Republic of Latvia

NATIONAL ENVIRONMENTAL POLICY PLAN

2004 – 2008

SUMMARY

RIGA, 2004

Approved by the Cabinet of Ministers of the Republic of Latvia (04.02.2004.)

The National Environmental Policy Plan has been worked out according to requirements of Article 8 of the Law "On Environmental Protection" and Order No 436 of the Cabinet "On Guidelines of Sustainable Development of Latvia" of 15 August 2002.

The National Environmental Policy Plan takes into account the European Union standard acts, policy documents, including the 6 European Environmental Protection Agenda "Environment 2010: Our Future, Our Choice", as well as binding documents of the UN and other international institutions.

The National Environmental Policy Plan together with other planning documents of the respective level in economical and social sphere is to become a mutually united basis for establishment and implementation of the state sustainable development policy.

Fulfilment of the goals of the Environmental Policy is to result in achievement of the main objective: assurance of environmental conditions that are beneficial to human health and will increase the public welfare and human lifespan, thus making the living standard and the level of economic development close to the average level in the European Union countries.

The following key conclusions have been made after analysing the environmental situation in Latvia and taking into account strategic guidelines of national economy industries:

1. Low-residue production based on modern technologies is to be implemented for efficient use of natural resources assuring high energy effectiveness and establishing the hazardous waste management infrastructure. Implementation of the principle „the polluter pays" will result in reduction of the quantity of pollutants emitted into air, water and soil.

2. The main wealth of Latvia and the base of its welfare is land, which is not used in a sustainable way. Developing biological and environmentally friendly agriculture, as well as generation of income that is alternative to agriculture, it is vital to retain biological diversity and to prevent the rural landscape degradation, thus assuring sustainable use of agroenvironmental resources.

3. Intensive transport traffic and air pollution in large cities become problems on the state scale. Within the next few years the task of the Ministries of Environment and local communities of Transport and Communications will be to improve air quality, using economic and organisation methods, as well as emphasising the growing importance of transport planning.

4. Although Latvia has sufficient water resources to satisfy its population and business needs, not all people of Latvia receive drinking water conforming to requirements of standard acts. Therefore special attention is paid to improvement of water quality and successful progress of initiated programmes.

5. Latvia has a great diversity of ecosystems and their natural structures, as well as local wild species, agricultural plants and animal species. Such diversity is to be retained not only for assurance of the healthy living

environment and sustainable development in Latvia, but also in fulfilment of international liabilities.

6. Including requirements of standard acts in planning documents of all levels is of great importance for implementation of the National Environmental Policy Plan.

7. Informing and wider involvement of society in settlement of environmental issues is of decisive importance in forming a civil society.

The National Environmental Policy Plan defines environmental protection principles, main goals of the Policy and measures for their achievement. Special attention is paid to integration of the Environmental Policy in all industries of Latvian national economy, as well as at the level of national, regional and local planning. However, implementation of specific measures will have to be adjusted together with development of the annual state budget and according to updated analysis of the environmental situation in Latvia.

The National Environmental Policy Plan is aimed at growing effectiveness of environmental measures, wider use of economic methods and modernisation of production processes. The Ministry of Environment will continue the policy of co-operation with power industry and industrial production, transport, forest, agriculture, health protection and other industries during implementation of the National Environmental Policy Plan, in order to include environmental requirements in policy planning documents and standard documents of such industries. More attention will be paid to the environmental impact assessment. The system of environmental indications will be improved for evaluation of effectiveness of the National Environmental Policy Plan implementation. The National Environmental Monitoring Programme will be used as an important element.

The National Environmental Policy Plan sets political guidelines appropriate decision-making in the following spheres:

- improvement of environmental standard acts and the environmental institutional system,
- reduction of environmental pollution,
- protection and preservation of environmental situation and individual ecosystems of Latvia,
- improvement of the system of obtaining and processing of environmental information, to become a basis of decision-making concerning environmental protection and sustainable development,
- informing society of the environmental situation, development of its understanding of basic issues of environmental protection and involvement in the decision-making process in environment related issues.

In order to succeed in implementation of the National Environmental Policy Plan, considerable funds are envisaged. Projection of their amounts is shown in Table 1.

***Table 1. Funding for development of the environmental protection infrastructure**, million lats.*

	2004.	**2005.**	**2006.**	**2007.**	**2008.**
Water system – investments in infrastructure					
European Union funding	16.674	21.090	103.437	85.379	59.228
State budget	0.749	11.343	7.391	—	2.870
Own funds	9.231	12.294	10.646	15.225	11.057
Total	**26.654**	**44.726**	**121.474**	**100.604**	**73.155**
Waste management - investments in infrastructure					
European Union funding	6.228	6.080	6.863	7.368	3.924
State budget	2.581	1.358	1.348	—	—
Own funds	2.850	1.998	2.291	1.081	1.340
Total	**11.659**	**9.436**	**10.502**	**8.449**	**5.263**

After its accession to the European Union, Latvia will have access to funds of the Cohesion Fund and the European Regional Development Fund for appropriate arrangement of its environmental protection infrastructure (Table 2).

Table 2. Funds available to Latvia from the European Union Funds for funding of environmental protection measures, million lats.

Fund	**2004.**	**2005.**	**2006.**
Cohesion fund	65.0	54.0	54.0
European Regional Development Fund *	10.3	14.4	15.3

It will be possible to rely upon approximately 12 million lats for implementation of measures of the National Environmental Policy Plan annually (Table 3).

Table 3. Projected natural resources tax, million lats (without taking into account additional objects, on which the national resources tax may be levied).

	2004.	**2005.**	**2006.**	**2007.**	**2008.**
State budget	9.61	9.75	9.87	9.97	10.06
Municipal budget	2.00	2.00	2.00	2.00	2.00

Current institutional structure will be used for implementation of the Environmental Policy Plan, with new functions being assigned to current institutions, if required. Great attention will be paid to consolidation and encouragement of mutual division of institutions.

8 Regional Environmental Boards (the structure may be optimised according to the administrative territorial reform), the Environmental State Inspectorate and the Marine Environmental Board issue permissions and perform supervision functions.

The Nature Protection Board and administrations of specially protected territories will be responsible institutions in charge of nature conservation.

The Radiation Safety Centre will perform all state functions in the sphere of radiation and nuclear safety.

The State Geology Service will be in charge of managing bowels of the earth and water resources.

The Latvian Environmental Agency and the Latvian Hydrometeorological Agency will fulfil monitoring functions, as well as render information to society.

It is envisaged to improve co-operation between state institutions and municipalities.

Involvement of the public will continue to become of greater importance, using different advisory councils.

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2004 – 2008

INFORMATIVE SECTION

RIGA, 2004

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INTRODUCTION

This National Environment Policy Plan replaces the first Latvian Environmental Protection Policy Plan developed by the Ministry for Environmental Protection and Regional Development in 1994 and approved by the Cabinet of Ministers in 1995.

The National Environmental Policy Plan represents a comprehensive, strategic document, integrated with other plans at an appropriate level. The Plan is scheduled to be implemented in the next five years. Some goals will, however, be only attainable within a much longer period of time.

By its degree of detailed elaboration and solutions contained therein the National Environmental Policy Plan is more of a programme established under Cabinet Rules of Order rather than a plan. However, in view of the possibility that conceptual discussions may still be held about suggested priorities and activities, the document is seen as a medium-term programme while its title (Plan) is applied pursuant to the Law on Environmental Protection.

Preparations for the development of the National Environmental Policy Plan were started at a politically saturated time when the attention of the global community was attracted by the United Nations 'Millennium Declaration', Declaration and Action Plan adopted at the Johannesburg Summit Rio+10 hosted by the United Nations, the 6th European Environment Action Programme 'Environment 2010: Our future, our choice', and the Action Programme for the 21st century adopted by countries of the Baltic Sea Region.

Documents adopted by the Third European Ministerial Conference on Environment and Health (London, 1999), including the Charter on Transport, Environment and Health and instructions on the Implementation of National environment and health action plans in partnership are to be taken into account by Latvia.

