There are also maps of lime demand and humus content for arable lands. In 1990 the sixth round of determining the fertilizer demand commenced. Within this framework a supplementary project was undertaken to prepare a map for Pb and Cd content for the Ida-Viru County. In 2002 the Agricultural Research Centre started the seventh round and based on digital maps a database characterizing the state of arable soils has been prepared as well.

The Geochemical Atlas of the Humus Horizon of Estonian Soils contains maps of the B, Ba, Be, Ca, Cd, Co, Cr, Cu, F, Fe, Hg, K, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Sc, Sn, Sr, Th, U, V, Y, Zn, Zr content of the humus horizon of soils, types of soils and its sources as well as maps of concentration coefficients of the associations of some elements. The maps were produced on the basis of analysing close to 1550 samples of the humus horizon in Estonia. The scale is 1:1 200 000. The maps and the explanations provide an overview of the level of chemical element concentrations in the humus horizon of Estonian soils and its differences in comparison with the average soil, the content of chemical elements and the main regularities of their distribution in the principal soil types, as well as the chemical differences of the soil types. Pb poses problems among the heavy metals, because its average concentration is almost 1.6 times higher than the soil Clarke. The concentrations of Ca, Fe, K, Mg, Mo, Pb, U and other elements had considerably increased in fields where liming with oil shale fly ash had taken place.

6. Financing

Estonia has not ratified the Convention to Combat Desertification and thus there are no direct costs related to implementing the convention. However, the general environmental commitments prescribed in the convention coincide to a large extent with similar requirements set out in other laws. Therefore the relevant commitments are carried out and are funded by the parties who have these obligations pursuant to these laws.

The ministries cover the main costs related to the development plans, programmes, monitoring and research. The legal and natural persons engaged in production activities will usually cover the costs of preventing and liquidating pollution and soil degradation (e.g. recultivation).

In 2001 the rural municipality and city councils spent 183 million EEK (0.19% of GDP) on environmental protection. The main expenditure items were waste water treatment (44%) and waste handling (36%), protection of surface and ground water (11%) and protection of biological diversity (4%). 49% of all funds were used for investments.

The government's expenditure on the protection of soil and surface and ground water amounted to 8.4 million EEK in 2001 (2% of the total environmental expenditure).

7. Stakeholders

The Convention to Combat Desertification has not been ratified in Estonia, but most of its principal provisions are found in the various Estonian environmental laws. Most of the supervisory and co-ordination tasks related to the convention have been delegated to government agencies.

The term "desertification" as it appears in the title of the convention seems to point to deserts, an issue not terribly important in Estonia, so there is little interest among the general public and agricultural circles in the convention and research institutions are the principal stakeholders.

The clauses of Annex V of the Convention to Combat Desertification, dealing with fertility of soil, soil degradation, agrotechnology, research, action plans and increasing awareness, are important for Estonia. Implementation of the provisions of the convention through the collection, analysis and exchange of information, research and technology transfer would contribute to closer contacts between the agricultural producers, research institutions and local governments.

The UN Aarhus Convention (1998) emphasises public participation in discussing development plans and environmental matters. This is not so well organised in the Estonian society. International agreements and strategies are primarily aimed at the policy formation process and the public attitude is quite passive with this respect.

The Convention to Combat Desertification has many different and ambiguous goals (protection of soil and water, socio-economic objectives, education, research, financial aid), which is likely to be detrimental to their successful implementation. Given Estonia's climatic conditions the general objectives of the Convention to Combat Desertification with respect to soils are mostly of medium or low priority. Therefore it is equally unlikely that the general public, economic and scientific stakeholders would be ready to contribute too much more by way of investment towards implementing the provisions of the convention.

The activities of the organisations and entities listed in Annex II of this document are related to achieving the objectives of the convention. The largest stakeholder group is made up of agricultural producers. They may gain from implementing the long-term integrated strategies, given the improvement in agrotechnology and increasing awareness, which leads to higher productivity of land and reduced economic and environmental risks. Research institutions play a crucial role in increasing awareness, for after ratification of the convention they can become more involved in the work of international working groups. The downturn in agriculture in general has also reflected negatively on agricultural science and its current poor international standing. In 1999–2000 a broad-based commission of agricultural scientists prepared the Estonian Agricultural Science Development Strategy and Action Plan and submitted the document to the MoA. The document emphasises among the

strengths of the Estonian agricultural science the existence of domestic animal and plant breeding. The need to preserve the quality of our living environment and natural resources unique for Estonia has been listed among the objectives of the document. The indigenous varieties are likely to be best adjusted to the Estonian climate and soil conditions and as such ought to mitigate any environmental and health risks.

Under the convention developed country parties are also expected, to the extent possible, to support developing countries suffering from desertification on the basis of partnership agreements. Given the chronic scarcity of resources for resolving domestic environmental and socio-economic issues, Estonia's possibilities for helping the partners under the convention are probably quite limited.

8. Public awareness

Public awareness with respect to the Convention to Combat Desertification is fairly modest, since as a global problem desertification is not so high on the agenda, given Estonia's local conditions. The main connection is related to cases of global drought covered by the media. The public has a better understanding of soil degradation, because the effects of the transition economy in this area are well visible (lands overgrown with shrubs, flooded areas). Although the Estonian academic circles have constantly emphasised the need to protect the soils, public awareness is slow to develop. People also seem to have developed the idea that soil science is just a part of agriculture and fail to see its vital implications as a component of the land ecosystem. They cannot see the impact of human activities on soil and they regard damage to soil as an aesthetic problem rather than something that relates to the environment. The organisers of the Soil Campaign, an international effort against soil degradation, experienced similar attitudes. The campaign was launched in 1995 and is carried out with the support of the Charles Leopold Mayer Foundation for the Progress of Humankind.

In awareness-building the various subjects should be dealt with in an integrated manner aiming at increasing general environmental awareness (SE21 Strategy). At first glance things seem to be going well: the electronic media and periodicals cover environmental events and action plans do exist as well. However, it seems as if the average environmental awareness increases on account of the members of the society who already are "aware" and not on account of winning over those who are "not aware".

The Estonian National Environmental Action Plan is the 1998–2003 project of the MoE and the EU PHARE Programme. Its objectives are aimed at promoting environmental awareness and the teaching of nature conservation, but touch only briefly on the subject of soils.

The curriculum of Estonian basic education undergoes constant revising. The 1996 curriculum was replaced by the new National Curriculum for Estonian Basic and General Secondary Education (RT I 2002, 20, 116) adopted in 2002. Pursuant to this curriculum one of the objectives of the schools is to ensure that a student "preserves the nature, and lives and acts by preserving the environment and natural resources" (§4).

The underlying mandatory themes of the curriculum are the following: (§10):
the environment and sustainable development;
work-related career and its design;
information technology and media;
Security.

On the upper secondary school level the share of geography has been increased and now it is possible to take a state examination in geography as well. However, there was no geography textbook for the upper secondary school level until the end of 2003. The compilers of the national curriculum are of the opinion that as a framework curriculum the national curriculum allows the schools more freedom to develop their own curricula by taking into account the local conditions. There are very few good textbooks for natural sciences, mostly they tend to be just collections of facts and terms and set out every subject separately, without allowing the students to see the big picture of nature. In addition to textbooks there is a need for other study aids and teacher's books as well. A survey of study aids conducted from March to June 2003 among general education schools in co-operation with the local governments showed that the handicrafts, arts, life sciences, physics and chemistry are hit the worst as regards study aids.

The new education paradigm seems to be high on the agenda: there is more and more talk about integrating subject syllabuses and the need for life-long learning in a rapidly changing society. The education quality of schools is judged, unjustifiably, only on the basis of the numbers of students going on to acquire higher education, thus developing inadequate values in the society. There is still much to be done in horizontal linking of the different subjects. This is a task to be accomplished by members of the National Subject Councils, Institute of Educational Research of the TPU, Curriculum Development Centre of the UT, MoER and the National Examination and Qualification Centre. The soil as a model of the ecosystem should be linked for teaching purposes with biology (growing and nutrition of plants, soil biota), with geology (crumbling, geochemical cycle), hydrology, chemistry (pH), physics (density, porosity) etc.

The participation of Estonian general education schools in the international Internet-based education and research programme GLOBE (Global Learning and Observations to Benefit the Environment) is a positive example of informal environmental education. The 1996 joint agreement between Estonia and the USA serves as a basis for the programme. Within the framework of the programme the students carry out regular observations and measurements in precise geographical locations near their schools. 35 schools, ca 50 teachers and 800 students are participating in the Estonian programme. By the end of 2000 we had sent more than 160 000 measurement results to the global database of environmental data, which ranks Estonia 7th among the 96 GLOBE states. The GLOBE programme has helped increase environmental awareness among students and teachers; they have developed their IT skills and have had opportunities for intensive international communication. The soil data include moisture content, chemical indicators and a description of the profile.

The share of environmental courses in the 3+2 curricula of institutions of higher education based on the Bologna Conventions is extremely uneven, especially on graduate level. There are no environmental courses in the chemistry and environmental protection technology curriculum of the TUT, in the environmental and applied biology curriculum and public administration curriculum of the UT, on the graduate level: in the forestry curriculum of the EAU, in the curriculum of botany and ecology and the curriculum of public administration in the UT. The following curricula contain a large share of environmental courses: the geology and geography curriculum of the UT, the curriculum of the Türi College (33%) and the environmental management, landscape protection and maintenance, and the use and protection of natural resources curriculum of the EAU (20%). The teacher training curriculum, especially on the graduate level, also has too few environmental courses (for teacher of geography in the TPU).

There are 14 vocational educational institutions in Estonia, which teach some form of rural management and prepare specialists for agriculture as well. The MoA Bureau of Research, Education and Extension conducted a survey about agricultural and rural vocational education. According to the survey 58 (19.7%) of the participating 294 farms had no one in the family with professional agricultural education. Currently about 300 future agricultural specialists are studying in vocational schools, but the yearly need is for 500 trained farmers. Although a document establishing the development trends for vocational education for 2001-2002 exists in Estonia, it says little about education in soil matters. The joint Estonian-Danish project was launched by the MoA in 2000: "Development of Agricultural Education and Continuing Training in Estonia". From this project emerged guidelines for preparing the Development Plan for Agricultural Education. Little is known of the fate of this document. The objectives of the Development Strategy of Estonian Agriculture for 2000–2003, i.e. until accession to the EU, include within the agri-environment programme the development of an action plan for training and demonstration projects. The plan includes information and training days for farmers participating in the agri-environment programme, in order to increase their environmental awareness and provide to them technical knowledge that would help them apply the agri-environment programme measures more efficiently; information and training is also offered to co-ordinators, advisors, controllers, trainers and monitoring agents participating in the agri-environment programme, in order to increase their competence and thus contribute to the implementation of the programme; there will be demonstration projects (demonstration farms), to introduce technologies and measures through practice. The development of the information portal www.pikk.ee and the information distribution system with a co-ordinating centre and county centres are also among the positive results of the programme.

9. Outlook for implementation of convention

The tasks provided for in the Convention to Combat Desertification are mostly written into Estonian legislation and joining the convention would therefore not mean too many more obligations as regards general environmental protection. Annex V though, could give a stronger legislative basis for the development of agriculture and for general problems related to the protection of soils.

Soil is a natural resource with no immediate transboundary effect; therefore considerably less attention is paid to soil protection both in international and domestic terms in comparison with air or water protection. On the other hand, the area of unspoiled soil, an indispensable component of the food chain, is decreasing in the world and through the issues of feed or food quality, soils are bound to gain more importance both in national and international terms in the near future.

The adoption of the EU Soil Directive is scheduled to be adopted in May 2004. The Estonian legislation must follow the provisions of the directive and the Estonian Soils Act would have to be adopted thereafter. The latter must reflect and regulate the issues of local soil protection as well. Then it is possible to give a final assessment to the feasibility of joining the Convention to Combat Desertification and decide whether Estonia joins the convention independently or via the EU.

Implementation of the Convention to Combat Desertification means considerable expenditure. Among those costs the fee for joining the convention is negligible (the annual fee is approximately 1500 US dollars). Regular participation in conferences and preparation of annual reports require a larger budget. At present nothing regulates the preparation of the annual reports due under the convention, because the current legislation does not prescribe regular integrated reporting with respect to soils and the related environmental and socio-economic issues. The registers do not reflect soils information directly and there is no database about changes in soils. Most of the existing information about soils is static, just describing the state of soils as at a certain moment.

In order to be able to gather the information necessary for the annual report, funding for soil protection research should be stepped up. Supervision over performance of the duties that are prescribed in the current legislation should also be improved (i.e. monitoring of development plans and programmes). Otherwise we would not be able to implement the convention in a sustainable manner.

ANNEX 2. Priority issues of implementing the Rio Conventions in Estonia

2. A Priority issues of implementing the Convention on Biological Diversity

Scale of problem (global, national, local); Level of concern (high, medium, low); Priority ranking on a scale of 1-3 (3-the most severe issue; 2-less severe issue; 1-the least severe issue)

	Priority Issue	Scale of problem	Level of concern	Ranking
General	Integration of biological diversity aspects into sectoral policies (CBD Art 6 b) is insufficient	national	high	3
	Financial resources allocated for carrying out the obligations arising from the Convention on Biological Diversity are insufficient	national	high	3
	Biological diversity related information necessary for competent decision-making is insufficient	global, national, local	high	3
	Monitoring of biological diversity components is insufficient for making efficient assessments of trends and controlling management decisions	global, national, local	high	3
	The levels of knowledge and skills needed for managing the biological diversity process are insufficient, especially on the local and county levels and cross-sectorally	national, local	high	3
	The national programme of implementing the biological diversity strategy and action plan has not been launched successfully	national	high	3
Education	The biological diversity information network has not been launched successfully	national	high	3
	Little has been done to teach biological diversity as part of the higher educational system	national	high	2
	Poor nature awareness of the media	national	medium	3
	There is no mechanism for funding long-term scientific research into biological diversity	national	high	3
	Reduced knowledge of nature, incl. the species, among teachers of basic schools and the whole population	national	high	2
	There is no national system for nature houses and environmental education centres	national	medium	2
Agriculture and Planning	Insufficient preservation of traditional communities and landscapes	national, local	high	3
	Insufficient development of organic farming	national, local	medium	3
	Insufficient integration of biological and landscape diversity into land readjustment plans and other plans	national, local	high	3

Forestry	Insufficient protection of primeval forests	global, national, local	high	3
	Insufficient protection of biological diversity in forest use; limited implementation of the sustainable forestry model	national, local	high	3
Fisheries and water	Exploitation of natural fish resources with little regard to sustaining the biological diversity of water bodies	global, national, local	medium	2
	Underestimating the environmental pollution accompanying fish farming	national, local	medium	2
	Insufficient protection of threatened fish species and populations	global, national, local	high	3
	The county environmental services have insufficient competence for implementing the EU Water Framework Directive	national, local	medium	2
Energy, industry and transport	The critical renewable resources have in the most part not been determined	national	high	3
	Insufficient reduction of the negative environmental impact of the energy sector	global, national, local	high	3
	Insufficient development of small-scale industries to support protection of traditional communities and landscapes	national, local	medium	1
	Insufficient reduction of the negative environmental impact of the transport infrastructure	national, local	medium	2
	Insufficient replacement of environmentally hazardous modes of transport with environmentally friendly modes of transport	national	medium	2
Genetic resources	Insufficient preservation of genetic resources of Estonian origin, insufficient protection and sustainable use of animal and plant species	national	high	2
	Insufficient funding of the National Programme of Biological Collections	national	medium	1