These significant international documents bring in the foreground issues relating to human life quality, improvement of well-being and health, elimination of poverty, environmental protection and sustainable economic development.

Environmental, economic and social issues are in the centre of attention of the Latvian society. Despite environmental improvement, new problems gain topicality in Latvia: increasing allergic sickness rates and raised awareness by the population about the spread of genetically modified food. In view of the interaction between environment and health, the National Environmental Policy Plan must be actualised and the 2001 Society health strategy implemented.

Conventions and protocols, and other international documents, as signed or accepted by Latvia, lay down liabilities and obligations of the country on a global scale.

Latvia is affected by transboundary flow of pollution produced by other countries, which depends on global processes, in particular on the climate and environmental resources. In the meantime, Latvia must undertake liability for

activities which can affect neighbouring countries and, though on a small scale, environmental situation in Europe and in the world.

International co-operation in the field of environment has brought good results not only at the state administration level but also on the municipal level, which in turn has enabled starting major projects aimed at improving environmental infrastructure. Significant assistance has been provided to Latvia by member countries of the European Union, such as Denmark, Sweden, Germany, Netherlands, Belgium, Finland, international financial organisations, as well as the USA, Japan, Canada and other countries. However, as the economical situation improves, Latvia will in future change from a recipient into a donor country.

The National Environmental Policy Plan was developed by evaluating the goals attained by means of the former National Environmental Policy Plan and on the basis of foreign and international experience in preparing similar documents.

The National Environmental Policy Plan is the result of wide community involvement. Major principles were discussed at the meeting of Latvian Environmental NGOs and Professional Associations and at the Environmental Consulting Council prior to starting the work. Representatives were delegated by social organisations and professional associations for work in task groups concerned with developing the National Environment Policy Plan.

Principles of environmental protection have gained popular support, and competent authorities and legal entities are required through the agency of public institutions to comply with these principles and to bear responsibility for inactivity. Significant changes are still to be introduced, however, in daily activities of general public, entrepreneurs and officials to provide for the conservation and improvement of the natural and anthropogenic environment in the country.

As national society develops, state administration will increase the scope of obligations, while providing proper funding; responsibility of municipal institutions and organisations concerned with social welfare will also increase. These preconditions will provide an opportunity to change the attitude towards environmental protection issues in the coming years so that it would become the responsibility of each member of public and the entire community.

An assessment of the environmental situation in Latvia and comparison thereof to the situation in EU countries shows that many environmental areas still require sustained and thorough efforts and adequate funding. The transition periods established within the environmental protection framework during Latvian accession talks with the European Union, which are included in the National Environment Policy Plan, testify to this.

Introduction of the National Environment Policy Plan cannot stop at merely carrying out the duties entrusted to the Ministry of Environment since issues related to environmental protection play an increasingly important role in the economic development of the country, in particular in fields such as

manufacture, transport and social services as well as social sphere. Successful implementation of the plan will only be possible through close co-operation between state administration, municipalities, public organisations and general public.

I. THE ENVIRONMENT

This chapter includes atmospheric air protection (air pollution reduction, reduction of the negative effects of global changes), protection of the hydrosphere (providing for water quality), protection of the lithosphere (sustainable use of subterranean depths, waste management, survey and improvement of polluted sites), environmental protection (preservation of biodiversity), impact of physical factors (environmental noise levels, protection against ionising radiation and nuclear safety), as well as issues relating to circulation of chemical substances and genetically modified organisms, and issues relating to product quality.

1.1 Air Pollution

1.1.1 Overview of the situation

Air quality in Latvia is affected by stationary and mobile emitters of polluting substances as well as transboundary flow of air pollution which can be compared in terms of volume to pollution originating in the territory of Latvia. Air quality, chemical composition of precipitation, and substance sediments in soil and water are affected by emission of polluting substances into the air. Air pollution causes or contributes to environmental phenomena such as acidification, eutrophication, formation of air-ground ozone and accumulation of hazardous chemical substances in living organisms. Both wet (as precipitation) and dry (as spays) sulphur and nitric compounds cause the formation of sediments which change the pH levels of precipitation and environment, and affect both ecosystems (soil, surface waters, woods) and buildings and cultural monuments. As a result of reduced volumes of industrial production and measures taken to raise energy efficiency, there has been a significant reduction in the volumes of air polluting substances produced by stationary sources of pollution. In the meantime, as the number of transport vehicles and traffic increases, so do the volumes of emitted substances, in particular emission volumes of nitric oxide, since cars made in the 1980s and 1990s without exhaust purification systems predominate among vehicles registered in Latvia.

Pollution by nitric oxide, carbon monoxide and solid particles (dust) affects human health significantly, in particular in cities. Air-ground ozone which forms in the lower atmospheric layers in photochemical reactions between nitric oxides, volatile organic compounds and other chemical substances and as a result of solar radiation, causes harm to human health and vegetation. The formation of ozonic pollution in the territory of Latvia is largely related to transboundary flow of pollution.

The system of air quality criteria is a rather complex one, nevertheless regulatory limit values are related to human health and preservation of ecosystems. Temporary permissible excess values have been established for

separate indices, expressed as average concentrations per year, day, eight-hour or one-hour period. A limited number of instances where limit values are exceeded within a certain period of time has been set for several indices. An index for public information and alert level has also been established in Latvia; if this index is exceeded, public information must be broadcast promptly and measures taken to improve air quality.

The Latvian Hydrometeorological Agency carries out air quality monitoring and initial assessment. Nitric oxides, solid dispergated particles and air-ground ozone have been found to be the most significant threats to air quality.

Precise information about the actual air quality can be obtained by direct and continuous measurements; such measurements are costly, however. Air monitoring stations were therefore obtained within the limits of available funds and gradually installed, mainly in places where pollution levels represented as wide territories as possible and also in former locations of air sampling posts which no longer complied with regulatory requirements in terms of their parameters.

Air quality measurements are carried out in eight Latvian cities: Riga, Liepāja, Daugavpils, Ventspils, Rēzekne, Jelgava, Olaine, Valmiera and a borderline district in which air quality is affected by Mazeikiai. Important information within the air quality assessment framework is also provided by air monitoring stations for continuous measurements owned by Riga and Ventspils municipalities.

Additional observations are also made by positioning diffuse sample analysers in eighteen Latvian cities to measure levels of sulphur and nitric oxide in the air. An analysis of benzene levels has also been carried out in individual sites in co-operation with Danish specialists.

The results of observations for the period from 1998 to 2002 show that:

- no cases have been found at any observation station where levels of sulphur dioxide would exceed regulatory indices for the protection of human health and ecosystems;

- levels of nitric dioxide as found in the central area of Riga exceed the limit value for human health protection of 40 $\mu g/m^3$, which will become effective in 2010 pursuant to Cabinet regulations. The highest levels of nitric dioxide in the central area of Riga are found from 10:00 am to 08:00 pm, while in the district of Ķengarags these levels peak during morning and evening hours, which serves as proof of the impact caused by intensive road traffic;

- levels of air-ground ozone have been regularly found to exceed the eight- hour limit value for human health protection;

- in the central area of Riga, levels of solid particles less than 10 microns (PM_{10}) exceed both the average annual concentration, taking into account permissible excess values, and the annual average concentration for human health protection. Cases where pollution levels are exceeded are also found in

other Latvian cities (street sanding in the winter period is one of the causes for higher levels of dust in the air during spring months);

- in Riga, the average annual level of benzene exceeds the limit value for human health protection;

- levels of lead compounds and carbonic oxide which exceed air quality standards have been found rarely;

For air quality monitoring and management purposes the territory of Latvia has been divided in two regions (Western and Eastern) and an agglomeration (Riga). Taking into account the requirements laid down by regulatory acts, a long-term air quality improvement programme must be developed and implemented by the Riga City Council and other municipalities, if required, and public awareness raised about air quality issues.

The situation with air is also affected by the quality of used fuel. Quality standards for petrol and diesel should comply with European Union standards, but control of fuel quality is still insufficient. The use of fuel oil (black oil) as fuel in combustion units has been reduced significantly by using other types of environmentally friendly fuel instead. Black oil with high content of sulphur (over 1 per cent) is still used in Latvia, however.

Latvia has adopted EU requirements for control of volatile organic compounds in filling stations and oil bases and activities involving the use of organic solvents. These requirements will be implemented in Latvia in accordance with the established transition periods.

Public welfare is affected by diffusion of offensive odours produced by factories, terminals or agricultural activities. Since currently there are no regulatory enactments that regulate the diffusion of odours and permissible levels and approved methods for odour measurements, these issues will have to be dealt with in the immediate future.

Recognition of the fact that the reduction of ozonic concentration in the stratosphere is a global environmental problem has resulted in the adoption of the Vienna Convention for the Protection of the Ozone Layer (1985), the Montreal Protocol on Substances That Deplete the Ozone Layer (1987) and other documents. Latvia is party to the Vienna Convention and the Montreal Protocol.

Implementation of the Montreal Protocol is expected to result by 2050 in the regeneration of the ozone layer at the levels of 1980. Ozone depleting substances are being taken out of the production of sprays and foam materials since 2000 and a system formed for the collection and reuse of cold carrier (Freon- 12) pursuant to the Programme for Phasing Out the Use of Ozone Depleting Substances.

Nevertheless ozone depleting substances are still used in refrigerating equipment (Freon-22), laboratories (tetrachlorcarbon), production of medicine, grain processing, cargo processing before dispatch and for quarantine purposes (methylbromide). According to provisions of the Montreal Protocol, these substances may be used, in the absence of appropriate alternative solutions, for

laboratory needs, cargo processing before dispatch and quarantine, and as reagents or raw materials for the production of other substances.

In Latvia it is planned to phase out the use of ozone depleting substances in accordance with the timetables established by the Montreal Protocol and regulations of the European Union.

1.1.2 Main problems

1. Air quality limit values (volumes of nitric oxide, solid dispergated particles, air-ground ozone) exceeded in major cities.
2. Significant levels of air pollution caused by transboundary flow, including several stationary sources of pollution near Latvian border.
3. Air quality conditions are not taken into account in traffic planning.
4. It is difficult for general public to obtain information on air quality and its impact on human health.
5. Public opinion is not sufficiently respected in constructing new objects which cause pollution.
6. There are no regulatory enactments and regulatory measures that restrict diffusion of odours.
7. Air pollution with compounds of heavy metals (arsenic, cadmium, mercury, nickel) and polycyclic hydrocarbons has not been assessed adequately.

1.1.3 Policy goals

1. To ensure air quality which conforms to standards and long-term goals, to improve air quality in places where it is not satisfactory, with particular attention paid to major cities and manufacturing enterprises.
2. To improve international co-operation in order to reduce levels of transboundary air pollution significantly.
3. To reduce the risk of eutrophication in water bodies caused by air pollution.
4. To make an air quality assessment for compounds of heavy metals (arsenic, cadmium, mercury, nickel) and polycyclic hydrocarbons in order to develop new standards.
5. To provide for the fulfilment of Latvian international obligations with respect to restricting the use of ozone depleting substances.
6. To develop and implement regulatory enactments restricting diffusion of offensive odours.

1.1.4 Expected results

1. Air quality does not deteriorate in places where air quality limit values are not exceeded.

2. Gradual attainment of limit values of nitric oxide, solid dispergated particles, and benzene for human health protection and target values of air-ground ozone for human health protection.

3. Emission levels from stationary sources of pollution do not exceed levels laid down by regulatory enactments.

4. Control and reduction of odours implemented.

5. Topical information about air quality and the negative impact of polluting substances on human health easily available to the public.

6. International co-operation schemes implemented to reduce transboundary pollution.

7. Air quality standards developed for compounds of heavy metals and polycyclic hydrocarbons.

8. Latvian international obligations with respect to restricting the use of ozone depleting substances fulfilled.

9. Regular analyses performed to monitor quality of petrol and diesel.

10. Regulatory enactments improved and economic mechanisms in place contributing to the reduction of emission of polluting substances.

11. Long-term action programmes developed and being introduced to reduce air pollution in places where limit values are exceeded, including Riga.

12. Restrictions laid down by regulatory enactments and being introduced with a view to restricting the use of black oil with sulphur content exceeding 1 per cent in combustion systems without sulphur purification equipment.

1.2 Climate Changes

1.2.1 Overview of the situation

Studies by the Intergovernmental Panel on Climate Changes have proven that climate changes occurring as a result of global warming intensify the volume of emissions of anthropogenic greenhouse gases (carbon dioxide, methane, univalent nitric oxide, fluorohydrocarbons, perfluorohydrocarbons, sulphur hexafluoride). As a result of this UN Framework Convention on Climate Change was adopted in 1992 aimed at the stabilization of greenhouse gas concentrations in the atmosphere and prevention of anthropogenic interference with the climate system. The Convention was ratified by Latvian Parliament in 1995.

In 1997 the Convention was supplemented by the Kyoto Protocol which was ratified in 2002. The Protocol provides for a reduction of the overall emissions of greenhouse gases by at least 5 per cent below 1990 levels in the period from 2008 to 2012. With Latvia backing the EU position, the emissions in Latvia are to be reduced by 8 per cent below 1990 levels.

As a result of economic recession the emissions of greenhouse gases in Latvia dropped significantly during the 1990s and the overall emissions of these gases in 2000 amounted to 34.4 per cent of 1990 volumes. Emissions of greenhouse gases in the coming 20 years are expected to stay below 1990 levels thus Latvia will have complied with the requirements of the Kyoto Protocol.

A plan for the Climate Change Reduction Policy has been worked out in Latvia. A new task group has been set up in Latvia for the development of a new climate change reduction plan in order to improve the current Climate Change Reduction Policy and to provide for participation in joint projects, international emissions trading and clean development mechanisms.

Latvia is already taking part in join projects based on bilateral co-operation agreements. Emissions of greenhouse gases will be reduced through more active involvement in joint projects. Latvia will also obtain extra financial resources and modern technologies which will contribute to the development of business activity and environmental protection in the country. An opportunity to participate in the emissions trading is opening up for Latvia. However, parties to the Convention have not agreed on all provisions for the international emissions trading as yet.

A report on emissions of greenhouse gases and attraction of CO2 is submitted by Latvia to the Secretariat of the Convention annually. Three national reports (1995, 1998 and 2001) have been also drawn up and submitted by Latvia. Co-operation has been established between state institutions and other organisations as a result of join work on surveys and national reports, which is an essential precondition for the continuation of the climate change reduction policy.

1.2.2 Main problems

1. Administrative capacities of environmental institutions are not sufficient to handle issues related to the reduction of climate change.

2. Latvia must establish a system for emission quota trading which complies with EU requirements within a short period of time.

1.2.3 Policy goals

1. To reduce the harmful effects of global climate change by implementing requirements laid down by the UN Framework Convention on Climate Change, the Kyoto Protocol and regulations of the European Union.

2. To take measures with a view of jointly reducing the emissions of greenhouse gases and increasing the attraction of CO2.

3. To provide for Latvian contribution to the prevention of global climate change without causing additional difficulty for economic development of the country.

4. To charge environmental institutions with additional functions and to provide adequate funding.

1.2.4 Expected results

1. Starting from 2008, the overall emissions of greenhouse gases in Latvia are below 25 thousand gigagrams equivalent of CO2 (25 million tons) per year.

2. Primary energy consumption per unit of GDP reduced by 25 per cent below 2000 levels.

3. The volume of renewable energy resources increased by 6 per cent of the overall production volumes of electric energy by 2006.

4. A system developed and implemented which provides for an efficient participation of Latvian state institutions and companies in joint projects, international emission trading and clean development mechanisms.

5. The impact of global warming on Latvian ecosystems, including coastal zone, assessed; socio-economic effects thereof assessed and proposals prepared concerning adaptation measures.

6. General public provided with quality information about the necessity to reduce the effects of harmful climate change and implementation of planned measures in the country.

7. A register of greenhouse gases set up and maintained.

8. Volume of methane emissions from landfills, dump sites and purification plants reduced.

9. Improved administrative capacities of environmental institutions to provide for the reduction of the harmful effects of climate change.