2B Priority issues of implementing the Convention on Climate Change

Priority Issue	Scale of problem	Level of concern	Ranking
Poor standardisation and co-ordination in developing various national programmes and strategies and insufficient follow-up on implementation	national	high	3
Preparation of national development plans/programmes/strategies is too politicised but insufficiently funded	national	high	3
Weakness of the convention in regulating economic development	global	high	3
No clear division of responsibilities on national documents	national	high	3
Poor co-operation between state agencies in matters concerning the convention	national	medium	3
Vagueness and excess subjectivity of the Environmental Impact Assessment and Environment Audit Act (SG I 2002, 99, 579) in determining the implementing parameters	national	high	3
There is no national register of greenhouse gas emissions and no national system of assessing the emissions	national	high	3
Creating awareness among the general public about the principles of implementing the convention has been insufficient and difficult to understand by the general public	national	medium	2
Insufficient information about the possibilities of the implementing mechanisms of the convention, e.g. emissions trading	national	medium	2
Insufficient role of issues dedicated to climate change in national curricula	national	low	2
Insufficient funding of scientific research on climate change and circulation of greenhouse gases	national	medium	2
NGOs and occupational associations are not sufficiently involved in resolving issues pertaining to climate change	national	low	2
Poor state budget funding for performing the commitments undertaken under the Convention on Climate Change (annual inventories, national reports etc)	national	medium	1
Poor co-operation and division of responsibilities between the GR and the Parliamentary Commissions in crucial state matters (e.g. development plans to direct the developments in power engineering)	national	low	0
Poor legislative supervision over the implementation of the convention	national	low	0

General

Energy, industry and transport					
Poor level of developing energy, industry and transport technologies that would lead to the implementation of the convention	national	high		2	
Awareness of the general public of the environmental scope and impact of the energy, industry and transport sector is insufficient	global	high		2	
The system of pollution charges and environmental taxation in Estonia to date is not rational and has not been aimed at reducing the impact of the energy sector on the environment	national	high		2	
The state has failed to take a decision concerning the sustainability and future role of the oil shale chemical industry in the energy sector	national/local	medium		2	
There is no body in Estonia which is engaged in the efficiency of the local energy sector and purposeful directing thereof (Energy Agency)	national	medium		2	
There are no clear criteria for evaluating the oil shale energy resources, which is crucial for forecasting the specific developments in the energy sector	national	low		2	
The structure of the Estonian electricity system and nature of its capacity is not conducive to de-centralised generation of power	national	high		2	
Export volumes and pricing of biofuels (woodpellets) have not been regulated on the national level	national	medium		3	
The transport system is inefficient and the reputation of public transportation is poor, there is no concept of development deriving from the Convention on Climate Change	national/ global	medium		3	
Nationwide control over the growing number of vehicles is insufficient	national/ global	medium		3	
The distribution of energy consumption between households and the industrial sector is insufficiently reflected in the national statistics	national/local	low		3	
Too few economic experts are involved in the process of establishing protected areas (e.g. the Energy Department of the MoEAC)	national/local	medium		3	
Insufficient regionalisation of oil shale deposits on a common technological, economic and environmental basis	national	medium		3	
The Renewable Energy Development Programme has not been adopted on the national level	national/local	medium		3	
There is no specialisation in renewable energy in the higher education system, the aspects of energy efficiency and sustainable development are not sufficiently represented in the energy, industry and transport related curricula	national	medium		3	
There is no clearly defined long-term development plan for the industry	national	medium		3	
Poor integration between the national energy sector development plans and the county, local government and city energy sector development plans	local/national	low		3	
Insufficient information about the number of electricity consuming appliances and the acquisition of new appliances	national/local	low		3	
The energy sector scientists are not participating enough in international programmes and projects	national	low		3	

Agriculture	Insufficient national support to developing organic farming	national/local	medium	2
	The procedure of applying for support is too bureaucratic for agricultural producers	national/local	low	3
	As a result of intensive farming more mineral fertilisers are used and subsequently greenhouse gas emissions increase	National/local	low	3
Waste management	There is no optimal technology for recovery or depositing of semicoke and produce gas generated by the shale oil industry using the Kiviter-technology	national	high	3
	Insufficient amounts of methane gas is collected in the landfills	national	medium	3
	The limited number or complete lack of containers reduces the possibilities of waste sorting; people have no financial incentives to sort their waste	local	medium	3
	The general public has little awareness of the environmental impact of waste management	national/global	medium	2
	The efficiency of control in forestry is insufficient. The problems include failure to carry out the obligations prescribed by law (incorrect cutting methods, reckless logging); failure to put a stop to forest theft	national	high	2
Forestry	Private forest owners are not highly motivated to carry out reforestation works, there is not enough support for buying plants, regeneration, maintenance etc	national	high	2
	Forest inventories and statistics are insufficient and not standardised	national	low	3
	There are no national limit rates for forest use that would ensure a natural balance and regeneration, observance of protective regimes and preservation of biological and landscape diversity	national/global	medium	3
	The share of regeneration cutting is insufficient	national/local	low	3

2C Priority issues of implementing Convention to Combat Desertification

Priority Issue	Scale of problem	Level of concern	Ranking
Due to worsening socio-economic conditions in the rural areas soil fertility has deteriorated	national	high	3
Soil is not clearly defined as a natural resource, legislative texts treat soil as a general term only, failing to take into account its properties, resilience and importance to the ecosystem.	national	high	3
Limit rates have been established for hazardous substances in water and in the air, but not in soil. The properties of the soil have not been taken into account when determining pollution rates and environmental restrictions	national	high	3
The compatibility of and access to data in national registers and databases is insufficient, they are not user friendly and new data are entered with long delays	national	high	3
The approach to soil is too superficial, the type specific properties (i.e. grouping of soils on the basis of their sensitivity to external influences) of soils are not taken into account, awareness is low	national	high	3
The subjects dealt with by the Environmental Impact Assessment and Environment Audit Act and the Environment Supervision Act do not fully coincide and there is gap between them	national	high	3
The quality of life in the rural areas is worsening and important landscape values are disappearing	national	high	3
Unjustified increase in physical degradation of soil resulting from the spread of man-made environments, mining areas and constructions in suburban areas, on coastlines and near highways	national	medium	2
The quality of life in the rural areas is worsening as a result of disappearing or distancing of schools kindergartens, cultural and service establishments	global	high	3
Difficulties in marketing agricultural products (overproduction, double tariffs, export quota)	global	high	3
Pressure to build in the green areas of cities and on the seashore changes irreversibly the intended purpose of use of the land, generates waste, destroys vulnerable ecosystems and increases the threat of pollution	global	medium	3
Fertile arable land has fallen out of use, overgrown with weeds and shrubs	national	high	3
Draining systems have fallen into disrepair and swamping of lands has occurred in private hands due to the high investment burdens associated with the upkeep and because the borders of the private lands do not coincide with the borders of the former drainage objects	national	high	3
Inadequate and excessive use of pesticides and other plant protection products has led to local pollution of soils	national	high	2

Agriculture and land use	Change in the value of land and change of landscapes, hinterlandisation. The country youth leaving for cities, shrinking the local government tax base	national	medium	3
	The use of heavy machinery, wrong timing and inaccurate methods of agrotechnology have resulted in impoverished soil life and compaction of soils	national	medium	2
	The slow pace of the land reform and privatisation process have created a secondary land market, as a result lands have fallen into disuse (i.e. their cultural condition has deteriorated, the intended purpose of their use has been changed etc)	national	low	1
	Growing monocultures and inadequate use of fertilizers has completely worn out ploughed lands in some locations	local	medium	3
	Wrong timing of land cultivation, inaccurate methods of agrotechnology and failure to use crop rotation due to the reduction of the share of animal farming (low demand for grasslands) has resulted in erosion by water and wind on ploughed lands	local	low	1
	Most of the soils in the mining areas have been destroyed, recultivation and developing alternative uses has been insufficient	local	medium	3
	Road-building and construction has resulted in destruction of soil and changes in the water regime	local	low	2
	Local industry, transport, agriculture and air pollution has caused soil pollution in some locations	local	medium	2
	Soils are polluted with heavy metals (near highways, airfields and industrial areas), alkaline pollution and past pollution. Residual products from depositing waste rock and oil shale waste have polluted surface water and soils	local	low	2
	Wrong timing and use of inadequate technology results in forest soil deterioration	national	high	3
Forestry	Delays in getting the forest register operational favour illegal logging and result in more damage to forest soils	national	high	3
	The production capacity of soils where spontaneous forestation takes place, especially after clear cutting (incl. the binding of CO2) has not been put to optimal use due to inadequate planting	national	medium	3
	More frequent droughts resulting from climate change and the increased human load on forest lands in summer had lead to more forest fires	local	medium	1
	Change in the value of land and change of landscapes, hinterlandisation. The country youth leaving for cities, shrinking the local government tax base	national	medium	2
Industry, energy and transport				

ANNEX 3. Capacity constraints to implementation of Rio environmental conventions in Estonia.

3A Capacity constraints to implementation of the Convention on Biological Diversity.

Priority Issues	Systemic Constraints	Institutional Constraints	Individual Constraints
Integration of biological diversity aspects into sectoral policies (CBD Art 6 b) is insufficient	Legislation not sufficiently harmonised between sectors, low interoperability, actual co-operation between institutions insufficient	The institutions are insufficiently motivated for co-operation, the infrastructures are inflexible and the institutions are not thoroughly adequately aware of their role in the process of biological diversity	Sometimes employees have inadequate qualifications and have low motivation for co-operation
Financial resources allocated for carrying out the obligations arising from the Convention on Biological Diversity are insufficient	The national policies are environmentally friendly only partly and on a declarative level. Framework laws supporting the environment, incl. biological diversity (e.g. Sustainable Development Act) has not been implemented. Estonia has not developed a climate that would favour private investment in areas related to the protection of biological diversity	These are primarily strategic constraints – the institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity; in part there are also constraints as regards institutional processes, e.g. planning, follow-up, monitoring etc are not carried out effectively	Access to information concerning biological diversity plays a certain role, on the other hand the openness and availability of employees may cause problems – one could say, that exchange of important information with the opposite numbers in other institutions is inadequate
Biological diversity related information necessary for competent decision-making, is insufficient	No implementation acts have been adopted on the basis of the framework laws supporting biological diversity, i.e. these acts would serve as a systematic basis for arranging the relevant information into proper order	Insufficient interoperability of the sectors (e.g. science-education and the environment sector) is a problem; the institutions are lacking clearly defined tasks and mandates for carrying out the developments to address information issues of biological diversity	Decisive factors here could include the not always adequate values, attitudes and motivation of the employees, which serve as obstacles to the transition from an indirect and subjective decision-making process to one that is based on facts
Monitoring of biological diversity components is insufficient for making efficient assessments of trends and controlling management decisions	The problems here contain a conceptual aspect – developing effective and representative indicators is a difficult intellectual task and resources are scarce for resolving this task.	The obstacles include almost all aspects and levels of inter-institutional co-operation – relations between states, organisations, sectors and management levels. The state/local government lacks sufficient resources (human, financial, information related resources)	Insufficient openness and lack of co-operation spirit among employees; problems with values, attitudes and motivation
The levels of knowledge and skills needed for managing the biological diversity process are insufficient, especially on the local and county levels and cross-sectorally	The underlying problem here is the novelty of the concept of biological diversity	The higher priority assigned to the “grey” environment sector as opposed to the “green” environment sector could serve as a major institutional obstacle here, therefore the “green” sector fails in the competition for equal attention and resources	Shortcomings in employees' qualifications: a lack of specific skills and experience; employees with more initiative have moved to the more rewarding private sector
The national programme of implementing the biological diversity strategy and action plan has not been launched successfully	Both the environmental policy and the relevant development plans of the sectors are biological diversity-friendly only partly and rather declaratively	The institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity	The employees have problems with values, attitudes and motivation

General

Education	<p>The biological diversity information network has not been launched successfully</p> <p>Little has been done to teach biological diversity as part of the higher educational system</p> <p>Poor nature awareness of the media</p> <p>There is no mechanism for funding long-term scientific research in biological diversity</p> <p>Reduced knowledge of nature, incl. the species, among teachers of basic schools and the whole population</p> <p>There is no national system for nature houses and environmental education centres</p>	<p>The underlying problem here is the novelty of the concept of information network</p> <p>The education related development plans are biological diversity-friendly only partly and rather declaratively</p> <p>The underlying problem here on the one hand is insufficient nature awareness, on the other hand the novelty of the concept of biological diversity. Human beings are not seen as part of or dependent on the ecosystem</p> <p>So far the scientific research policies have not ranked biological diversity as a priority</p> <p>The education related development plans fail to emphasise the need to learn to know the nature</p>	<p>So far the institutions are lacking clearly defined tasks and mandates for building the information network</p> <p>The institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity</p> <p>Institutions are not aware of their role in the process</p> <p>The relevant development plan does not exist and there are no defined tasks and mandates for action</p> <p>The relevant development plan does not exist and there are no defined tasks and mandates for action</p> <p>The institutions have no clearly defined tasks and mandates for action in order to promote environmental education, especially across the sectors (Ministries of Education and Environment)</p>	<p>Shortcomings in employees' qualifications; a lack of specific skills and experience</p> <p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with values, attitudes and motivation, e.g. they do not perceive nature as something that touches on our common values but rather as something of interest to a limited group of stakeholders</p> <p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with values, attitudes and motivation</p> <p>Insufficient openness and lack of co-operation spirit among employees</p> <p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with awareness, values, attitudes and motivation</p> <p>The employees have problems with values, attitudes and motivation</p>
Agriculture and planning	<p>Insufficient preservation of traditional communities and landscapes</p> <p>Insufficient development of organic farming</p> <p>Insufficient integration of biological and landscape diversity into land readjustment plans and other plans</p>	<p>Apparently the underlying problem here is the novelty of the concept of traditional communities and landscapes; but also that this is an area that is not economically rewarding</p> <p>The national policies are biological diversity-friendly only partly and rather declaratively, no implementation acts have been adopted on the basis of the framework laws supporting biological diversity. Estonia has not developed a climate that would favour private investment in areas related to the protection of biological diversity</p> <p>Legislation not sufficiently harmonised between sectors, low interoperability, actual co-operation between institutions insufficient</p>	<p>Insufficient interoperability of the sectors (agriculture and environment); the institutions have no clearly defined tasks and mandates for action in this area</p> <p>The institutions have no clearly defined strategic objectives</p> <p>The problems include insufficient interoperability of the sectors (planning, forestry, agriculture and environment); the institutions have no clearly defined tasks and mandates for action in this area</p>	<p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with awareness, values, attitudes and motivation</p> <p>The employees have problems with values, attitudes and motivation</p>