1.3 Water Quality

1.3.1 Overview of the situation

3.7 per cent of the territory of the country is covered by surface waters consisting of more than 12 thousand rivers and streams (including nearly eight hundred rivers with length exceeding 10 km), more than three thousand lakes and artificial watercourses (including approximately nine hundred with length exceeding 10 ha).

Of the cumulative annual flow in Latvian rivers (approximately 34.7 sq. km) only 44 per cent originate in the Latvian territory while 56 per cent originate in Lithuania, Byelorussia and Russia carrying with it pollution caused by national economies of these countries. River waters are characterised by spring flood and periodic high water as well as periods of low water in summers and winters. Thanks to the rather flat drainage basins of the largest rivers and significant areas of lakes, marshes and wetlands acting as accumulation reservoirs and slowing down water supply to rivers, Latvia has been protected from catastrophic floods which stuck Central Europe in the last decade.

Naturally available resources of underground freshwater are approximately 1.4 million cu. m. per day which is 4 times higher than the current overall output of underground water for water supply needs and 1.5 times higher than the maximum output of water in Latvia (868 cu. m. per day in 1989). Although natural freshwater renewal rates exceed the output, problems exist because of the irregular location of resources and consumers in the territory.

Latvia has sufficient underground water resources to provide quality potable water. Artesian waters are usually used for central water supply, while groundwater is used in farmsteads and small settlements. In Riga water infiltrated artificially from the Baltezers Lake and water of the Daugava River taken from the Riga hydroelectric station and processed at the Daugava purification plant is also used. Quality of water taken from the Daugava River is already dependent on transboundary pollution, however.

Latvian underground waters are characterised by higher contents of iron and lower contents of fluoric compounds as well as high water hardness and concentration of sulphates. 56.3 per cent of samples of potable water taken in 2002 across the country did not correspond to standards by their chemical parameters (mainly due to higher concentrations of iron compounds) while 3.1 per cent of samples failed due to non-compliance with microbiological indices.

Water use in Latvia has dropped twice since 1990: from approximately 600 million cu. m. to 298 million cu. m., including a drop in the use of surface waters by 55 per cent and of underground waters by 45 per cent. There are more than 3,700 registered water intakes in Latvia. During the period from 1991 to 2000 water consumption per year for household needs dropped from 200 million cu. m. to 80 million cu. m.; in industry, water consumption per year dropped

from 225 million cu. m. to 75 million cu. m. while the drop in agriculture was from 150 million cu. m. to 50 million cu. m. per year. Losses in distribution networks exceed 30 million cu. m. per year. According to calculations, at the current rate of economic activity the optimum water consumption could be drawing close to 400 million cu. m. per year.

The jurisdictional waters of Latvia include territorial waters of the Baltic Sea 12 nautical miles in width, an economical zone stretching beyond the borders of territorial waters and a continental shelf with the total Latvian marine territory measuring at approximately 28,000 sq. km.

Being an inland sea, the Baltic Sea is characterised by a limited water exchange, relatively low salinity, small depth, a wide drainage basin and large freshwater influence; all of these factors determine its particular vulnerability against pollution. For these reasons any harmful substances discharged into the sea remain there for a rather long period of time and accumulate in water, sediment and living organisms. Pollution present in river waters and in the air affects marine water quality the most.

As ship traffic increases in the Baltic Sea, leakage and discharge of hazardous substances from ships, the risk of shipwrecking, spreading of foreign species brought in by ship ballast waters and the use of hull paints against marine growth which contain toxic compounds have all become topical issues.

In recent years ship waste collection sites have been opened in Latvian ports and equipment installed for the liquidation of pollution by oil and hazardous substances.

An international exercise has been organised to train for the liquidation of large-scale marine pollution by oil. In the event of an accident where one country is unable to handle the problem with the technical means available to it, resources from other countries may be involved.

At present no assessment of the impact that dredging work has on the environment and living organisms is available in Latvia. The volume of soil dredged in port basins and deposited in sea dump sites is 2.5 million cu. m. per year.

According to the 1998-2000 studies of water biological quality, 66 per cent of rivers are rated as containing low pollution levels and 21 per cent of rivers are clean or contain low pollution levels while approximately 90 per cent of lakes are subject to the processes of anthropogenic eutrophication. The influence of biogenic elements nitrogen and phosphorus on waters is seen both in inland waters and in the sea.

Leakage of nitric and phosphoric compounds with urban sewage, leakage from agricultural point sources of pollution in connection with storage of fertilizers and pesticides, and the volume of diffuse pollution from agricultural land has dropped sharply in the 1990s. The volume of heavy metal compounds in industrial sewage has diminished considerably. However, the extent of pollution by hazardous substances must be assessed and programmes for reduction thereof implemented in the coming years.

Hydrogeological conditions in nearly all the territory of Latvia do not provide sufficient preconditions for the protection of groundwater, therefore the use of wells of little depth is only permissible in rural areas. Artesian waters are protected to a much lager extent and may be used for centralised water supply.

Underground water pollution has been found in separate places, however, e.g. near the sulphuric acid tar dump site in Inčukalns, liquid industrial dump site in Olaine, near oil bases, in the territory of military aerodromes of the former USSR in Rumbula and Lielvārde, as well as in the territory of the Riga Port and Liepāja Naval Port. Improvement works have been partially carried out in a majority of these objects to prevent the pollution from further spreading.

Transboundary pollution in the Daugava River originates in Byelorussia and Russia, while the transboundary pollution in the rivers of Venta and Lielupe originates in Lithuania. In 2000 transboundary pollution accounted for 73 per cent of nitrogen discharge into the sea from the Daugava River basin, 56 per cent from the Lielupe River basin and 90 per cent from the Venta River basin.

Marine coastal water biotopes are adversely affected by dominant streams and winds that bring pollution caused by Lithuania and ship traffic in the Baltic Sea into Latvian territorial waters and coastal area.

Over the last decade, the total volume of sewage has dropped more than two times while the volume of untreated sewage has dropped four times. Sewage treatment systems in major cities will be improved by 2008 in accordance with the transition periods established in accession talks with the European Union, while in less populated settlements this task is to be completed by 2015.

77 per cent of residents (90 per cent in Riga) in towns and settlements where the number of residents exceeds two thousand are serviced by centralised sewage systems.

Sewage sludge forms in the process of biological treatment of sewage, which may contain compounds of heavy metals, persistent organic pollutants and various micro organisms, including pathogenic bacteria. The pollution caused by sewage sludge has now decreased and it may be used as a fertilising agent in agriculture, forestry, territorial planting and for recultivation of degraded areas.

Lakes and rivers and the sea are favourite recreation spots with local residents and tourists. There are about forty official swimming places on the shore of the Baltic Sea and the Gulf of Riga in Latvia, of which four (in Liepāja, Ventspils, Majori and Bulduri) have been awarded the Blue Flag, an eco-label of the global Foundation for Environmental Education, awarded by the Blue Flag Campaign.

In the swimming season water quality in swimming places is monitored two times a week. Water quality in these swimming places meets regulatory microbiological and chemical requirements.

1.3.2 Main problems

1. The impact of transboundary pollution on the water resources and quality of the Daugava, Venta and Lielupe river basins.

2. Passivity on the part of Russia and Byelorussia in the implementation of the Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes in the Daugava River basin.

3. Lack of joint planning and uniform requirements on the river drainage basin or district level.

4. Treatment of urban sewage not provided for in medium-sized and small cities.

5. Slow washing out of accumulated nitrogen and phosphorus from soils.

6. Lack of adequate activities within the framework of good agricultural practice in the territories sensitive to nitrate pollution (the plain of Zemgale, territories close to Riga).

7. As the volume of phosphate compounds drained into the Baltic Sea and waters of the Riga Gulf increases, the volume of biomass increases causing additional eutrophication and contributing to the propagation of blue green algae.

8. Irregular control in places where pollution of underground waters is found.

9. Risk of pollution of underground waters as a result of use of unregistered bores and abandoned bores.

10. Risk of pollution caused by the intensification of ship traffic in the Baltic Sea.

11. Applications for new oil terminal projects in sensitive marine territories.

12. Risk of transboundary pollution from oil terminals in Butinge and Klaipeda and in relation to Russian oil extraction work near the Couronian Spit.