Forestry	Insufficient protection of primeval forests	The underlying problem here is the novelty of the concept and the fact that it is seen as economically not rewarding by the general public	Institutions are not aware of their role in the process of biological diversity, are insufficiently motivated for co-operation, have inflexible structures and fail to involve the private sector	Insufficient general education in nature, limitations in professional qualifications, a lack of the necessary skills and experience
	Insufficient protection of biological diversity in forest use; limited implementation of the sustainable forestry model	Legislation not sufficiently harmonised between sectors, low interoperability, actual co-operation between institutions insufficient	The problems include insufficient interoperability of the sectors (forestry and environment), there are economic interests; the institutions have no clearly defined tasks and mandates for action in this area	Insufficient general education in nature, limitations in professional qualifications, a lack of the necessary skills and experience
	Exploitation of natural fish resources with little regard to sustaining the biological diversity of water bodies	The poor living standards and high unemployment rate among the coastal population lead to overfishing and poaching	The use of natural fish resources comes under the competence of the MoE, thus leading to sustainable regulation of the area	Insufficient general education in nature, limitations in professional qualifications, a lack of the necessary skills and experience
Fisheries and water	Underestimating the environmental pollution accompanying fish farming	Currently there is no large-scale fish farming in Estonia. The lack of veterinary control over the restocking material used by the small fish farms may cause problems	Fish farming comes under the area of administration of the MoA. If fish farming were transferred to the area of administration of the MoE, it would be easier to impose and follow-up on sustainable measures in this area	The low professional qualifications and values of the staff of the small fish farms could be an obstacle
	Insufficient protection of threatened fish species and populations	The spawning grounds of most of the threatened fish populations in Estonia are in the rivers. The current active and uncontrolled process of building dams on rivers means that the migration paths of fish are being disrupted.	Management of sectors interested in using watercourses (fishing, tourism, power engineering) occurs through different ministries. Too few of the habitats important for fish are situated in protected areas	The nature conservation agencies have no practical experience in protecting fish fauna
	The county environmental services have insufficient competence for implementing the EU Water Framework Directive	The key issue here relates to the complexity of integrating the areas that have been dealt with quite separately from each other to date	The success of county environmental services depends on excellent co-operation with many other institutions. Coordination and integration is difficult	Problems may arise from the fact that the experts in traditional use of water may not be accustomed to accepting experts in aquatic biota as equal partners
Industry, energy and transport	The critical renewable resources have in the most part been not determined	The national policies are biological diversity-friendly only partly and rather declaratively. No implementation acts have been adopted on the basis of the framework laws supporting the environment, incl. biological diversity (e.g. Sustainable Development Act)	The institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity	Problems with access to the relevant information on biological diversity and resources, but also problems with openness and co-operation spirit of employees, especially with regard to exchange of information with their opposite numbers in other institutions
	Insufficient reduction of the negative environmental impact of the energy sector	The energy related policies are biological diversity-friendly only partly and rather declaratively	The relevant development plan does not exist and there are no defined tasks and mandates for action	The employees have problems with awareness, values, attitudes and motivation



Industry, energy and transport	Insufficient development of small-scale industries to support protection of traditional communities and landscapes	Legislation not sufficiently harmonised between sectors, low interoperability, and actual co-operation between institutions insufficient. Apparently the underlying problem here is the novelty of the concept of traditional communities and landscapes	There are obstacles in inter-institutional co-operation – on the organisational, sectoral levels and between management levels	The employees have problems with awareness, values, attitudes and motivation
	Insufficient reduction of the negative environmental impact of the transport infrastructure	Legislation not sufficiently harmonised between sectors, low interoperability, actual co-operation between institutions insufficient	The institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity	The employees have problems with awareness, values, attitudes and motivation
	Insufficient replacement of environmentally hazardous modes of transport with environmentally friendly modes of transport	The national transport policies are biological diversity-friendly only partly and rather declaratively, in practical terms the development plans do not support biological diversity	The relevant development plan does not exist and there are no defined tasks and mandates for action	The employees have problems with awareness, values, attitudes and motivation
	Insufficient preservation of genetic resources of Estonian origin, insufficient protection and sustainable use of animal and plant species	The national policies do not include implementing acts; there are some regulations pursuant to which protection can be extended to growing or raising only some species	The institutions are lacking clearly defined tasks and mandates for carrying out the developments to address issues of biological diversity	Insufficient general education in nature, some limitations as regards professional qualifications, a lack of skills and experience
	Insufficient funding of the National Programme of Biological Collections	National policies have not regarded the issue as a priority	Co-operation and co-ordination between institutions could be better	Insufficient awareness of officials and insularity of scientists
Genetic resources				

3B Capacity constraints to implementation of the Convention on Climate Change

Priority Issues	Systemic Constraints	Institutional Constraints	Individual Constraints
Poor standardisation and co-ordination in developing various national programmes and strategies and insufficient follow-up on implementation	The responsibilities of institutions are not clearly defined; co-operation between ministries, and between the state and local government levels is poor; poor connection with the state budget	Control and monitoring over implementing the programmes/strategies is lacking. Institutions are insufficiently motivated for co-operation, infrastructures are inflexible	Some duplication as regards responsibilities, there are problems with awareness, values, attitudes and motivation
Preference is given to political/short-term goals rather than to national development plans/programmes/strategies, long-term plans are insufficiently funded	The goals set out in long-term development plans/programmes/strategies are not given (sufficient) funding, they are lacking sustainability	Institutions are not sufficiently aware of their roles and are insufficiently motivated	The employees have problems with values, attitudes and motivation
Weakness of the convention in regulating economic development	The convention supports the environment but has weak implementing capacity		
No clear division of responsibilities on national documents	There is no clear division between developing policies and implementing policies on the national level. The idea of establishing the Energy Agency has not been implemented	Lack of sufficient actual co-operation between institutions. Limited human resources	The employees are sometimes insufficiently qualified and lack co-operative spirit and motivation
Poor co-operation between state agencies in matters concerning the convention	The responsibilities of government bodies are not clearly defined; co-operation between ministries, and between the state and local government levels is poor; poor connection with the state budget	Institutions are insufficiently motivated for co-operation, infrastructures are inflexible and institutions are not sufficiently aware of their roles	The employees have problems with values, attitudes and motivation
Vagueness and excess subjectivity of the Environmental Impact Assessment and Environment Audit Act (SG I 2002, 99, 579) in determining the implementing parameters	The policy supports the environment but fails to give guidance on reducing the impact on the environment	Institutions do not have clearly defined tasks (parameters) for action	The number of top specialists able to assess the strategic environmental impact is small
There is no national register of greenhouse gas emissions and no national system of assessing the emissions	No implementation acts have been adopted on the basis of the framework laws supporting the Convention on Climate Change, incl. such acts that would give systematic guidance on arranging the necessary information	Limited financial and human resources	
Creating awareness among the general public about the principles of implementing the convention has been insufficient and difficult to understand by the general public	The policies supporting the Convention on Climate Change are too declarative	Limited financial resources	To date the awareness among the general public has been low, access to information not sufficient

General

<p>Insufficient information about the possibilities of the implementing mechanisms of the convention, e.g. emissions trading</p>	<p>The contradictory policies as regards emissions trading</p>	<p>The employees have problems with values, attitudes and motivation</p>	
<p>Insufficient role of issues dedicated to climate change in national curricula</p>	<p>The education related development plans deal only partly and declaratively with the matters pertaining to the Convention on Climate Change</p>	<p>Institutions are not sufficiently aware of their roles</p>	
<p>Insufficient funding of scientific research on climate change and circulation of greenhouse gases</p>	<p>To date the scientific research policies have not regarded this field as a priority</p>	<p>Limited financial and human resources</p>	
<p>NGOs and occupational associations are not sufficiently involved in resolving issues pertaining to climate change</p>	<p>The state has not adequately involved the stakeholders in dealing with the issues pertaining to the convention</p>	<p>Institutions are not sufficiently aware of their roles</p>	<p>The employees have problems with values, attitudes and motivation</p>
<p>Poor state budget funding for performing the commitments undertaken under the Convention on Climate Change (annual inventories, national reports etc)</p>	<p>National policies are environmentally friendly only partly and rather declaratively</p>	<p>Limited financial resources</p>	
<p>Conflicts have been built into legislation concerning co-operation and division of responsibilities between the GR and the Parliamentary Commissions in crucial state matters (e.g. development plans to direct the developments in power engineering)</p>	<p>The responsibilities of institution are not clearly defined</p>	<p>Insufficient interoperability between sectors</p>	
<p>Poor legislative supervision over the implementation of the convention</p>	<p>Insufficient harmonisation of legislation between sectors, there is no clear division between developing policies and implementing policies (See the idea of establishing the Energy Agency)</p>	<p>Poor interoperability, actual co-operation between institutions is insufficient</p>	<p>The employees have problems with values, attitudes and motivation</p>
<p>Poor level of developing energy, industry and transport technologies that would lead to the implementation of the convention</p>	<p>The education related development plans are too declarative</p>	<p>The relevant area lacks a development plan, defined tasks and mandates for action</p>	<p>Lack of people with the necessary skills (see specific educational programmes at higher educational establishments). The employees have problems with values, attitudes and motivation</p>
<p>Awareness of the general public of the environmental scope and impact of the energy, industry and transport sector is insufficient</p>	<p>Often national policies are environmentally friendly only declaratively</p>	<p>Institutions are insufficiently motivated for co-operation, infrastructures are inflexible and institutions are not sufficiently aware of their roles</p>	<p>The employees have problems with values, attitudes and motivation</p>
<p>Energy, industry and transport</p>			



Energy, industry and transport	<p>Insufficient regionalisation of oil shale deposits on a common technological, economic and environmental basis</p> <p>The Renewable Energy Development Programme has not been adopted on the national level</p> <p>There is no specialisation in renewable energy in the higher education system, the aspects of energy efficiency and sustainable development are not sufficiently represented in the energy, industry and transport related curricula</p> <p>There is no clearly defined long-term development plan for the industry</p> <p>Poor integration between the national energy sector development plans and the county, local government and city energy sector development plans</p> <p>Insufficient information about the number of electricity consuming appliances and the acquisition of new appliances</p> <p>The energy sector scientists are not participating enough in international programmes and projects</p>	<p>Co-operation between institutions, especially between the Estonian Oil Shale Company (Eesti Põlevkivi), the MoE and the MoEAC is poor</p> <p>Insufficient institutional basis for policy formulation and administration/implementation of the policies</p> <p>Education related development plans are weak</p> <p>Shortcomings in legislation</p> <p>Weakness of legislation</p> <p>Insufficient institutional responsibilities</p> <p>Institutional basis (concentrated information exchange and administration)</p>	<p>Lack of financial resources and poor inter-institutional co-operation</p> <p>Limited financial and human resources</p> <p>Institutions are not sufficiently aware of their roles, ambiguity about responsibilities</p> <p>Shortcomings in inter-institutional co-operation</p> <p>Shortcomings in inter-institutional co-operation</p> <p>Insufficient human resources</p> <p>Limited financial and human resources</p> <p>Financial resources (potential role of the Energy Agency)</p> <p>Limited financial resources</p> <p>Limited human resources</p>	<p>The employees have problems with qualifications, they are lacking specific skills and experience</p> <p>The employees have problems with qualifications, they are lacking specific skills and experience</p> <p>The employees have problems with qualifications, they are lacking specific skills and experience</p> <p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with values, attitudes and motivation</p> <p>The employees have problems with motivation, those with more initiative have left for the private sector, which offers higher motivation</p> <p>Problems with competencies of staff</p> <p>Problems with competencies of staff</p>
Agriculture and land use	<p>Insufficient national support to developing organic farming</p> <p>The procedure of applying for support is too bureaucratic for agricultural producers</p> <p>As a result of intensive farming more mineral fertilisers are used and subsequently greenhouse gas emissions increase</p>	<p>Shortcomings in legislation and development plans.</p> <p>National policies are insufficient</p>		



Waste management	There is no optimal technology for recovery or depositing of semicoke and produce gas generated by the shale oil industry using the Kiviter-technology			Limited financial resources	Limitations as regards professional qualifications, lack of the necessary skills
	Insufficient methane gas is collected in the landfills	National policies are insufficient, there are limitations to access to information		Insufficiency of adequate information. Ambiguity of institutional responsibilities, failure to carry out the necessary obligations	The employees have problems with motivation and values
Forestry	The limited number or complete lack of containers reduces the possibilities of waste sorting; people have no financial motivation to sort their waste	Shortcomings in the relevant legislation and in supervision over its implementation		Institutions are not sufficiently aware of their roles, ambiguity about responsibilities, and no co-operative spirit between sectors. Lack of financial and human resources	The general population has problems with motivation and values
	The general public has little awareness of the environmental impact of waste management	National policies are weak, awareness building activities are insufficient		Lack of financial and human resources	The employees have problems with motivation and values
	The efficiency of control in forestry is insufficient. The problems include failure to carry out the obligations prescribed by law (incorrect cutting methods, reckless logging); failure to put a stop to forest theft	Weak legislation and control		Lack of financial resources and inspectors	The employees have problems with motivation and values
	Private forest owners are not highly motivated to carry out reforestation works, there is not enough for buying plants, regeneration, maintenance etc			Inefficient use of financial resources. Financial resources are scarce	Motivation low, however, lack of information among private forest owners could also be a problem
	Forest inventories and statistics are insufficient and not standardised	National policies are weak		Lack of financial and human resources	Lack of staff of the required qualifications
	There are national limit rates for forest use that would ensure a natural balance and regeneration, observance of protective regimes and preservation of biological and landscape diversity	Shortcomings in the relevant legislation		Financial resources are scarce. Shortcomings in co-operation between institutions	Insufficient general nature education, some limitations in professional qualifications, lack of the necessary skills and experience

3C Capacity constraints to implementation of the Convention to Combat Desertification

	Priority Issues	Systemic Constraints	Institutional Constraints	Individual Constraints
General	Due to worsening socio-economic conditions in the rural areas soil fertility has deteriorated	A complete turnaround in the principles of national economy, disappearance of traditional foreign markets and flooding of the local market with imported products had a devastating effect on the inflexible agricultural sector	Ineffective institutional processes, insufficiency of adequate human resources	The employees have problems with motivation and values, low skills level
	Soil is not clearly defined as a natural resource, legislative texts treat soil as a general term only, failing to take into account its properties, resilience and importance to the ecosystem, thus the legislation is inadequate as regards soil issues	Shortcomings in legislation, institutional responsibilities have not been clearly defined, insufficient inter-institutional co-operation	The institutions are ineffectively managed and staffed, there is a lack of human and information resources	Insufficiency of specialists, low level of general education
	Limit rates have been established for hazardous substances in water and in the air, but not in soil. The properties of the soil have not been taken into account when determining pollution rates and environmental restrictions	Shortcomings in legislation and implementation of legislation is ineffective	Insufficient inter-institutional co-operation coupled with legislative limitations, lack of control	The employees have problems with values and motivation
	The compatibility of and access to data in national registers and databases is insufficient, they are not user friendly and new data are entered with long delays	Shortcomings in legislation, insufficient inter-institutional co-operation, scarcity of resources	Institutional responsibilities have not been clearly defined, contradictory tasks	Spread of information restricted
	The approach to soil is too superficial, the type specific properties (i.e. grouping of soils on the basis of their sensitivity to external influences) of soils are not taken into account, awareness is low	Shortcomings in legislation, scarcity of resources, ineffective inter-institutional co-operation	Insufficiency of adequate human resources	Lack of knowledge, failure to disclose information
	The subjects dealt with by the Environmental Impact Assessment and Environment Audit Act and the Environment Supervision Act do not fully coincide and there is gap between them	Shortcomings in legislation, insufficient inter-institutional co-operation	Ineffective legislative process and coordination thereof	
	The quality of life in the rural areas is worsening and important landscape values are disappearing	Shortcomings in legislation, lack of inter-institutional co-operation	Insufficiency of adequate human resources	The employees have problems with values and motivation
	Physical degradation of soil has resulted from the spread of man-made environments, mining areas and constructions in suburban areas, on coastlines and near highways	Shortcomings in legislation, ambiguous institutional responsibilities, scarcity of human and information resources, insufficient inter-institutional co-operation	Insufficiency of adequate human resources, insufficient system of planning, control and monitoring	The employees have problems with values and motivation and low levels of knowledge

Agriculture and land use					
The quality of life in the rural areas is worsening as a result of disappearing or distancing of schools kindergartens, cultural and service establishments	Poor administrative capacity, lack of inter-institutional co-operation, scarcity of resources	Insufficiency of adequate human resources, ineffective use of financial resources, ineffective infrastructure, lack of planning	Ambiguity of responsibilities, insufficient advanced training		
Difficulties in marketing agricultural products (overproduction, double tariffs, export quota)	Shortcomings in legislation, insufficient inter-institutional co-operation	Ambiguity of institutional responsibilities, inefficiency of planning and control, insufficient monitoring over the implementation of development plans	Difficulties with access to information, insufficient advanced training, tasks not clearly defined		
A large part of arable land has fallen out of use, overgrown with weeds and shrubs	Shortcomings in legislation, Ambiguity of institutional responsibilities, scarcity of resources, information, national policies have not been formulated	Implementation of development and other plans has slowed down, there is no monitoring over the established activities	Difficulties with access to information, insufficient advanced training		
Draining systems have fallen into disrepair and swamping of lands has occurred in private hands due to the high investment burdens associated with the upkeep and because the borders of the private lands do not coincide with the borders of the former drainage objects	Shortcomings in legislation, scarcity of resources, ambiguity in areas of institutional responsibilities, insufficient inter-institutional co-operation	There is no control over the implementation of development plans and other plans, monitoring is insufficient	Problems with values		
Inadequate and excessive use of pesticides and other plant protection products has led to local pollution of soils	Lack of national strategy	Weak control exercised by the state	Problems with values and with access to information		
Change in the value of land and change of landscapes, hinterlandisation (the country youth leaving for cities, shrinking the local government tax base)	National regional policy has failed	Ambiguity of responsibilities, tasks not clearly defined	Insufficient advanced training, ambiguity of responsibilities, problems with values		
The slow pace of the land reform and privatisation process have created a secondary land market, as a result lands have fallen into disuse (i.e. their cultural condition has deteriorated, the intended purpose of their use has been changed etc)	Shortcomings in legislation, scarcity of resources, ambiguity in areas of institutional responsibilities	Weak supervision over institutional processes, insufficiency of adequate human resources	Problems with values		
Growing monocultures and inadequate use of fertilizers has completely worn out ploughed lands in some locations	Scarcity of resources	Ineffective institutional processes	Problems with values and with access to information		
Wrong timing of land cultivation, inaccurate methods of agrotechnology and failure to use crop rotation due to the reduction of the share of animal farming (low demand for grasslands) has resulted in erosion by water and wind on ploughed lands	Changes in land ownership and in the structure of production in the agricultural sector	Ineffective institutional processes	Problems with values and with know-how		

Industry, energy and transport	Most of the soils in the mining areas have been destroyed, recultivation and developing alternative uses has been insufficient	Shortcomings in legislation	Ambiguity in areas of institutional responsibilities, ineffective application of resources	Problems with values
	Road-building and construction has resulted in destruction of soil and changes in the water regime	Shortcomings in legislation and in giving value to the environment in plans	Ineffective monitoring and implementation of institutional processes	Problems with values
	Local industry, transport, agriculture and air pollution has caused soil pollution in some locations	Shortcomings in legislation	Insufficiency of institutional processes, insufficiency of adequate human resources	
Forestry	Soils are polluted with heavy metals (near highways, airfields and industrial areas), alkaline pollution and past pollution. Residual products from depositing waste rock and oil shale waste have polluted surface water and soils	Shortcomings in legislation, insufficient co-operation on all levels	Ambiguity in areas of institutional responsibilities	Problems with values
	Wrong timing and use inadequate technology results in forest soil deterioration	Insufficient legislation	Ambiguity in areas of institutional responsibilities, weakness of control mechanisms	Problems with values, insufficient advanced training and information
	Delays having the forest register operational favour illegal logging and result in more damage to forest soils	Shortcomings in legislation and poor co-operation between institutions	Insufficient control, ambiguity in areas of institutional responsibilities	
	More frequent droughts resulting from climate change and the increased human load on forest lands in summer had lead to more forest fires		Ineffective institutional processes	Problems with values and with access to information

ANNEX 4. Opportunities for synergistic environmental management in Estonia based on the Rio conventions.

General

Synergetic Needs	Necessary Action	Action Evaluation		
		CBD	FCCC	CCD
Integration of aspects pertaining to the conventions into sectoral policies is insufficient. There are shortcomings as regards common standards, rules and parameters in preparing national programmes and strategies. Legislation does not support adequately the performance of the objectives defined in national development plans and strategies. No clear mechanisms are in place to exercise control over the implementation of national development plans and strategies. Insufficient inter-institutional co-operation on all levels	Establishing efficient national councils for all conventions with the relevant ministries, and based thereon, an inter-sectoral working group following the harmonious implementation of all conventions. Preparing guidelines for and mechanisms of developing national programmes and strategies, to ensure control over the implementation of the adopted programmes and strategies	3	3	3
Unstable funding of national programmes and development plans as well as of commitments undertaken under the conventions, arising from preference to short-lived political agendas	Upon adoption long-term programmes which are developed on the state level the necessary budgetary funds should be earmarked for their funding and a long-term state guarantee should be issued for their funding	3	3	3
Soil as a resource has not been defined in legislation	Legislative proposals should be developed in the area of responsibility of the MoE to define soil as a natural resource. A type-specific database should be established for pollution loads of soils. A property-specific resource tax should be imposed on soils, based on the costs of regenerating the soil and liquidating short-term and past pollution	3	1	3
The statistical material is insufficient for making the decisions necessary for implementing the conventions. State control over the consumption of the natural resources is insufficient. The statistics regarding components exiting the consumption and production cycle is insufficient. No compatibility between national registers and databases	The Land Board, Statistical Office, EEIC and other competent national bodies should work together in order to launch a real-time database of the state natural resources, which also involves data collected by scientific research institutions. All data collected by national programmes and within the framework of scientific research should be made freely accessible and a catalogue of metadata should be created of the existing data and databases	3	3	3
Not enough has been done to establish the critical supplies of natural resources	All stakeholders together should speed up the development of the methods for establishing the critical supplies of natural resources and the MoE Environmental Management and Technology Department and the MoA Bureau of Agrienvironment and Renewable Resources should commence the process of establishing the resources	3	3	3
The parameters of environmental impact and strategic environmental impact have not been determined	The legislation regulating environmental impact should be improved and amended as regards mandatory requirements, and the share of taking into account long-term impact should be increased therein. Specific, accounting-based parameters should be established for assessing environmental impact. The responsibilities of experts engaged in making environmental impact assessments as regards their recommendations in the expert analysis should be specified	3	3	3

Inadequacy of monitoring the components pertaining to the conventions	The national councils of the conventions should identify the parameters necessary for implementing the conventions, develop methods for their monitoring and integrate these indicators into the national monitoring programme	3	3	3
The system of pollution charges and environmental taxes is not organised rationally	The system of pollution charges and environmental taxes should be reorganised, by defining the principles of re-directing the charges collected for resolving priority environmental issues and ensuring participation of all stakeholders in the reorganisation process. An analysis of the life cycle of the pollution components should be carried out	3	3	2
The mechanism of funding long-term basic and applied research supporting the conventions is inadequate	The national councils of the conventions should identify the objects of research necessary of implementing the conventions. The ministries should order more applied research in areas related to the conventions and integrate the results thereof into national databases.	3	3	3
Environmental advice to entrepreneurs, officials and other target groups is inadequate	Mechanisms of advising entrepreneurs in areas related to the conventions should be developed in the area of responsibility of the MoE. With the help of the environmental advisors small-scale businesses should be taught how to develop niche products supporting the conventions and small-scale farmers should be given advice on how to apply for environmental support.	3	2	3

Energy, industry, transport

Synergetic Needs	Necessary Action	Action Evaluation		
		CBD	FCCC	CCD
The state's position as regards the future of oil shale chemical industry is ambiguous	The development trends of oil shale chemical industry should be developed by the MoE in conjunction with the MoEAC and the Ministry of Social Affairs, by taking into account the social, economic, technical and environmental aspects of the industry	1	2	3
There are no clear assessment criteria for oil shale resources and the optimal structure of oil shale mining is lacking, thus making it impossible to predict any developments in the energy sector	The MoEAC in conjunction with the MoE should define clearly the price of the oil shale life cycle, i.e. the actual price of oil-shale based power engineering, which also takes into account the sensitivities of nature conservation and socioeconomy (culture). A balance should be established in order to reach an optimal solution on the national level, namely the high-quality oil shale resources rendered un-usable because of conservation limitations should not be replaced by oil shale extracted from mines of lesser quality, which would produce significantly higher environmental damage when generating the same amount of energy. An optimal structure of oil shale mining should be developed, consisting of a combination of mines, quarries, potential areas for exploration and protected areas. Additional research is necessary for achieving best results.	3	3	2
Costs analyses accompanying the development of large-scale oil shale mining and waste deposit areas are inadequate	Applied research and financial analyses should be conducted to assess the effectiveness of the various methods of developing man-made landscapes (natural regeneration, partial and complete restoration etc). Multi-purpose recultivation of quarries should be developed, so as to take into account the ecological condition (if possible, observing the prior situation), diversity of the species and landscapes and socio-economic aspects. Plans for alternative use should be developed	3	2	3

<p>There is no clear plan for developing renewable energy. The criteria of assessing the environmental impact of developing renewable energy are ambiguous</p>	<p>A national renewable energy development concept should be prepared. A thematic plan defining the use of renewable energy should be established, which takes into account the positions of the different stakeholders. The principles of renewable energy and de-centralised energy generation should be taken into account. An area without environmental restrictions should be defined, in which renewable energy can be developed through simplified preferential development of the infrastructure. The perspective of creating capacities which can be rapidly regulated should be analysed when planning the structure and capacities of the Estonian electricity system. The MoEAC in conjunction with the MoE are responsible for carrying out the measure</p>	3	3	3
<p>The conditions of exporting biofuels limit the domestic use of biological resources</p>	<p>The energy pricing policies should make the generator of renewable energy interested in purchasing the domestic biofuel resources. The emissions quota on exported biofuel resources should be calculated by the state. The MoE should analyse the options related to the implementation of this measure</p>	2	2	2
<p>Shortcomings in managing the register of greenhouse gas emissions and in establishing the national system of assessing the emissions</p>	<p>In order to improve the register of greenhouse gases additional research should be conducted in sectors (soils, land use, swamps etc) where the necessary base for carrying out the inventory is lacking (e.g. the national statistics does not exist or is inaccurate). A national programme for reducing greenhouse gas emissions should be adopted and the Secretariat for the Convention on Climate Change should be established. The MoE is responsible for carrying out the measure</p>	3	3	3
<p>Ineffective transport system with no development concept: public transport is poor and has low reputation, the transport system has not been thought through. Modes of transport with higher environmental loads have not been sufficiently replaced with more environmentally friendly modes. Preferential treatment is given to road transport.</p>	<p>An effective long-term national transport development plan should be prepared, proceeding from preferential development of sustainable transportation systems, promoting public transport and developing transport technologies. The MoEAC is in charge of carrying out the measure.</p>	1	3	3
<p>Export of products of low processing level and raw materials. Sustainable use of local resources is not taken sufficiently into account when planning production facilities</p>	<p>The methods of calculating the resources and user limits should be based on the critical supply (e.g. resources of forest, water etc). Modern technology on the national level and technology transfer should be supported through the Innovation Fund. The MoEAC is in charge of carrying out the measure, doing so in conjunction with the Ministry of Education and Research, the MoF and the office of the Prime Minister</p>	3	3	3
<p>There are shortcomings in both domestic waste and industrial waste management.</p>	<p>Legislation of waste management should be amended, in order to improve depositing, recovery and re-utilisation of heavy synthetic materials, industrial and domestic waste. Supervision over littering, pollution and refuse collection should be more stringent. A refuse collection tax should be imposed on households: a higher tax should be imposed on unsorted waste. A fund should be created on the basis of the Packaging Excise Duty to finance the clean-up of littered areas.</p>	2	2	2

Land use

Synergetic Needs	Necessary Action	Action Evaluation		
		CBD	FCCC	CCD
Land improvement systems and drainage systems have fallen into disrepair, swamping of drained lands has occurred, there are no clearly defined management plans for objects land and field improvement	A county thematic plan should be prepared by involving the various stakeholders, in order to map the feasibility of repairing the land improvement systems, based on the condition of the environment and economic feasibility of each individual object. The thematic plan should be integrated into the Catchment Area Based Water Management Plan of the National Water Management Programme to be created in the area of responsibility of the MoE and into the Environmental Monitoring Programme. Restoration of the natural environment should be favoured in economically less feasible and important environmental objects (e.g. the water regime)	3	3	3
Due to the change in the agricultural system arable land has fallen out of use, overgrown with weeds and shrubs	Principles of determining and applying the intended purpose of arable lands that have fallen out of use and are to be left so, should be developed in the area of responsibility of the MoA. Maintenance of areas under cultivation that are temporarily out of agricultural use and are overgrown with shrubs should be supported	2	2	3
Protection of threatened species and habitats, including soil as the underlying component of the ecosystem is not adequately organised and supervision is poor	The organization of the work of environmental services and managers of protected areas in the area of administration of the MoE should be changed so that they could have more control and responsibilities over the execution of management plans. The diversity of soil and soil biota should be taken into account when preparing management plans and natural background areas with reference soils should be created.	3	1	3
The growing of GMOs is not sufficiently justified and regulated by law in Estonia	Control mechanisms for regulating the growing of GMOs should be developed in the area of administration of the MoA. Plans should also be developed for the preservation of indigenous and local animal and plant species	3	1	3
The support system for managing traditional communities and developing small-scale production in such communities is weak	The environmental services and advisors should expand local advisory services to support management of traditional communities. The relevant state support systems should be put in place.	3	1	2
State support for developing organic farming is insufficient	Measures to support organic farming should be developed in the area of administration of the MoA. Effective structures should be established for processing, producing, distributing organic produce and for promoting organic farming among the general population	3	2	1
Deteriorating quality of life and degradation of landscapes in rural areas	Support systems for developing businesses and infrastructure in rural areas should be strengthened. The Soil and Landscape Act should be adopted. The thematic plan "Settlement System and Application of Environmental Conditions Influencing Land Use", as well as the measure of landscapes of the agricultural-environmental programme ("valuable landscapes") should be implemented and the financial resources for the RDP should be increased.	3	1	3