13. Insufficiently effective potable water deironing installations or lack thereof in many populated places.

14. Insufficient pressure in water distribution network, pipeline ruptures and water loss which prevent regular water supplies or cause risk of pollution.

15. Improper sanitary condition of the potable water supply network.

16. Risk of pollution of ground water in the decentralised system (wells of low depth) of potable water supply.

17. Risk of pollution of the Daugava River with respect to potable water supply in Riga.

18. Environmental discharge of untreated and insufficiently treated sewage.

19. Lack of a centralised sewage system on the fringes of many cities.

20. Failure by many sewage treatment installations in Latvia to ensure compliance with regulatory standards, in particular with respect to the reduction of the concentration of biogenic elements.

21. Non-compliance of the current rural sewage systems to modern conditions which results in the overflow of sewage water and causes contamination of water bodies.

22. Lack of appropriate facilities for storage of the contents of septic containers and of appropriate motor transport for the transportation of sludge to processing or storage sites.

23. Most of sewage sludge not used.

24. No water monitoring activities are carried out in unofficial swimming places, which abound in large numbers, due to the lack of adequate financing.

25. Inadequate water saving activities carried out.

26. Inadequate technical equipment for efficient control, liquidation of accidents and environmental monitoring in the open sea.

1.3.3 Policy Goals

1. To improve the quality of underground and surface waters, to prevent further pollution thereof and to gradually reduce the current level of pollution.

2. To improve international co-operation with respect to transboundary river basins in order to ensure joint use of water resources and to reduce the pollution arriving in Latvia.

3. To deal with the issue of reducing chemical pollution in the Baltic Sea and to provide for the fulfilment of international obligations undertaken by Latvia.

4. To promote a sustainable and rational use of water, with particular attention paid to the preservation of underground water resources and lakes and water bodies threatened by eutrophication.

5. To protect water ecosystems and water-dependent terrestrial ecosystems and wetlands.

6. To provide for protection against floods and drought.

7. To provide for the compliance of potable water to quality standards.

1.3.4 Expected results

1. Surface and underground water quality conforms to regulatory requirements and pollution by environmentally hazardous chemical substances decreases.

2. An analysis of the environmental situation, anthropogenic influence and economic situation has been performed and river basin management plans developed.

3. Programmes for the monitoring of sensitive territories, surface and underground waters, and emissions of hazardous substances have been developed and launched in operation.

4. International agreements have been made and intergovernmental river basin management plans implemented.

5. Information exchange implemented successfully between institutions that issue water use permits and exercise control over compliance with applicable provisions.

6. Integrated permit system introduced and emission limits prescribed for all operators required to have permits under regulatory enactments.

7. Consequences of floods and accidents eliminated according to a plan.

8. A monitoring data collection and summarisation system is operating.

9. Information available to responsible institutions and community about water monitoring data.

10. Public swimming places are registered and regular control exercised over the quality of swimming waters.

11. Reduced pollution levels in the Baltic Sea and the Gulf of Riga.

12. Compliance of potable water to national standards ensured in Riga, Liepāja and Daugavpils, and supply of potable water from centralised water mains in Riga and Liepāja exceeds 95 per cent.

13. Connectivity of residents to the sewage system in Riga is 93 per cent, and 84 per cent in Liepāja and Daugavpils.

1.4 Sustainable Use of Subterranean Depths

1.4.1 Overview of the situation

Human life and welfare is directly or indirectly dependent on the use of subterranean depths. Pursuant to the Civil Law, subterranean depths, mineral deposits contained therein and other resources are property of land owners. State policy on the use of subterranean depths is based on the exploration of the useful properties, resources and quality of subterranean depths, providing data thereon for use in all fields of national economy, forming a basis for scientific studies with a view to introducing new mineral deposit mining and processing technologies and putting previously unused subterranean depths to use.

Subterranean resources are formed of sediments, rocks and minerals, useful substances present in rocks in liquid state, heat of subterranean depths and geological structures suitable for economic use and exploited now or exploitable in future. In view of their economic significance, hydrocarbons (oil and natural gas) and underground waters are defined in Latvian regulatory enactments as national mineral deposits.

Mineral waters are present throughout Latvian territory. Depending on their chemical composition and subterranean depth, mineral waters may be conditionally divided in three major groups: 1) sulphuric mineral water fields with a higher content of hydrogen sulphide (in Ķemeri, Baldone); 2) Middle Devonian Parnu Horizon and Late Devonian Ķemeri Horizon saltish waters of the chloride-sodium type; 3) Cambrian Horizon salt water of the chloride–sodium type containing over 35 grams per litre minerals, and a higher content of bromine (up to 500 mg per litre).

Table waters are mainly used (1-3 grams per litre minerals). Levels of production and use of other types of mineral waters are insignificant, although they are present in large quantities. Mineral waters is one of the factors that promotes tourism and development of health resorts, and their use must be extended, with particular attention paid to the rational use of the unique mineral water resources in Ķemeri and Baldone.

Latvia is not rich in energy resources, therefore the prospects of using subterranean heat are of particular interest. Higher temperatures in Cambrian deposits have been found near Eleja and Liepāja. The total volume of geothermal resources is approximately 5.8×10^{18}.

Supplied by Latvia to all the Baltic Countries, rock gypsum is one of the most valuable subterranean resources.

Dolomite, a widespread mineral deposit, is found in the central and eastern parts of the country. Dolomite is one of the principal sources of a mechanically tough variety of stone in Latvia. Dolomite is widely used in the production of broken stone and dolomite flour as well as in finish.

Limestone resources are concentrated in the south-western part of Latvia. Limestone is used in the production of cement, glass and sugar. Limestone resources are sufficient to fully satisfy the needs of Latvian national economy.

Quartz sand deposits are found in the districts of Valmiera, Cēsis and Kuldīga. In Latvia quartz sand is used in the manufacture of glass and in metallurgy. The explored resources of quartz sand meet industrial needs.

Devonian and Quaternary deposit clay which is widespread in lowland areas throughout Latvia is widely used in the production of building materials. At present clay is mainly used in the production of various types of construction ceramics and cement.

Sand and gravel deposits are widespread in Quaternary sediments but not uniformly distributed throughout the country. They are mainly found in highland areas while in the districts of Riga, Jelgava and Bauska these deposits are found in negligible quantities.

Thirty most significant deposits of rock gypsum, limestone, dolomite, clay, quartz sand, gravel, sand, boulders and sapropel are included in the list of national mineral deposit sites.

Peat has great economic significance in agriculture and production of energy. Marshes cover approximately 10 per cent of the state territory; the largest marshes are found in lowland areas. The total quantity of peat amounts to 1.7 billion tons; for several reasons a significant portion of the peat is unusable, however. In recent years peat has also become an important export article.

Sapropel is found in the majority of lakes in Latvia. The total quantity of sapropel amounts to approximately one billion cu. m. Sapropel has many applications, starting from soil fertilisation to fodder additives and medicine. The largest quantities of sapropel are found in the Latgale Region.

Potential oil deposits are situated in the western part of the country and the Baltic Sea shelf adjoining it, except for the Irbe Strait. These deposits are mainly related to Cambrian sandstone and alerolites lying within the depth of 650 to 1,900 metres. A considerable number of local elevations has been found in the Latvian shelf, of which many have been recognised as prospective oil fields. In each of these sites the estimated quantity of oil varies from one to several tens of millions of tons of oil. A small oil field containing approximately 770 thousand tons has discovered near Kuldīga recently.

Geological conditions in Latvia are favourable for underground gas storage facilities. Several additional storage facilities may be constructed in addition to the current Inčukalns underground gas storage facility at the total volume of 40 to 50 billion cu. m.

A list of protected Latvian geological and geomorphologic monuments has been approved in order to preserve the most important geologic objects as elements of scenery and for scientific purposes. The list contains 88 rock outcrops or rocks, 34 great stones, 32 caves, 29 geomorphologic objects, 21 spring, 8 Quaternary and Holocene formations, 7 waterfalls, one deposit containing Devonian shellfish and one man-made cave labyrinth.

Exodynamic geological processes take place in the top layer of lithospheric rocks as a result of geological activities by rivers, seas, precipitation and underground waters, processes in organisms, earth gravity and solar radiation. These processes are mainly slow; however, in some places their speed is much higher and the results of such activities become manifest sooner. As a result layers of rocks aged millions of years may wash away and erode, rocks in slopes may fall and slide down, changes may occur in river beds and in sea or water basin coastlines, drift sand may form and collapses in the top layer of lithospheric rocks may occur within a very short period of time.

Today the acceleration of exodynamic processes is promoted by human economic activity and the increase in average global temperatures on the Earth. Karstic and suffosion processes, washing away of sea shores and water basin banks, processes affecting slopes (mudslides, mud-streams, landslides), permanent and temporary stream erosion by running water (in rivers and ravines) and aeolian (arising from the action of the wind) processes may be included among dangerous geological processes.

1.4.2 Main problems

1. Insufficient use of geological information in the planning of a sustainable state policy and decision-making due to the lack of appropriate specialists in municipalities and state institutions.
2. Passivity of land owners and users in providing for a sustainable use of subterranean depths.
3. Insufficient information on the Latvian geological environment, which does not meet modern requirements, including information about geological environment quality and sensitivity towards anthropogenic influence, development of modern geologic processes and the risk contained therein, sustainable uses of subterranean resources.
4. Low usage of modern technologies in geological survey, production and use of mineral deposits.
5. Reduction of scientific potential in the field of geology.
6. Negative environmental effects of the use of subterranean resources, including the lowering of underground water level and quality.
7. Insufficient exploration of the spread of dangerous geological processes and their possible impact on the environment.
8. Lack of assessment of the increase in the average global temperature with respect to modern geological processes.
9. Insufficient involvement of municipalities and land owners in the reduction of risks caused by geological processes.
10. Insufficient international co-operation in the exploration and handling of transboundary geological processes and problems related thereto.
11. The impact of climate changes (strong winds and storms) on the Kurzeme coast.

1.4.3 Policy goals

1. To provide for a rational, environmentally friendly and sustainable use of subterranean depths.
2. To promote the involvement of municipalities and land owners in the sustainable use of subterranean depths.
3. To contribute to the collection of information on modern geological processes and use thereof in territorial planning.
4. To promote international co-operation in handling geo-ecological problems.
5. To promote the obtaining of new and modern data which correspond to the situation in the geo-ecological environment.

1.4.4 Expected results

1. Regulatory enactment system improved to provide for a rational and sustainable use of subterranean depths.
2. A state programme for a sustainable use of subterranean depths has been developed and is being implemented.
3. Planning of sustainable use of natural resources by using multilaterally analysed and approved information is ensured.
4. Information on subterranean resources, distribution, production and use thereof is maintained and supplemented.
5. Geo-ecological maps at a scale 1:50 000 have been compiled which provide precise and up-to-date information, thereby contributing to the preservation of environmental diversity and development of national economy.
6. Improved use of digital geological maps.
7. An EU compliant system for the monitoring of subterranean depth established.
8. Joint management plans for the use of transboundary underground water bodies have been established and programmes prepared for the reduction of risks inherent in dangerous geological processes.
9. Individuals, municipalities and state institutions involved in the sustainable use of natural resources.
10. State and municipal institutions staffed with competent geo-ecology specialists.
11. Drills compromising the sustainable use of subterranean depths closed.
12. A list of geological and geomorphologic monuments approved, objects examined in situ and proposals prepared for adding new objects to the list.
13. Community awareness is being increased and qualified specialists prepared in the fields of geology and geo-ecology.

1.5 Waste management

1.5.1 Overview of the situation

600 to 700 thousand tons of municipal waste are produced in Latvia annually. Approximately one half of this quantity can be regarded as biodegradable municipal waste. Management of municipal waste within administrative territories is the responsibility of municipalities. The majority of collected municipal waste and other types of waste is buried in dump sites without pre-treatment. Approximately 40 per cent of collected waste is buried at the Getliņi landfill site situated in the Riga district.

10 to 12 new regional landfill sites for municipal waste and appropriate waste treatment installations are to be established in the Latvian territory in accordance with a waste management state plan (for 2003 to 2012), while the current dump sites are to be closed and recultivated.

According to a survey conducted by the Latvian Packaging Institute, the total volume of packaging waste per year exceeds 100 thousand tons. Pursuant to Law on Natural Resources Tax the tax is levied on the packaging of goods and products produced in Latvia and on the packaging of imported goods and products. The law also provides for tax allowances for business companies participating in the used packaging management programme on a voluntary basis.

Such programmes are carried out by several business companies on their own account. Business companies have also been established with their principal business activity related to the management of used packaging. The capabilities of processing several types of used packaging materials are limited in Latvia, therefore export of used packaging materials to other countries for processing is supported. The system for the collection and processing of used metallic packaging is not developed since the activity is currently not economically advantageous.

Approximately 93 thousand tons of hazardous waste were produced in Latvia in 2000. The majority of hazardous waste (60 per cent) is formed by metal production waste. At present hazardous waste is temporarily stored at the premises of business companies and special waste storage sites. Three sites have been installed for the storage of unusable pesticides containing approximately 2,000 tons of hazardous waste. Of these storage sites, only one site with a capacity of 1,500 tons complies fully with regulatory requirements, including the monitoring programme. Waste stored at the premises of business companies is kept packed in separate rooms.

Information is provided to regional environmental boards by business companies annually on produced and stored waste. The information is collected by the Latvian Environmental Agency. It is planned to either burn the stored waste or to bury it at the hazardous waste landfill site. The producer or owner of waste has to obtain a permit for the temporary storage of hazardous waste.

Pursuant to regulatory requirements, producers of batteries and accumulators are responsible for labelling which indicates that batteries and accumulators are to be collected after use separately from other municipal waste. Sellers of batteries and accumulators are obliged to take these products back once they have been used up without extra charge, provide for safe storage thereof and enter into agreements with business companies providing hazardous waste management services on further management of such products.

There are several business companies operating in the country that collect accumulators containing lead and export them abroad for processing. In 2001 collection of used household batteries was started, mainly in supermarkets and schools.

End-of-life cars are used in spare parts, as scrap iron for export or stored in the territory of processing companies. Various liquids and oil residues are drained from end-of-life cars before storage. These residues are then either refined or transferred to business companies dealing in the collection of oil products. In Latvia it is possible to process or export for processing to neighbouring countries more than 90 per cent of materials and raw materials so obtained. Collection, processing and utilisation works are not carried out pursuant to regulatory requirements as yet, however. Collection of abandoned end-of-life cars is an important problem, especially in rural areas. The system for collection of used tyres must also be improved.

Approximately 700 thousand tons of oil products are imported to Latvia for internal consumption needs annually. An oil product collection and processing system has been established in part. In view of the high heating value of oil products, several business companies are involved in the collection of oil product waste for further use thereof as fuel. The majority of oil product waste is burned at the Brocēni Cement Factory. The processing capacity of oil product waste at the factory is approximately 1,000 tons per month. Some business companies provide treatment and refinement services of ship waste water polluted with oil products.

Over 1,000 tons of infectious waste were produced in the country in 2000. This type of waste is disinfected in special facilities or burned. Medical waste from dental surgeries and outpatient clinics are normally buried in dump sites.

1.5.2 Main problems

1. Lack of a system for the collection, temporary storage and processing of hazardous municipal waste that would conform to environmental requirements.

2. Waste and packaging processing possibilities and capacities are not sufficient.

3. Regeneration of used oils not provided for.

4. The end-of-life vehicle management system is not streamlined and these vehicles are often abandoned.

5. Due to the low environmental awareness among residents waste is usually dumped in places unfit for this purpose and sorting of waste is insufficient.