<p>The negative impact of intensive farming on various natural and semi-natural communities, including the components of biological diversity related thereto</p>	<p>In co-operation the MoA and the MoE should ensure control of potential biological and chemical pollution resulting from the activities of intensive farming facilities. Permitted norms of using fertilisers should be developed, based on soil properties, the preparation, distribution and renewal of cards of fertilization demand should be supported</p>	3	3	3
<p>Spread of man-made environments and constructions in suburban areas, on coastlines and near highways</p>	<p>The Soil and Landscape Act should be adopted. Local governments should do more to renew wastelands and production areas that have fallen into disuse. The plans should specify landscape related pre-requisites and values. Supervision over implementing the plans should be strengthened</p>	3	2	3
<p>Insufficient volumes of recultivating quarries and forest lands</p>	<p>Changes should be made in the organisation of work of environmental inspectors in the area of responsibility of the MoE, in order to ensure better control over performance of the reforestation obligation. The role of environmental advisors in the reforestation advisory system should be increased. A higher obligatory density of woody flora should be established for natural regeneration of forests</p>	2	3	3
<p>The negative impact of underground mining to arable and forest lands</p>	<p>The Soil and Landscape Act should be adopted. The following measures should be taken: monitoring of areas where underground mining activities have been carried out, determining the conditions of land use, prohibiting mining under protected areas, promoting alternative power engineering and developing alternative uses for mining areas</p>	2	2	3
<p>The physical tolerance of the soils is not taken adequately into account when timing cutting, choosing the appropriate technology and determining the allow-able recreative load for natural landscapes</p>	<p>The principles of soil sustainable cutting, choice of appropriate technology and timing for cutting should be established in the area of responsibility of the MoE. The measures of management of environment should determine and ensure the implementation of indicators for load tolerance of valuable natural landscapes / communities and cultural landscapes, establish the relevant time-related restrictions, criteria for choice of appropriate technology and restrictions pertaining to human load</p>	2	1	3
<p>Management of past chemical pollution and polluted areas is ineffective and implementation of preventive measures is inadequate</p>	<p>In co-operation the MoA and the MoE should develop the conditions for using areas with past pollution, so as to avoid their use until they have been cleaned up and to avoid accumulation and transmission of residues in the food chain</p>	2	2	3
<p>The conditions of building new hydro installations are insufficiently defined</p>	<p>The building of new dams should be avoided. The environmental impact assessments prepared upon restoring old dams and building other hydro installations should take into account the emissions of gases that would occur and the changes in the soil and water regime and other environmental changes in the hinterland of the installations</p>	3	2	3

Education and media

Synergetic Needs	Necessary Action	Action Evaluation		
		CBD	FCCC	CCD
<p>A decrease in general environmental awareness and knowledge of nature among the whole population (extra-curricular nature education, the share of natural sciences on all levels of the education system, vocational education, practical field exercises in higher educational establishments, advanced teacher training, the teachers' motivation to engage in the subject etc)</p>	<p>State support for carrying out longer-term and systemic environmental education programmes should be increased. The share of learning to know the nature should be increased on all levels of education, the network of nature houses should be restored and organisation of study camps and trips by schools should be supported.</p> <p>The life sciences curricula in basic schools should be brought closer to life and be integrated with other subjects</p> <p>Environmental science should be introduced as part of the general higher education</p>	3	3	3
<p>There are shortcomings in preparing and distributing study aids pertaining to the conventions (including in Russian)</p>	<p>The activities of the MoER in preparing nature related study aids should be more effective. The choice of study aids and teacher's materials that are made available on the Internet through the concepts of E-School and School of the 21st Century should be wider. Priority should be given the making available in foreign languages, especially in Russia such materials that already exist in Estonian</p>	2	2	2
<p>The system of advance training in environmental matters aimed at entrepreneurs is inadequate</p>	<p>State support should be given to environmental education projects aimed at entrepreneurs, the share of environmental services in dissemination of information aimed at entrepreneurs should be increased.</p> <p>A system of advanced training in nature and environmental issues, as well as a plan of economic and legal measures should be developed, in order to motivate entrepreneurs towards gaining a better education in this field</p>	3	3	2
<p>NGOs and occupational associations are inadequately involved in environmental policies and not well aware of general environmental issues</p>	<p>NGOs and occupational associations should be involved in the decision-making processes of all levels. The importance of environmental measures for sustainable development should be emphasised through all information channels</p>	3	2	2
<p>The coverage of environmental issues by the media is insufficient and incompetent.</p> <p>There are too few children's TV programmes dedicated to the nature</p>	<p>Scholarship programmes should be introduced to improve the environmental studies of media students.</p> <p>The share of articles and programmes on environmental issues should be made equal to the share of cultural articles and programmes.</p> <p>The share of nature programmes aimed at primary school children should be increased considerably, funds should be sought for creating studios for nature programmes with the national television and radio.</p> <p>An expert study should be carried out in order to find the root causes of the limited environmental awareness of the Estonian media and a general programme of measures should be developed on the basis thereof to amend matters</p>	3	3	3

ANNEX 6. Documents Consulted

Documents common to all conventions	Passed	Adopted by	Source	Reference
Acts				
Education Act of Republic of Estonia	23.03.92	Riigikogu (Parliament of Estonia)	RT I, 07.04.2003, 33, 205	https://www.rigiteataja.ee/ert/act.jsp?id=562516
The Constitution of the Republic of Estonia	28.06.92	Referendum	RT 06.07.1992, 26, 349	https://www.rigiteataja.ee/ert/act.jsp?id=24304
Council Directive 1999/31/EC on the Landfill of Waste	26.04.99	European Union Council	26;04;99	http://www.envir.ee/euro/3/1999,31.rtf
Special Accession Programme for Agriculture and Rural Development Multiannual Financing Agreement Between European Community Represented by Commission of the European Communities and Republic of Estonia Ratifying Act	18.04.01	Riigikogu (Parliament of Estonia)	RT II, 07.05.2001, 14, 68	https://www.rigiteataja.ee/ert/act.jsp?id=27012
Waste Act	10.06.98	Riigikogu (Parliament of Estonia)	RT I 1998, 57, 861	https://www.rigiteataja.ee/ert/act.jsp?id=191815
Draft Waste Act	01.03.04 (DRAFT)	GR	01.03.2004 (DRAFT)	http://www.envir.ee/oigusaktid/eeinoud/jaاتمeseaduse_eelnou.pdf
Protected Natural Objects Act	01.06.94	Riigikogu (Parliament of Estonia)	RT I 1998, 36, 555	http://seadus.ibs.ee/aktid/rk.s.19940601.376.19980322.html
Protected Natural Objects Act Amendment Act	19.02.98	Riigikogu (Parliament of Estonia)	RT I 1998, 23, 323	http://seadus.ibs.ee/aktid/rk.s.19980219.17.19980322.html
The Act Ratifying the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters	06.06.01	Riigikogu (Parliament of Estonia)	RT II 2001, 18, 89	https://www.rigiteataja.ee/ert/act.jsp?id=27132
Environmental Impact Assessment and Environment Audit Act	14.06.00	Riigikogu (Parliament of Estonia)	RT I 2002, 99, 579	https://www.rigiteataja.ee/ert/act.jsp?id=228324
Environmental Register Act	19.06.02	Riigikogu (Parliament of Estonia)	RT I, 10.07.2002, 58, 361	https://www.rigiteataja.ee/ert/act.jsp?id=179306
Environmental Monitoring Act	20.01.99	Riigikogu (Parliament of Estonia)	RT I 1999, 10, 154	https://www.rigiteataja.ee/ert/act.jsp?id=192239

Local Government Organisation Act	02.06.93	Riigikogu (Parliament of Estonia)	RT I 1993, 37, 558	https://www.rigiteataja.ee/ert/act.jsp?id= 241963
Vocational Educational Institutions Act	17.06.98	Riigikogu (Parliament of Estonia)	RT I 1998, 64/65, 1007	https://www.rigiteataja.ee/ert/act.jsp?id= 185491
Rural Development and Agricultural Market Regulation Act	11.10.00	Riigikogu (Parliament of Estonia)	RT I 2000, 82, 526	https://www.rigiteataja.ee/ert/act.jsp?id=264482
Earth's Crust Act	09.11.94	Riigikogu (Parliament of Estonia)	RT I 1994, 86/87, 1488	https://www.rigiteataja.ee/ert/act.jsp?id=191594
Organic Farming Act	11.04.01	Riigikogu (Parliament of Estonia)	RT I 2001, 42, 235	https://www.rigiteataja.ee/ert/act.jsp?id=192048
Forest Act	09.12.98	Riigikogu (Parliament of Estonia)	RT I 1998, 113/114, 1872; 1999, 54, 583; 82, 750; 95, 843; 2000, 51, 319; 102, 670; 2001, 50, 282; 2002, 61, 375; 63, 387	https://www.rigiteataja.ee/ert/act.jsp?id=191828
Draft Forest Act		GR		http://www.envir.ee/igusaktid/eeinoud/metsaseaduse%20eelnou.pdf
Planning Act	13.11.02	Riigikogu (Parliament of Estonia)	RT I, 09.12.2002, 99, 579	https://www.rigiteataja.ee/ert/act.jsp?id=226995
Pollution Charge Act	10.02.99	Riigikogu (Parliament of Estonia)	RT I 1999, 24, 361; 54, 583; 95, 843; 2001, 102, 667; 2002, 61, 375	https://www.rigiteataja.ee/ert/act.jsp?id=186684
Integrated Pollution Prevention and Control Act	10.10.01	Riigikogu (Parliament of Estonia)	RT I 2001, 85, 512; 2002, 61, 375	https://www.rigiteataja.ee/ert/act.jsp?id=186712
Sustainable Development Act	22.02.95	Riigikogu (Parliament of Estonia)	RT I 1995, 31, 384	https://www.rigiteataja.ee/ert/act.jsp?id=22325
Amendment Act of Sustainable Development Act	05.06.97	Riigikogu (Parliament of Estonia)	RT I 1997, 48, 772	https://www.rigiteataja.ee/ert/act.jsp?id=73671
Plant Protection Act	15.03.00	Riigikogu (Parliament of Estonia)	RT I 2000, 29, 169	https://www.rigiteataja.ee/ert/act.jsp?id=192075
Research and Development Organisation Act	26.03.97	Riigikogu (Parliament of Estonia)	RT I 1997, 30, 471	https://www.rigiteataja.ee/ert/act.jsp?id=186700
Fertilizers Act	03.12.97	Riigikogu (Parliament of Estonia)	RT I 1997, 93, 1563	https://www.rigiteataja.ee/ert/act.jsp?id=191887
Ambient Air Protection Act	22.04.98	Riigikogu (Parliament of Estonia)	RT I 1998, 41/42, 624	https://www.rigiteataja.ee/ert/act.jsp?id=191969
Treaty of Accession to the European Union		Riigikogu (Parliament of Estonia)		http://www.vm.ee/est/kat_6/3634.html
Universities Act	12.01.95	Riigikogu (Parliament of Estonia)	RT I 1995, 12, 119	https://www.rigiteataja.ee/ert/act.jsp?id=562551

Regulations	Passed	Adopted by	Source	Reference
Approval of Procedures for Reclamation of Mining Areas	28.12.95	Minister of Environment	RT L 1996, 11/12, 89	https://www.riigiteataja.ee/ert/act.jsp?id=22586
Approval of Procedure for Management Plan Preparation	11.09.98	Minister of Environment	RT L, 01.01.1998, 1176	https://www.riigiteataja.ee/ert/act.jsp?id=25672
Forest Protection Rules	09.04.99	MoE	RT L 1999, 68, 894	http://lex.andmevara.ee/estlex/kehtivad/AktDisplay.jsp?id=30279
Requirements for the Construction, Operation and Closing Down of Landfills	26.06.01	MoE	RT L 2001, 87, 1219	http://lex.andmevara.ee/estlex/kehtivad/AktDisplay.jsp?id=42824&akt_id=42824
Procedure of Hazardous Waste Identification and Classification	27.08.02	GR	RT I, 11.09.2002, 75, 449	https://www.riigiteataja.ee/ert/act.jsp?id=194986
Requirements for Receipt of Agri-environmental Support and the Procedure for Applying for Support and Processing Applications	12.02.03	Minister of Agriculture	RT L 2003, 25, 363	https://www.riigiteataja.ee/ert/act.jsp?id=568538
Target Value of Level of Pollution of Ambient Air	25.10.99	Regulation of Minister of Environment	RT L 1999, 148, 2097	http://lex.andmevara.ee/estlex/kehtivad/AktDisplay.jsp?id=32602
Approval of the General Study Programme for Pre-School Education	15.09.99	GR	RT I 1999, 80, 737	https://www.riigiteataja.ee/ert/act.jsp?id=26072
National Curriculum for Basic Schools and Upper Secondary Schools	25.01.02	GR	RT I 2002, 20, 116	https://www.riigiteataja.ee/ert/act.jsp?id=174787
Approval of Estonia's Eco-label Award Scheme	30.12.97	GR	RT I, 12.01.1998, 4, 64	https://www.riigiteataja.ee/ert/act.jsp?id=25467
Establishment of Rates of Damage Caused to Environment by Violation of Provisions of Forestry Law	08.06.99	GR	RT I 1999, 52, 570	http://lex.andmevara.ee/estlex/kehtivad/AktDisplay.jsp?id=31012&akt_id=31012
Establishment of State Register of Fertilizers	13.10.98	GR	VV/m RT I 1998, 94, 1505	http://trip.rk.ee/cgi-bin/thw?\$(BASE)=akt&\$(OOHTML)=rtd&TA=1998&TO=1&AN=1505
List of Types of Waste and Hazardous Waste	06.06.02	GR	RT I, 11.06.2002, 48, 307	https://www.riigiteataja.ee/ert/act.jsp?id=134165
List of Objects of Significant Spatial Impact	15.07.2003	GR	RT I 2003, 54, 369	http://estlex.info/estlex/kehtivad/AktDisplay.jsp?id=56790&akt_id=56790
Estonian National Programme for Natura 2000 for years 2000–2007	25.07.2000	GR	622-k 25.07.2000.	http://trip.rk.ee/cgi-bin/thw?\$(BASE)=akt&\$(OOHTML)=rtd&TA=2000&TO=5&AN=1337&KP=2000-07-25

Development Plans, Action Plans and Strategies	Responsible for the Document	Reference
Estonian Agricultural Development Strategy	MoA	http://www.agri.ee/maamajandus/strateegiad/strateegiad.html
Estonia 2010: National Spatial Plan	MoE	http://www.agenda21.ee/EA21/2_01e2010.html
Estonian National Environmental Strategy	MoE	http://www.envir.ee/saastev/keskkonnastrateegia.html
Estonian National Environmental Action Plan for 2001–2003	MoE	http://www.envir.ee/saastev/tegevuskava.html
Estonian Rural Development Plan for 2000–2006	Ministry of the Agriculture	http://www.agri.ee/SAPARD/Est/index_uus.htm
Estonian Forestry Development Plan up to 2010	MoE	http://www.envir.ee/metsandus/arengukava/Eesti%20Metsanduse%20Arenduskava%20Aastani%202010.pdf
Estonian Forest Policy	MoE	http://trip.rk.ee/cgj-bin/thw?\$(BASE)=akt&\$(OOHTML)=rd&TA=1997&TO=1&AN=768
Estonian Regional Development Strategy	MoEAC	http://www.erda.ee/pdf/Eesti_Regionaalarengu_Strateegia.PDF
Estonian National Development Plan for 2003–2006	MoF	http://www.sak.ee/RAK.pdf
Estonian Research and Development Strategy "Knowledge-based Estonia" for 2002–2006	MoEAC	https://www.riigiteataja.ee/ert/act.jsp?id=73322
Educational Strategy "Learning Estonia"	MoER	http://www.hm.ee/uus/hm/client/index.php?0352623013173234
ISPA Environment Strategy	MoE	http://www.envir.ee/euro/ISPA%20strateegia.pdf
ISPA Transport Strategy	MoEAC	http://www.mkm.ee/dokumendid/ISPA_transpordistrateegia_2003_EST.doc
Long-term National Fuel and Energy Sector Development Plan	MoEAC	https://www.riigiteataja.ee/ert/act.jsp?id=74811
Long-term National Fuel and Energy Sector Development Plan for 2015 (vision 2030) + Strategic Environmental Impact Assessment Report	MoEAC	http://www.mkm.ee/dokumendid/Kytuse-ja%20Energiamaanduse%20arengukava%20aastani%202015%20(visioniga%202030).doc ; http://www.mkm.ee/dokumendid/Strateegiliste%20keskkonnam6jude%20hinnavu%20aruanne.doc
Transport Development Plan for 1999–2006	MoEAC	http://www.mkm.ee/dokumendid/transpordi_arengukava_aastateks_1999_2006.htm
Transport Development Plan for 1999–2006 Annex I	MoEAC	http://www.mkm.ee/dokumendid/Lisa_Transpordi_arengukava.htm

Baltic Sea Agenda 21 – Forest Management	MoE	http://www.agenda21.ee/EA21/2_18metsandus.html
National Tourism Development Plan for 2002–2005	MoEAC	http://www.mkm.ee/dokumendid/Riiklik%20turismiarenduskava%20aastateks%202002-2005.doc
Estonian Oil Shale Energy Reconstructing Development Plan for 2001–2006	MoEAC	http://www.mkm.ee/dokumendid/Eesti_p6levkivienergeetika_restruktureerimise_tegevuskava_2001-2006.doc
National Programme for the Adoption of the Acquis 2002–2003	GR	http://www.eib.ee/pages.php/01030103
Coalition Agreement of Estonian Coalition Government 2003–2007	The Qualiton of Union for the Republic – Res Publica (Uhendus Vabariigi Eest-Res Publica), Estonian Reform Party (Eesti Reformierakond), Estonian People's Union (Eestimaa Rahvaliid)	http://www.riik.ee/et/valitsus/r3koalitsioon.htm
National Waste Management Plan	MoE	https://www.riigiteataja.ee/ert/act.jsp?id=232285
Other County and Local Government Energy, Waste Management and Environmental Development Plans and Strategies and Development Plans and Strategies for other Convention related topics	Counties and Local Governments	

Projects and Programmes	Responsible for the Document	Reference
Estonian Sustainable Development Account 2002	MoE	http://www.envir.ee/saastev/tervik-2002.pdf
Energy Conservation Programme	GR	http://www.mkm.ee/dokumendid/Energias22stu_sihiprogramm.pdf
Enterprise Policy "Enterprising Estonia "	GR	http://www.mkm.ee/index.html?id=899
Waste Handling Programme 2002	MoE	www.kik.ee
Hazardous Waste Handling Programme	MoE	http://www.kik.ee/
Project "Assessment of External Costs of Different Modes of Transportation, Including Assessment of Environmental Impact of These Modes of Transport – Estonia" Final Report	MoEAC	http://www.mkm.ee/dokumendid/Erinevate%20transpordiliikide%20v2liskulude%20hindamine.pdf
Landfill Closure Programmes	MoE	http://www.kik.ee/
National Environmental Monitoring Programme	MoE	http://www.seiremonitor.ee/?leht=-./dok/rkp2003
Climate Change Projects and Publications of Estonian Institute For Sustainable Development	SEI	http://www.seit.ee/projektid.php3
Strategy Sustainable Estonia 21 (SE21)	MoE	http://www.envir.ee/saastev/SE21_pohitekst.pdf
Sustainable Estonia 21- ToR	GR	http://www.envir.ee/saastev/saast%20lahteyl.pdf
Tallinn Communal Transport Strategy and Investment Programme	Tallinn City Management	http://www.tallinn.ee/est/ametid/transpordi-ja_kestkonnaamet/seadusandlus/strateegia_ja_investeeringute_programm
Non-hazardous Waste Handling Programmes	MoE	http://www.kik.ee/
Examination, Planning and Development Plan Programmes	MoE	http://www.kik.ee/
Private Forestry Support Programmes	MoE	http://www.kik.ee/
County Forestry Programmes	MoE	http://www.kik.ee/
Reforestation Programmes	MoE	http://www.kik.ee/
Forestry Development Plan Implementation Programmes	MoE	http://www.kik.ee/
Programmes for the accounting of forest resource	MoE	http://www.kik.ee/
Forest Science and Education Programmes	MoE	http://www.kik.ee/
Forest Ecosystem Protection Programmes	MoE	http://www.kik.ee/
Agriculture and Rural Development An Overview 2002/2003	MoA	http://www.agri.ee/trykised/aastaraamatud/aastaraamat2003.html
Inspection of Environmental Performance	MoE	http://www.envir.ee/saastev/keskkonnategevuste%20tulemuslikkuse%20yevaade.html
General Principles of the Export Policy of Estonia	MoEAC	http://www.mkm.ee/dokumendid/eesti_eksportipoliitika_p6hialused.doc

Convention on Biological Diversity	Passed	Adopted by	Source	Reference
Acts				
Law of Property Act	9.06.1993	Riigikogu (Parliament of Estonia)	RT I 1993, 39, 590; 9.06.1993	https://www.riigiteataja.ee/ert/act.jsp?id=28540
Convention on Biological Diversity	11.05.1994	Riigikogu (Parliament of Estonia)	RT II 1994, 13, 41; 11.05.1994	https://www.riigiteataja.ee/ert/act.jsp?id=24654
Draft Cartagena Protocol on Biosafety				http://www.envir.ee/looduskaitse/biosafety_toige.pdf
Deliberate Release of Genetically Modified Organisms into the Environment Act	13.01.1999	Riigikogu (Parliament of Estonia)	RT I 1999, 10, 151; 13.01.1999.	https://www.riigiteataja.ee/ert/act.jsp?id=192101
Convention on the Protection Of the Marine Environment of the Baltic Sea Area	19.04.1995	Riigikogu (Parliament of Estonia)	RT II 1995, 11/12, 57; 19.04.1995	https://www.riigiteataja.ee/ert/act.jsp?id=35650
Protection and Use of Fauna Act	18.11.1998	Riigikogu (Parliament of Estonia)	RT I 1998, 107, 1763; 18.11.1998.	https://www.riigiteataja.ee/ert/act.jsp?id=192123
Planning and Building Act	14.06.1995	Riigikogu (Parliament of Estonia)	RT 1 1995, 59, 1006; 14. 06.1995	https://www.riigiteataja.ee/ert/act.jsp?id=28423
Shores and Banks Protection Act	22.02.1995	Riigikogu (Parliament of Estonia)	RT I 1995, 31, 382; 22.02.1995	https://www.riigiteataja.ee/ert/act.jsp?id=228328

Development Plans, Action Plans and Strategies	Responsible for the Document	Reference
Estonian Housing Development Plan for 2003–2008	MoEAC	http://www.mkm.ee/index.html?id=899
Estonian Aviation Development Plan	MoEAC	http://www.mkm.ee/dokumendid/EEESTI%20LENNUNDUSE%20RIIKLIK%20ARENGUKAVA.htm
Estonian Economic Development Plan for 1999–2003	MoEAC	http://www.mkm.ee/dokumendid/Eesti_majanduse_arengukava_1999__2003.pdf
Estonian Tourism Development Plan 2000–2002	MoEAC	http://www.etfl.ee/atn/arenduskava2000.shtml
GMO Policy	MoE	http://www.envir.ee/looduskaitse/geneetiliselt.html
Development Plans of MoER	MoER	http://www.hm.ee/sisu.php?itemid=32&yh=Ministeerium&subid=
Action Plan for Accession to the EU of Ministry of Environment	MoE	http://www.envir.ee/euro/tegevuskava.html
Shipping Policy	MoEAC	http://www.mkm.ee/dokumendid/Laevanduspoliitika.htm
Nature Conservation Plans	MoE	http://www.envir.ee/euro/euro_tegevus_5.html
South-Estonian Tourism Development Strategy up to 2010	MoEAC	http://southestonia.info/static/files/le_arengustrateegia_2010.pdf
Programme of Measures to Ensure Safe Navigation and to Prevent Marine Casualties	MoEAC	http://www.mkm.ee/dokumendid/Meetmete%20programm%20ohutu%20meres6idu%20tagamiseks%20ja%20laevaavaride%20raholdmiseks.htm
National Programme for the Adoption of the Acquis 1999 – Government of the Republic 1999 Action Plan for Estonia's Accession to the EU	GR	http://www.eib.ee/el/vv_tegevuskava_99/doc2/index.html
Long-Term Sustainable Development Strategy for Agriculture	MoA	http://www.server.ee/~mai/
Regional Airports Development Plan for 2000–2006	MoEAC	http://www.mkm.ee/index.html?id=899
National Strategy and Action Plan for the Conservation of Biological Diversity	MoE	http://www.envir.ee/euro/konventsioonid/Bioi%20mitmekes%20strate%20ja%20tegevuskava%20e.st.pdf
Tallinn Environmental Strategy up to 2010	MoE	http://tallinn.andmevara.ee/oa/page.Tavakasutaja?c=1.1.1.1&id=49067

Projects and Programmes	Responsible for the document	Reference
10 Years After the Convention on Biological Diversity : Indicators - a Tool for Measuring Whether We Are on the Right Path	MoE	
Second National Report on Implementation of the Convention	MoE	http://www.envir.ee/euro/konventsioonid/Biol%20mitmekes%20kon%20riikli.pdf
29 December 2000 is Biological Diversity Day	MoE	http://www.loodus.ee/el/vanaweb/0012/iina.html
Second Baltic State of the Environment Report : Based on Environmental Indicators	MoE	
Biodiversity Management Strategy for Commercial Forests in Estonia. Estonian Forestry Development Programme	MoE	
An Overview of Materials on Biological Diversity (country study)	MoE	
An Overview of Estonia's Biological Diversity. Ministry of Environment of Estonia and UNEP	MoE	
Estonia's First Implementation of Recommendations of Environmental Review	MoE	http://www.envir.ee/saastev/EKKT_Lisad.pdf
Estonian Human Development Report 2001: 1.5. Sustainability of Nature is a Prerequisite to Sustainability of Society	MoE	http://www.iiss.ee/nhdr/2001/1.5.html
Estonia's Pre-Accession Economic Programme	MoEAC	http://www.mkm.ee/dokumendid/Eesti_Litumiseeline_Majandusprogramm.pdf
Estonian National Programme for Natura 2000 for years 2000–2007	GR	http://trip.rk.ee/cgibin/fhw?\$(BASE)=akt&\${OOHTMLJ}=rd&TA=2000&TO=5&AN=1337&KP=2000-07-25
First National Report to the Convention on Biological Diversity	MoE	
Establishment of GIS Based Nature Diversity Monitoring System in Estonia	MoE	
Key points of the Biodiversity Action Plan for Estonia	MoE	
Notice from the Commission Regarding Common Fisheries Policy	MoE	http://www.agri.ee/kalamajandus/%DChthne%20kalanduspoliitika.rtf
Biological Diversity Protection Means and Measures	MoE	
Strategic Environmental Impact Assessment Programme for the Estonian Forest Sector Supplementary Development Plan	MoE	http://www.metsad.ee/aru_mak_smh.html
Natura 2000	MoE	http://www.envir.ee/natura2000/
List of Objects of Significant Spatial Impact	GR	http://estlex.info/estlex/kehtivad/AktDisplay.jsp?id=56790&akt_id=56790
Finland – Estonia Collective Project on Use of EU Environmental Supports for Maintenance of Biodiversity of Agricultural Landscapes	MoA, MoE	http://www.eoy.ee/projektid/pollu.htm
Tallinn Waste Management Plan	Tallinn City Council	http://veeb.tallinn.ee/keskkond/dokumendid/jaاتمekava2001.pdf
Reports of Meetings of Research Association Sustainable Development Discussion Club	MoE	
Workshop on the Practical Implementation of the Convention on Biological Diversity in the Baltic States. 16–18 October 1994, Tallinn	MoE	

Convention on Climate Change							
Acts	Passed	Adopted by	Source	Reference			
Law of Property Act	9.06.1993	Riigikogu (Parliament of Estonia)	RT I 1993, 39, 590	https://www.rigiteataja.ee/ert/act.jsp?id=228618			
Electrical Safety Act	22.05.2002	Riigikogu (Parliament of Estonia)	RT I, 18.06.2002, 49 310	https://www.rigiteataja.ee/ert/act.jsp?id=171142			
Electricity Market Act	11.02.2003	Riigikogu (Parliament of Estonia)	RT I, 10.03.2003, 25, 153	https://www.rigiteataja.ee/ert/act.jsp?id=264412			
Energy Act	11.06.1997	Riigikogu (Parliament of Estonia)	RT I 1997, 52, 833; 2001, 52, 303; 88, 531; 93, 565; 2002, 25, 145; 41, 251; 49, 311; 63, 387; 82, 482	https://www.rigiteataja.ee/ert/act.jsp?id=207127			
Private Schools Act	3.06.1998	Riigikogu (Parliament of Estonia)	RT I 1998, 57, 859	https://www.rigiteataja.ee/ert/act.jsp?id=184759			
European Energy Charter Treaty and Protocol Ratifying Act	11.02.1998	Riigikogu (Parliament of Estonia)	RT II, 01.01.1998, 18	https://www.rigiteataja.ee/ert/act.jsp?id=25517			
Council Directive 1999/31/EC on the landfill of waste	26.04.1999	European Union Council	26.04.1999	http://www.envir.ee/euro/3/1999.31.rtf			
District Heating Act	11.02.2003	Riigikogu (Parliament of Estonia)	RT I, 10.03.2003, 25, 154	https://www.rigiteataja.ee/ert/act.jsp?id=264432			
Vocational Educational Institutions Act	17.06.1998	Riigikogu (Parliament of Estonia)	RT I 1998, 64/65, 1007	https://www.rigiteataja.ee/ert/act.jsp?id=185491			
Natural Gas Act	29.01.2003	Riigikogu (Parliament of Estonia)	RT I, 03.03.2003, 21, 128	https://www.rigiteataja.ee/ert/act.jsp?id=261477			
Land Cadastre Act	12.10.1994	Riigikogu (Parliament of Estonia)	RT I 1994, 74, 1324	https://www.rigiteataja.ee/ert/act.jsp?id=228320			
Land Reform Act	17.10.1991	Riigikogu (Parliament of Estonia)	RT 1991, 34, 426	https://www.rigiteataja.ee/ert/act.jsp?id=543698			
Act on Accession to the Vienna Convention for the Protection of the Ozone Layer and to the Montreal Protocol on Substances that Deplete the Ozone Layer	11.09.1996	Riigikogu (Parliament of Estonia)	RT II, 02.10.1996, 33/34, 119	https://www.rigiteataja.ee/ert/act.jsp?id=25164			



Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, Adopted in 29 June 1990 in London and 25 November 1992 Copenhagen Amendment Ratifying Act	27.01.1999	Riigikogu (Parliament of Estonia)	RT II, 19.02.1999, 3, 15	https://www.rigiteataja.ee/ert/act.jsp?id=25830
Packaging Excise Duty Act	19.12.1996	Riigikogu (Parliament of Estonia)	RK s RT I 1997, 5/6, 31	http://trip.rk.ee/cgi-bin/trhw?\$(BASE)=akt&\$(OOHTML)=ftd&TA=1997&TO=1&AN=31&NR=0
Packaging Act	3.05.1995	Riigikogu (Parliament of Estonia)	RT I 1995, 47, 739	http://lex.andmevara.ee/estlex/kehtivad/AktIDisplay.jsp?id=14896&akt_id=14896
Convention on Environmental Impact Assessment in a Transboundary Context Accession Act	15.11.2000	Riigikogu (Parliament of Estonia)	RT II 2000, 28, 169	https://www.rigiteataja.ee/ert/act.jsp?id=26627
Act on Accession to the Convention on Long-Range Transboundary Pollution and Protocols of the Convention	19.01.2000	Riigikogu (Parliament of Estonia)	RT II, 29.02.2000, 4, 25	https://www.rigiteataja.ee/ert/act.jsp?id=26224
Energy Efficiency of Equipment Act	17.10.2000	Riigikogu (Parliament of Estonia)	RT I 2000, 84, 532	https://www.rigiteataja.ee/ert/act.jsp?id=189910
Pressure Equipment Act	22.05.2002	Riigikogu (Parliament of Estonia)	RT I, 18.06.2002, 49, 309	https://www.rigiteataja.ee/ert/act.jsp?id=171122
Plant Protection Act	15.03.2000	Riigikogu (Parliament of Estonia)	RT I 2000, 29, 169	https://www.rigiteataja.ee/ert/act.jsp?id=192075
Research and Development Organisation Act	26.03.1997	Riigikogu (Parliament of Estonia)	RT I 1997, 30, 471	https://www.rigiteataja.ee/ert/act.jsp?id=186700
Food Act	25.02.1999	Riigikogu (Parliament of Estonia)	RT I 1999, 30, 415	https://www.rigiteataja.ee/ert/act.jsp?id=231125
Minimum Stocks of Liquid Fuel Act	21.03.2001	Riigikogu (Parliament of Estonia)	RT I 2001, 36, 2002	https://www.rigiteataja.ee/ert/act.jsp?id=193441
Liquid Fuel Act	29.01.2003	Riigikogu (Parliament of Estonia)	RT I, 03.03.2003, 21, 127	https://www.rigiteataja.ee/ert/act.jsp?id=261461
Kyoto Protocol to the United Nations Framework Convention on Climate Change Ratifying Act	6.09.2002	Riigikogu (Parliament of Estonia)	RT II, 13.09.2002, 26, 111	https://www.rigiteataja.ee/ert/act.jsp?id=199096
UN Framework Convention on Climate Change Ratifying Act	11.05.1994	Riigikogu (Parliament of Estonia)	RT II, 01.01.1994, 43	https://www.rigiteataja.ee/ert/act.jsp?id=24655

Regulations	Passed	Adopted by	Source	Reference
Requirements for Investment Aid Application Procedure, Procession of Application and Payment of Investment Aid Granted by Special Accession Programme for Agriculture and Rural Development in the Republic of Estonia	28.06.2001	GR	RT I 2001, 60, 363	https://www.riigiteataja.ee/ert/act.jsp?id=581673
Amendment Regulation on Minister of the Environment Regulation no 33 of 17 March 1999 on The Procedure and Methods of the Emission levels of Pollutants into Ambient Air from Combustion Plants	11.07.2003	Ministry of the Environment	RT L 2003, 87, 1279	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=56950&akt_id=56950
Requirements for Organic Livestock Production	20.02.2003	MoA	RT L, 28.02.2003, 29, 432	https://www.riigiteataja.ee/ert/act.jsp?id=258430
Requirements for Organic Plant Production	20.02.2003	MoA	RT L, 28.02.2003, 29, 433	https://www.riigiteataja.ee/ert/act.jsp?id=258407
Centre of Forest Protection and Silviculture Statutes	20.03.2003	MoE	RT L 2003, 41, 597	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=54485&akt_id=54485
Establishment of Rates of Damage Caused to Environment by Violation of Provisions of Forestry Law	8.06.1999	GR	RT I 1999, 52, 570	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=31012&akt_id=31012
Limit Values of Emission Levels of Pollutants, of Smoke in Exhaust Gases and of the Noise Level of Motor Vehicles	12.06.2003	MoE	RT L 2003, 74, 1085	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=56491&akt_id=56491
Requirements for Equipment Used in the Handling of Chemicals	29.12.1999	MoEAC	RT L, 17.01.2000, 11, 105	https://www.riigiteataja.ee/ert/act.jsp?id=26171
List of Objects of Significant Spatial Impact	15.07.2003	GR	RT I 2003, 54, 369	http://estlex.info/estlex/kehivad/AktDisplay.jsp?id=56790&akt_id=56790
Methods of Determination of Emissions of Pollutants into Ambient Air from Wood Processing	11.07.2003	MoE	RT L 2003, 87, 1280	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=56951&akt_id=56951
Limit Values of Emissions of a Pollutant Per Unit of Volume of Gases Emitted from Large Combustion Plants	28.04.2003	MoE	RT L 2003, 55, 788	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=55556&akt_id=55556
Establishment of State Register of Fertilizers	13.10.1998	GR	VV m RT I 1998, 94, 1505	http://trip.rk.ee/cgi-bin/thw/?\$(BASE)=akt&\$(OOHTML)=rtd&TA=1998&TO=1&N=1505
Requirements for Energy Efficiency and Energy Performance Level of Hot-Water Boilers Fired with Liquid and Gaseous Fuels	20.06.2002	MoEAC	RT L, 05.07.2002, 74, 1126	https://www.riigiteataja.ee/ert/act.jsp?id=177837
Approval of Classifications of Key Biotopes and Guidelines for Selection of Key Biotopes	7.07.1999	MoE	RT L 1999, 114, 1487	http://lex.andmevara.ee/estlex/kehivad/AktDisplay.jsp?id=31581

Development Plans, Action Plans and Strategies	Responsible for the Document	Reference
Estonian Housing Development Plan for 2003–2008	MoEAC	http://www.mkm.ee/dokumendid/Elamumaj_arengukava_03-08.doc
Estonian Electric Power Development Plan up to 2030	Eesti Energia	Internal Document
Estonian Air Navigation National Development Plan 2000–2006	GR	http://www.mkm.ee/dokumendid/EESTI%20LENNUNDUSE%20RIIKLIK%20ARENGUKAVA.htm
Estonian Regional Development Strategy	MoEAC	http://www.erda.ee/pdf/Eesti_Regionaalarengu_Strateegia.PDF
Draft National Programme of Reduction of Greenhouse Gas Emissions for 2003-2012 + Strategic Environmental Impact Assessment	At approval as a directive of the GR	http://www.envir.ee/oigusaktid/eeinoud/KHG_programm_27-05-03.pdf
National Programme of Reduction of Emission of Pollutants into Ambient Air from Large Combustion Plants for 1999–2003	GR	https://www.riigiteataja.ee/ert/act.jsp?id=83111
Tallinn Energy Sector Long-term Development Plan (2002–2017)	Tallinn City Government	
Other Waste Management Plans	MoE	http://www.envir.ee/jaatmed/jaatmekavad.html
National Programme for the Adoption of the Acquis 2002–2003	GR	http://www.eib.ee/pages.php/01030103
Ambient Air Protection Plans for 2000–2003	MoE	http://www.envir.ee/euro/euro_tegevus_2.html

Projects and Programmes	Responsible for the document	Reference
Estonia as a Member State of UN Framework Convention on Climate Change	MoE	Tiit Kallaste, Säastva Eesti Instituut, 2001 ([Tallinn] : Infotrikk)
Estonian Sustainable Development Account 2002	MoE	http://www.envir.ee/saastev/tervik-2002.pdf
Estonia's Way from Åhus to Kyoto	MoE	http://www.seit.ee/projects/arhus_interneti.pdf
Operational Programme for Energy Conservation Programme for 2001–2005	MoEAC	http://www.mkm.ee/dokumendid/Energias22stu_sihtprogrammi_rakenduskaava.doc
Estonia's First National Communication Under the UN Framework Convention on Climate Change	MoE	
Estonia's Second National Report Under the UN Framework Convention on Climate Change	MoE	
Estonia's Third National Communication Under the UN Framework Convention on Climate Change	MoE	
Operational Programmes of Ida-Virumaa Employment Programme of 2002	MoEAC, MoIA	http://www.mkm.ee/dokumendid/Ida-Virumaa_toohfive_programmi_rakenduskaavad_2002.doc
Ida -Virumaa National Employment Programme	MoEAC, MoIA	http://www.mkm.ee/dokumendid/Ida-Virumaa_riiklik_tooh6iveprogramm.pdf
Tallinn Waste Management Plan	Tallinn City Council	http://veeb.tallinn.ee/keskkond/dokumendid/jaatmekava2001.pdf

Convention to Combat Desertification									
Acts	Passed	Adopted by	Source	Reference					
Public Information Act	15.11.2000	Riigikogu (Parliament of Estonia)	RT I 2000, 92, 597	https://www.riigiteataja.ee/ert/act.jsp?id=264970					
Building Act	15.05.2002	Riigikogu (Parliament of Estonia)	RT I 2002, 47, 297	https://www.riigiteataja.ee/ert/act.jsp?id=264964					
Chemicals Act	6.05.1998	Riigikogu (Parliament of Estonia)	RT I 1998, 47, 697	https://www.riigiteataja.ee/ert/act.jsp?id=608693					
Environment Supervision Act	6.06.2001	Riigikogu (Parliament of Estonia)	RT I 2001, 56, 337	https://www.riigiteataja.ee/ert/act.jsp?id=234930					
Land Valuation Act	9.02.1994	Riigikogu (Parliament of Estonia)	RT I 1994, 13, 231	https://www.riigiteataja.ee/ert/act.jsp?id=185701					
Rural Development and Agricultural Market Regulation Act	11.10.2000	Riigikogu (Parliament of Estonia)	RT I 2000, 82, 526	https://www.riigiteataja.ee/ert/act.jsp?id=608703					
Rural Development and Agricultural Market Regulation Act	11.10.2000	Riigikogu (Parliament of Estonia)	RT I 2000, 82, 526	https://www.riigiteataja.ee/ert/act.jsp?id=264482					
Land Cadastre Act	12.10.1994	Riigikogu (Parliament of Estonia)	RT I 1994, 74, 1324	https://www.riigiteataja.ee/ert/act.jsp?id=22302					
Land Readjustment Act	25.01.1995	Riigikogu (Parliament of Estonia)	RT I 1995, 14, 169	https://www.riigiteataja.ee/ert/act.jsp?id=214991					
Land Improvement Act	20.04.1994	Riigikogu (Parliament of Estonia)	RT I 1994, 34, 534	https://www.riigiteataja.ee/ert/act.jsp?id=256062					
Land Reform Act	17.10.1991	Riigikogu (Parliament of Estonia)	RT 1992, 10, 145	https://www.riigiteataja.ee/ert/act.jsp?id=543698					
Shores and Banks Protection Act	22.02.1995	Riigikogu (Parliament of Estonia)	RT I 1995, 31, 382	https://www.riigiteataja.ee/ert/act.jsp?id=228328					
Integrated Pollution Prevention and Control Act	10.10.2001	Riigikogu (Parliament of Estonia)	RT I 2001, 85, 512	https://www.riigiteataja.ee/ert/act.jsp?id=186712					
Water Act	11.05.1994	Riigikogu (Parliament of Estonia)	RT I 1994, 40, 655	https://www.riigiteataja.ee/ert/act.jsp?id=191584					

Regulations	Passed	Adopted by	Source	Reference
Approval of Procedure for Maintaining Ground and Structures During Underground Mining	24.07.1997	MoEAC	RTL 1997, 211, 1116	https://www.niigiteataja.ee/ert/act.jsp?id=22705
Requirements to Technical Construction Documentation for Construction Works of Different Types	27.12.2002	MoEAC	RTL, 2003, 3, 28	https://www.niigiteataja.ee/ert/act.jsp?id=234188
Procedure of Discharge Effluent into a Water Body or into Soil	31.07.2001	GR	RT I, 2001, 69, 424	https://www.niigiteataja.ee/ert/act.jsp?id=27210
Approval of Land Board Statutes	16.03.1999	MoE	RTL, 1999, 66, 857	https://www.niigiteataja.ee/ert/act.jsp?id=90586
Establishment of Register of Undertakings Operating in a Field of Land Improvement and Statutes for the Maintenance of Register	17.06.2003	GR	RTI, 2003, 47, 335	https://www.niigiteataja.ee/ert/act.jsp?id=600224
Procedure for Free Agricultural Land and Free Forest Land Privatisation as Specified in Land Reform Act §§ 231 and 232	4.04.2000	GR	RT I 2000, 30, 181	https://www.niigiteataja.ee/ert/act.jsp?id=26299
Approval of Forest Survey and Management Planning Guidelines	17.03.1999	MoE	RTL 1999, 69, 902	https://www.niigiteataja.ee/ert/act.jsp?id=22868
Establishment of State Register of Accounting of Forest Resource	7.10.1999	GR	RT I, 1999, 75, 706	https://www.niigiteataja.ee/ert/act.jsp?id=26062
Establishment of State Register of Accounting of Forest Resource	7.10.1999	GR	RTI, 1999, 75, 706	https://www.niigiteataja.ee/ert/act.jsp?id=26062
National Heritage Board Statutes	28.03.2002	MoE	RTL, 2002, 48, 666	https://www.niigiteataja.ee/ert/act.jsp?id=94885
Protection Rules for Pandivere and Adavere-Põltsamaa Nitrate-sensitive Protected Area	21.01.2003	GR	RTI, 2003, 10, 49	https://www.niigiteataja.ee/ert/act.jsp?id=242635
Approval of the Simplified National Curriculum for Basic Schools (Supplementary Learning Curriculum)	24.03.1999	MoER	RTL 2002, 8, 67	https://www.niigiteataja.ee/ert/act.jsp?id=238554
Statutes for Maintenance of State Register of Agricultural Support and Agricultural Parcels	1.10.2002	GR	RT I, 2002, 82, 484	https://www.niigiteataja.ee/ert/act.jsp?id=203754
Format of Field Record and the Procedure for Keeping Field Record	9.04.2003	MoA	RTL, 2003, 50, 742	https://www.niigiteataja.ee/ert/act.jsp?id=565745
Procedure for the Implementation of National Environmental Monitoring Sub-Programmes	15.02.2000	MoE	RTL, 2000, 29, 352	https://www.niigiteataja.ee/ert/act.jsp?id=81763
Establishment of State Environmental Monitoring Reference Area	26.10.1999	MoE	RTI, 1999, 81, 741	https://www.niigiteataja.ee/ert/act.jsp?id=26075
Rules for the Safe Use of Plant Protection Products	5.10.2000	GR	RT I 2000, 77, 493	https://www.niigiteataja.ee/ert/act.jsp?id=26549
Standards and Requirements to Road Design Work	28.09.1999	MoTC	RTL 2000, 23, 303	https://www.niigiteataja.ee/ert/act.jsp?id=26215
Water Protection Requirements for Fertiliser, Manure and Silage Storage and Requirements for Use and Storage of Mineral Fertilisers, Manure and Silage Juice Storages	28.08.2001	GR	RT I, 2001, 72, 443	https://www.niigiteataja.ee/ert/act.jsp?id=23964