1.5.3 Policy goals

1. To limit waste production and to reduce quantities of buried waste by promoting to processing or reuse thereof.
2. To implement a regional municipal waste management system.
3. To ensure that as much waste is reintroduced in the economic system as possible.
4. To provide for the burying of waste in a way that is safe for human health and the environment.
5. To facilitate waste processing as close to its place of origin as possible.
6. To facilitate the introduction of sorted waste collection system in municipalities.
7. To provide residents and entrepreneurs with information and to raise their awareness about waste management issues.

1.5.4 Expected results

1. Gradual reduction in the quantities of biologically degradable and buried waste is taking place.
2. A hazardous waste management infrastructure set up (waste collection station network, waste incineration installations, landfill sites).
3. Reuse of used packaging materials and separate processing of individual packaging types (glass, cardboard and paper, plastic, metal) ensured.
4. Separate collection of batteries and accumulators ensured.
5. Destruction of materials containing polychlorinated biphenyl and terphenyl is being carried out.
6. Reuse or processing of end-of-life vehicles, used electrical and electronic equipment ensured.
7. Packaging deposit system introduced and running.
8. A differentiated natural resources tax introduced and levied on products consumption of which produces small quantities of waste.
9. Waste sites that do not conform to regulatory requirements are reconstructed, closed or recultivated.
10. Regional stations for collection, packing, labelling and temporary storage of hazardous waste installed in regional municipal landfill sites.
11. Installations for receipt and processing of biologically degradable waste have been set up in the territories of municipal waste landfill sites.
12. A system for the collection, summarisation and analysis of waste management information has been streamlined and operates efficiently.

1.6 Investigation and recovery of polluted sites

1.6.1 Overview of the situation

There still remain zones of intensive pollution in the territory of Latvia from which pollution spreads further on and finds its way into groundwater, surface waters, food chains and poses a threat to human health. Part of these territories has now been taken over by local governments which lack funding for these tasks and specialists.

Statistical information about former municipal and industrial waste dump sites, oil bases, terminals, fertiliser and pesticide warehouses, animal breeding complexes and railway stations may be currently used for the registration of polluted and potentially polluted sites.

Lack of inventory and control measures with respect to the polluted territories imposes restrictions on territorial planning and future development since pollution levels determine land cadastral value and relevant real property tax.

In the past problems related to polluted sites were not regarded as a priority in Latvia and recovery measures of polluted sites lacked proper funding. Although relevant regulatory enactments have been adopted, exploration of polluted and potentially polluted sites has not yet been completed, while recovery measures have been carried out in individual polluted sites only. Substantial state budget financing is required to ensure environmental improvement since it is impossible to identify legally responsible persons for pollution created in the former economic system.

Expenses required for the improvement of polluted sites which cause serious environmental damage (sulphuric acid tar dump site in Inčukalns, Rumbula airport territory, Olaine biochemical waste dump site, oil company territories in Mīlgrāvis and Sarkandaugava, liquid waste dump site in Jelgava, waste dump site of pelt processing plant Kosmoss, Liepāja Naval Port) are to be assessed individually.

1.6.2 Main problems

1. Lack of adequate funding for the exploration, investigation and recovery of polluted sites.

2. Inability to identify legally responsible persons for pollution created in the former economic system.

3. Lack of municipal capability to perform functions prescribed by regulatory enactments in relation to primary exploration of polluted and potentially polluted sites due to the lack of adequate funding and administrative capabilities.

1.6.3 Policy goals

1. To eliminate or reduce pollution caused by previous military or economic activities and the adverse impact thereof on human health, property, environment and biological diversity.
2. To achieve improvement in soil, ground, underground and surface water quality in polluted sites.
3. To preclude the penetration of hazardous substances from polluted sites into surface and underground waters.
4. To renovate and improve environmental quality in polluted sites.
5. To take the current levels of environmental pollution into account in territorial planning.
6. To determine the actual value of land and relevant real property tax according to the degree of pollution.

1.6.4 Expected results

Exploration, additional investigation and recovery of polluted and potentially polluted sites has been carried out in three stages:

Exploration and registration of polluted and potentially polluted sites

1. A summary of information has been prepared on the basis of archive data, information foundations, reports on environmental statistics, and information provided by the Land Registry Service, Ministry of Defence and Ministry of Health and other institutions on economic and military activities resulting in pollution.
2. A national database has been created about polluted and potentially polluted sites.
3. General public has been informed about polluted and potentially polluted sites.
4. The information so obtained is used in development and elaboration plans and for land value assessment purposes, depending on the degree of pollution.

Investigation of polluted sites

5. An investigation carried out in sites which have been included in the list of objects of priority to determine the dangerousness of the polluted site in question and to decide on the necessity to implement recovery measures.
6. The possible negative impact of pollution on human health, property, environment and biodiversity and related restrictions on territorial use have been determined.

Recovery of polluted sites

7. Gradual confinement of pollution and recovery of polluted sites is carried out using technologies that conform to the environmental and economic situation in Latvia.

8. Pollution poses no threat to human health, property, environment and biodiversity.

9. The possibilities for use and development of former polluted territories are improving.

1.7 Biodiversity

1.7.1 Overview of the situation

Waters of the Baltic Sea and The Gulf of Riga which are rich in fish resources and contain singular species of saltish water communities contribute to Latvian biodiversity significantly. Preservation of biodiversity therein is only possible by balanced management of interests in various spheres, including fishery, transport and environmental protection.

The Latvian marine coastline is nearly 500 km long. Of this expanse a belt of 300 km, mainly situated on the Kurzeme coast, still contains ecosystems which have been changed on a relatively small scale. These ecosystems mainly include sandy beaches and dunes. Beaches covered by gravel, pebbles or boulders are rarer to find. Littoral and dune ecosystems are formed by a small number of species which have adapted to the singular conditions.

The vegetation is normally dispersed and therefore very sensitive to human activity. Depressions with periodically changing humidity conditions have formed in the space between dunes; in these depressions species are found that are characteristic of both dunes and grasslands, and even of marshes and waters. Individual sections of the seashore are covered by reeds and growths of rushes.

There are many lakes and rivers in Latvia. However, shallow maritime lakes with very productive ecosystems that provide a food basis for waterfowl and other animal species play a particularly significant role in the preservation of biodiversity. Lakes containing communities of recumbent plants that prefer clear waters deficient in organic substances are of great value. These lakes are threatened by pollution and an intensive development of recreational grounds. Large sections of rivers in plains and lowlands are regulated, resulting in the destruction of characteristic ecosystems.

Woods cover nearly one half of the territory of the country, of which two-thirds are coniferous trees. Ratios of areas covered by different types of woods have changed as a result of economic activity. Woods of birches, white alders and aspens cover large areas while old growths of oaks and ashes have been retained in small areas. Areas with long unused woods are very small in number while wood utilisation intensity has increased in recent years.

Marshes cover approximately 10 per cent of Latvian territory. Marsh ecosystems play an important role in the maintenance of both the climate and water levels. Specific vegetable and animal kingdoms have formed in marshes, while species living in marshes are relicts of the postglacial age. Approximately 12 per cent of the areas covered by marshes are currently under state protection. Marshes have been used to obtain peat since long ago; people have long been trying to drain and change marshes in order to obtain more arable land and grasslands. Interest about peat production has increased in recent years.

Arable land occupies 74 per cent of the total area of land fit for agricultural use. Weed communities that have adapted to specific soil and climatic conditions form in fields. A specific complex of insect species, including pollinators and natural enemies of vermin of cultivated plants, is in turn related to these weed communities. Fields are home and a feeding place to species of wild animals: birds and mammals. The variety of species in fields is directly dependent on regular human activity. Modern methods of intensive agriculture destroy species and communities that have adapted over centuries to survival under conditions of traditional economy.

Grasslands and pastures cover 26 per cent of the total area of land used in agriculture. A majority of these is formed of cultivated meadows, perennial grasslands or fallow land used for hay. A majority of these areas are more productive and more important in terms of economy than natural meadows. Traditional Latvian rural scenery is preserved thanks to the management of grasslands and pastures.

The composition of species of plants, insects and other invertebrates in the cultivated grasslands is poor and uniform. In uncultivated (natural) meadows, there is a large variety of species of plants and invertebrates. A total of one-third of flowering plants and ferns and 40 per cent of rare and endangered species that grow in Latvia are found in these meadows. These meadows serve as nesting and feeding places for several bird species. In the period from 1996 to 2001 the amount of land not used in agriculture has increased from 15.5 to 21.7 per cent.