Development Plans, Action Plans and Strategies	Responsible for the Document	Reference
Ministry of Environment National Environmental Action Plan and EU PHARE draft programme 1998–2003	MoE	https://www.envir.ee/neap/1f6.html
Estonian Economic Development Plan for 1999–2003	MoEAC	http://www.mkm.ee/dokumendid/Eesti_majanduse_arengukava_1999_2003.pdf
Development plans of MoER	MoER	http://www.hm.ee/sisu.php?itemid=32&yh=Ministeerium&subid=
Ida-Virumaa Development Plan 2004+ Task	Ida-Viru County Government	https://www.ivmv.ee/?id=796
ISPA Environmental Strategy	MoE	http://www.envir.ee/euro/ISPA%20strateegia.pdf
Järvamaa Development Strategy until 2005	Järvamaa County Government	http://www.jarvamv.ee/index.php?show=materjalid&ala=jarvamaa_arengustrateegia_aastani_2005
Action Plan for Accession to the EU of Ministry of Environment	MoE	http://www.envir.ee/euro/tegevuskava.html

Development Plans, Action Plans and Strategies	Responsible for the Document	Reference
Ministry of Environment National Environmental Action Plan and EU PHARE draft programme 1998–2003	MoE	https://www.envir.ee/neap/1f6.html
Estonian Economic Development Plan for 1999–2003	MoEAC	http://www.mkm.ee/dokumendid/Eesti_majanduse_arengukava_1999_2003.pdf
Development plans of MoER	MoER	http://www.hm.ee/sisu.php?itemid=32&yh=Ministeerium&subid=
Ida-Virumaa Development Plan 2004+ Task	Ida-Viru County Government	https://www.ivmv.ee/?id=796
ISPA Environmental Strategy	MoE	http://www.envir.ee/euro/ISPA%20strateegia.pdf
Järvamaa Development Strategy until 2005	Järvamaa County Government	http://www.jarvamv.ee/index.php?show=materjalid&ala=jarvamaa_arengustrateegia_aastani_2005
Action Plan for Accession to the EU of Ministry of Environment	MoE	http://www.envir.ee/euro/tegevuskava.html

Projects and Programmes	Responsible for the document	Reference
Expert Assessment on Implementation of Estonian National Soil Monitoring Programme Part I	MoE	http://www.seiremonitor.ee/alam/11/?leht=11_1_aru2000
Expert Assessment on Implementation of Estonian National Soil Monitoring Programme Part II	MoE	http://www.seiremonitor.ee/alam/11/11_2_aru00_2bosa.doc
I Level Forest Monitoring "Soil Water"	MoE	http://www.seiremonitor.ee/alam/07/?leht=07_1_aru02#2.3
Biological Monitoring of Soil	MoE	http://www.seiremonitor.ee/alam/06/?leht=06_45_aru2001

ANNEX 7. Stakeholders

Public sector institutions:

Eesti Linnade Liit	www.ell.ee
Eesti Omavalitsusliitude Ühendus	www.eoly.ee
Eesti Vabariigi President (Presidendi kantselei)	www.kadriorg.ee
Education- ja Teadusministeerium	www.hm.ee
Justiitsministeerium	www.just.ee
Keskkonnaministeerium	www.envir.ee
Eesti Kaitsealade Liit	www.ekal.org.ee/ekal
Eesti Kiirguskeskus	www.envir.ee/kiirgus
Eesti Metsakorralduskeskus	
Info- ja Tehnokeskus	www.keskkonnainfo.ee
Keskkonnainspeksioon	www.kki.ee
Keskkonnauuringute Keskus	www.envir.ee/eerc
Loodus- ja Maastikukaitsealad	eelis.ic.envir.ee/eelis
Maa-amet	www.maaamet.ee
Maakondlikud keskkonnateenistused (15)	
Metsakaitse- ja Metsauenduskeskus	www.metsad.ee
Riigimetsa Majandamise Keskus	www.rm.k.ee
Majandus- ja Kommunikatsiooniministeerium	www.mkm.ee
Eesti Tehnoloogiaagentuur	www.estag.ee
Energiaturu Inspeksioon	www.eti.gov.ee
Ettevõtluse Arendamise Sihtasutus	www.eas.ee
Lennuamet	www.ecaa.ee
Maanteeamet	www.mnt.ee
Raudteeamet	www.rdtamet.ee
Tehnilise Järelevalve Inspeksioon	www.tji.ee
Veeteede Amet	www.vta.ee
Põllumajandusministeerium	www.agri.ee
Maaelu arengu osakond	
Põllumajanduskeskkonna ja Taastuvate ressursside büroo	
Põllumajanduse Registrite ja Informatsiooni Amet	web.pria.ee
Taimse Materjali Kontrolli Keskus (Põllumajandusuuringute Keskus)	pmk.agri.ee
Rahandusministeerium	www.fin.ee
SA Keskkonnainvesteeringute Keskus	www.kik.ee
Regionaalsed Energiakeskused	
Riigikogu	www.riigikogu.ee
Sotsiaalministeerium	www.sm.ee
Tallinna Botaanikaead	www.tba.ee
Tallinna Loomaaed	www.tallinnzoo.ee
Välisministeerium	www.vm.ee

Non-governmental organisations:

Arenguprogrammide Keskus EMI-ECO	www.emieco.ee
Akadeemiline Põllumajanduse Selts	www.eau.ee/~aps
Arendus- ja innovatsioonikeskus Livonia	www.livonia.ee/mtv
Avatud Educatione Liit	www.ngonet.ee/ahl
Eesti 4H	www.eesti4h.ee
Eesti Agraarökonoomistide Assotsiatsioon	www.eau.ee/~eaa
Eesti Biokütuste Ühing	hot.ee/eby
Eesti Erametsaliit	www.erametsaliit.ee
Eesti Gaasiliit	www.online.ee/~egl/default.htm
Eesti Geograafia Selts	www.akadeemia.ee/est/seltsid/EGS
Eesti Jõujaamade ja Kaugkütte Ühing	www.eph.ee
Eesti Jäätmekäitlejate Liit	www.ejkl.ee
Eesti Kaubandus-Tööstuskoda	www.koda.ee
Eesti Keskkonnaühenduste Koda	www.rohelised.org
Eesti Keskkonnainstituut	www.ekki.ee
Eesti Looduskaitse Selts	www.elks.ee
Eesti Noorte Looduskaitse Ühing	www.enly.ee
Eesti Ornitoloogiaühing	www.eoy.ee
Eesti Roheline Liikumine, "Sorex"	www.sorex.ee
Eestimaa Looduse Fond	www.elfond.ee

Nõmme Tee Selts	
Pärandkoosluste Kaitse Ühing	www.pky.ee
Säästva Eesti Instituut	www.seit.ee
Saarte ja Ranniku Uurimiskeskus Arhipelaag	www.arhipelaag.ee
Sihtasutus REC Estonia	www.recestonia.ee
Siseveeteede Arendamise Sihtasutus	
Tallinna Linnuklubi	www.tallinna-linnuklubi.ee
Tallinna Looduskaitse Selts	
Tallinna Teadlaste Maja	
Tartu Linnuklubi	www.hot.ee/tartulinnuklubi
Ökoloogiliste Tehnoloogiaste Keskus	www.ceet.ee

Enterprises:

AS Eesti Gaas	www.gaas.ee
AS Balti Laevaremonditehas	www.bsr.ee
AS Eesti Raudtee	www.evr.ee
AS Elektriraudtee	www.elektriraudtee.ee
AS Estonian Air	www.reisi.net
AS Kunda Nordic Tsement	www.knc.ee
AS Masp	www.masp.ee
AS Narva Elektriijaamad	www.powerplant.ee
AS Nitrofert	www.nitrofert.ee
AS Norma	
AS Pakkend	www.pakkend.ee
AS Propaan	www.propaan.ee
AS Sylvester	www.sylvester.ee
AS Tallinna Lennujaam	www.tallinn-airport.ee
AS Tallinna Sadam	www.portoftallinn.com
AS Viru Keemia Grupp	www.vkg.ee
AS Ökosil	www.ecosil.ee
Cleanaway Eesti AS	www.konteinerveod.ee
Edelaraudtee AS	www.edel.ee
Eesti Energia AS	www.energia.ee
Eesti Põlevkivi AS	www.ep.ee
Eesti Talleks AS	
Elcoteq Tallinn AS	
Kemira Agro Eesti AS	www.kemira-growhow.com/EST
MasterTeam OÜ	www.masterteam.ee
Ragn-Sells AS	www.ragnsells.ee
Stora Enso Mets AS	www.storaenso.ee
Tallinna Autobussikoondise AS	www.tak.ee
Tallinna Prügila AS	www.landfill.ee
Tallinna Trammi- ja Trollibussikoondise AS	www.ttk.ee

Research and training institutions:

Eesti Energeetika Instituut	www.eeri.ee
Eesti Majanduse Instituut	www.tami.ee
Eesti Maaviljeluse Instituut	www.eria.ee
Eesti Põllumajandusülikool	www.eau.ee
Keskkonnakaitse Instituut	www.envinst.ee
Agrobiokeskus	www.eau.ee/~eabc
Forestrylik Uurimisinstituut	www.eau.ee/~muurim
Zoologia ja Botaanika Instituut	www.zbi.ee
Eesti Teaduste Akadeemia	www.akadeemia.ee
Looduskaitsekomisjon	
Eesti Täiskasvanute Koolitajate Assotsiatsioon Andras	www.andras.ee
Jõgeva Sordiaretuse Instituut	www.jpbi.ee
Maaelu Arengu Instituut	www.andras.ee/mai
Tallinna Pedagoogikaülikool	www.tpu.ee
Ökoloogia Instituut	www.eco.edu.ee
Tallinna Tehnikakõrgkool	www.ttk.ee
Tallinna Tehnikaülikool	www.ttu.ee
Energeetikateaduskond	

Mehaanikateaduskond
Majandusteaduskond
Ehitusteaduskond
Põlevkivi Instituut
Keskonnatehnika instituut
Tartu Ülikool
Botaanika ja Ökoloogia Instituut
Zooloogia ja Hüdrobioloogia Instituut
Geograafia Instituut
Rakendusökoloogia Keskus

www.ttu.ee/keskkond
www.ut.ee
www.botany.ut.ee
www.ut.ee/BGZH
www.geo.ut.ee

Annex 8. Questionnaires

Office of the President of the Republic
Environmental Committee of the Parliament
Ministry of Education and Research
Ministry of Social Affairs
Ministry of Finance
Ministry of Economic Affairs and Communications
Ministry of Agriculture
Ministry of Environment

Collection of information for project implementation

The MoE has undertaken a National Capacity Needs Self-Assessment for Global Environmental Management, supported by the United Nations Environment Programme (UNEP). The aim of the undertaking is to determine Estonia's development possibilities for implementing the commitments arising from the Rio conventions that Estonia has ratified (United Nations Convention on Biological Diversity, UNCBD; Convention on Climate Change, UNFCCC) and establish the feasibility of acceding to the Convention to Combat Desertification (UNCCD). In order to ensure maximum efficiency of the project in determining Estonia's development possibilities and approval of the resulting action plan by the Government of the Republic, we would like to know your proposals as to which national documents the project expert groups should analyse in more detail in their work. Please use the enclosed format in your reply. We would also like to know, which legislative means ensure the implementation of the conventions in your administrative area, which projects and programmes have been launched for this purpose, how have the results of these projects and programmes been implemented and which other activities should be undertaken.

Please send your reply on paper media to the Nature Conservation Department of the MoE by 11 September 2003. Please send the enclosed table also in electronic format to lilika.kais@ekm.envir.ee.

Allan Gromov
Deputy Secretary General on International Cooperation, Chairman of Consultative Committee

Encl: Table, 1 page
Lilika Käis 6 262 877

Encl:

1. Proposals as to which national documents the project expert groups should analyse:

Name of document	Passed	Adopted by	Reference /Address

2. Implementation of conventions

2.1. Documents related to implementation of conventions

Name of document	Passed	Adopted by	Reference /Address

2.2. Projects and programmes launched

Name of project or programme	Time of carrying out the project or programme	Responsible unit	Results, their implementation	Reference /Address

2.3. Activities to be undertaken

Name of project or programme	Responsible unit	Expected results, their implementation

Non-governmental organisations and enterprises

Over the past decades more and more attention has started to be paid to global environmental problems. Three very important international conventions were adopted in 1992 in Rio de Janeiro: Convention on Biological Diversity, Framework Convention on Climate Change and Convention to Combat Desertification. Estonia has ratified the first two of these conventions.

The MoE has undertaken a National Capacity Needs Self-Assessment for Global Environmental Management, supported by the United Nations Environment Programme (KEKO - http://www.eco.edu.ee/?_est.rakendus). The aim of the undertaking is to determine Estonia's development possibilities for implementing the commitments arising from the Rio conventions and establish the feasibility of acceding to the Convention to Combat Desertification.

In our opinion it is very important to involve in this work non-governmental organisations and enterprises. Given the leading role of your organisation in your respective field, we request your expert opinion about the implementation of the above-mentioned conventions in Estonia. To do so, please express your opinion, based on your activities, by answering the questions enclosed. We would also like to know your proposals as to which national documents the project expert groups should analyse in more detail in their work.

Please send your reply on paper media by 11 September 2003 to:
NCSA Project
Institute of Ecology at Tallinn Pedagogical University
Kevade 2, Tallinn 10137

If possible, please send your reply also in electronic format to mihkel@eco.edu.ee

I thank you in advance

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Prof. Jaan-Mati Punning
NCSA Project Manager
Director of Institute of Ecology at Tallinn Pedagogical University
Additional information:
Mihkel Kangur
tel 6 622 187

Encl:

Proposals as to which national documents (laws, regulations and orders, strategies, development plans, action plans etc) the project expert groups should analyse:

Name of document	Passed	Adopted by	Reference /Address

Are the positions of this document in conflict with other documents (please state, with which other documents)?

How do you perceive your involvement with the Convention on Biological Diversity, Convention on Climate Change and Convention to Combat Desertification⁷, is your involvement sufficient? How has the state supported you in this? What could be your contribution to implementing the conventions?

How is communication between you and national institutions organised in issues pertaining to the conventions? Are there any constraints? What is your view of the solutions?

In your opinion, which national activities/legislative changes should be undertaken in order to better implement the conventions in Estonia?

In your opinion, what is the outlook for implementing the conventions in Estonia, could there be difficulties in implementing any of the conventions or any part thereof?

In your opinion, how high is public awareness in this field?

⁷ Convention on Biological Diversity, RT II 1994, 13, 41, <https://www.riigiteataja.ee/ert/act.jsp?id=24654>
Framework Convention on Climate Change, RTII, 01.01.1994, 43, <https://www.riigiteataja.ee/ert/act.jsp?id=24655>
Convention to Combat Desertification, <http://www.unccd.int/convention/menu.php>