Several thousands of bedrock outcrops and 211 natural caves have been registered in river valleys. Several rare species of algae, lichen and higher plants have adapted to life on rock outcrops. Caves are a unique natural formation for Latvian conditions. Sandstone caves of little depth are most common; some caves are several hundreds of metres long, however. Individual species of animals are found in caves rarely visited by man which have adapted to the conditions present in such caves. Several caves are important hibernation sites for bats.

Ecosystems formed as a result of karstification are also found in Latvia, namely in the southern part of the Bauska District and in the Riga District (near Baldone, Allaži and Salaspils). Several rare and protected biotopes are found there.

18,047 animal species, 5,396 plant species and approximately 4 thousand mushroom species have been found in Latvia. According to scientists, of these 907 species (3.3 per cent of the total number of species) are rare and endangered. Wild plants and animals are an important integral part of any ecosystem. Mutual links existing between species are broken if a species becomes extinct. The possibility of using presently unknown properties of these species for human needs in the future may also be lost irrecoverably.

Over centuries Latvian farmers have grown several species of cultivated plants and domestic animals that are well adapted to local conditions. This

genetic material could be of great value in the formation of new economically important species in the future.

1.7.2 Main problems

Baltic Sea and Gulf of Riga

1. Sea pollution and accident risk.
2. Port deepening work during fish spawning season and dumping of dredged soil in fish spawning grounds.
3. Use of non-selective fishing gear, spread of alien species, and excessive fishing of individual species of fish.

Seashore and dunes

4. Lack of integrated coastal planning and building in pristine territories.
5. Intensive territorial use for recreational and tourism needs.

Rivers and lakes

6. River regulation and dams (building of hydroelectric stations, installation of ponds, straightening of rivers), insufficient ecological flow rate in river waterworks.
7. Invasive spread of reintroduced and alien species.
8. Excessive fishing of individual species of fish.

Woods

9. Intensive use of woods, especially of private woods, which affects biodiversity in woods negatively (fragmentation of wood areas, negative effects of forestry).
10. Low density of natural woods in economic woods.
11. Low density of specially protected wood areas in specially protected natural territories.

Marshes

12. Disproportionate representation of different marsh ecosystems in specially protected natural areas.
13. Breakdown of the natural hydrological equilibrium in and near marshes where draining has been carried out, including sites of peat production.

Fields, grasslands and pastures

15. Disappearance of the biodiversity characteristic of extensive agriculture in territories where intensive management methods have been reintroduced.

16. Overgrowing of grasslands.

Rock outcrops, caves and karstic depressions

17. Flooding for the purposes of installing hydroelectric station reservoirs.

18. Intensive use of objects for recreational and tourism needs.

Protection of species

19. Degradation of the habitats of endangered species and reduction of the spread of endangered species.

20. Interruption of seasonal and lifecycle migratory routes.

21. Trade in ornamental plant and rare animal species.

22. Reduction in the specific numbers of local species and non-use of former breeds as a result of the intensification of agricultural production.

1.7.3 Policy goals

1. To preserve and restore the diversity of ecosystems and their natural structures.

2. To preserve and promote the diversity of local wild species.

3. To preserve the diversity of species of agricultural plants and animals, to promote characterisation and uses thereof.

4. To improve the environmental protection system.

1.7.4 Expected results

1. Natura 2000, a network of specially protected natural territories at EU level, has been established.

2. Proper management ensured and a control system established in specially protected natural territories at the European and national levels.

3. Microreserves of specially protected species and biotopes established.

4. A network of capable regional environmental protection institutions established.

5. A biodiversity monitoring programme and an action plan implemented.

6. A compensation mechanism for losses incurred by land owners through restrictions on economic activity in protected areas has been developed and implemented.

7. A long-term state programme for the investigation of biodiversity has been developed.

8. Scientific institutions have been consolidated, technical and material supply thereof ensured and intellectual potential enhanced.

9. Environmental protection plans and individual regulations for the protection and use of specially protected species and natural territories at Latvian and European level have been developed and implemented.

10. Requirements laid down by the biodiversity preservation policy have been integrated in the regulatory enactments and planning documents pertaining to all fields of national economy.

11. Community is getting involved in the implementation of environmental protection measures and is informed of the results thereof.

1.8 Protection against ionizing radiation and nuclear safety

1.8.1 Overview of the situation

A base of regulatory enactments has been set up in the field of radiation safety and nuclear safety pursuant to the Law on Radiation Safety and Nuclear Safety and in accordance with recommendations of the International Atomic Energy Agency.

In order to ensure joint supervision and control of radiation safety and nuclear safety, a Radiation Safety Centre was established in 2001 under the Environmental Ministry.

The total number of sources of ionising radiation in Latvia is approximately 12,300, with their total level of radioactivity at approx. 700 TBq (activity at 1 becquerel is found in a source of radioactive radiation with one act of decay per second; 1 TBq = 10^{12} Bq). At present sources of ionising radiation are used most widely in medicine in Latvia.

The total number of those working with sources of ionising radiation in Latvia is approximately two thousand; individual dosimetry measures are carried out in a centralised manner with respect to these employees.

The overall negative impact on the environment and residents is small; only a few tens of operators work with radioactive substances that create radioactive waste and may result in radioactive pollution. Employees and patients of medical institutions may suffer in other cases.

There are no active nuclear objects in Latvia. The operation of the nuclear reactor of Salaspils, the only nuclear object in the territory of Latvia, was stopped in 1998. In 1999 liquidation and dismantling of the nuclear reactor of Salaspils was started; these works are to be completed by 2009.

The issue of handling used nuclear fuel has to be solved in the dismantling process of the nuclear reactor. Latvia has no proper storage site for used nuclear fuel, and it therefore has to be taken out of Latvia and buried or processed. Radioactive waste which forms during the liquidation and dismantling of the Salaspils nuclear reactor as well as other radioactive waste which is produced in Latvia is buried at Radons radioactive waste storage site by RAPA, a non-profit state-owned limited company. The company also carries out supervision, conservation and dismantling work of the Salaspils nuclear reactor as well as collection, transport and burying of radioactive waste and used closed sources of radiation at Radons radioactive waste storage site.

Radons radioactive waste storage site has to be enlarged (by building additional reservoirs) to ensure that all radioactive waste produced during the liquidation and dismantling of the Salaspils nuclear reactor is buried.

There is nuclear waste in Latvia that cannot be buried at Radons radioactive waste storage site which is situated close to surface level. Such waste may be buried at a geological storage site. A long-term storage site for radioactive waste has to be built and the possibilities of building a geological

storage site examined in order to provide for the safe keeping of such waste until it can be buried.

A long-term safety assessment of Radons radioactive waste storage site was performed in Latvia. It was found that measures are to be implemented to increase the safety level of radioactive waste reservoirs used in the previous decade (by installing extra protective layers) to prevent them from posing a threat to the community.

There are five nuclear power stations within the range of 300 km from Latvian state border, i.e. in Ignalina (Lithuania), Loviisa (Finland), Oskarshamn (Sweden), Sosnovyi Bor and Smolensk (Russia). From Latvian perspective, the Ignalina power plant is potentially the most dangerous nuclear object since it is the nearest one (situated only 6 km from the Latvian border) and uses reactors analogous to those used in Chernobyl nuclear power station. For these reasons the number of monitoring stations in the Daugavpils District is larger than in the rest of Latvian territory. An air sampling and measurement station designed for monitoring radionuclide aerosol levels, the only station of its kind in Latvia, is also located in Daugavpils.

Latvian automated gamma radiation monitoring and radiation accidents early warning system comprises 16 stations. These stations are used to monitor state territory and their number may be regarded as adequate. The summary annual gamma radiation doses as measured by these stations vary from 0.4 to 0.7 mSv (a dose equivalent to 1 sievert is found in ionising radiation used to irradiate 1 kg of a substance; the sum of indirect charges produced by the initial kinetic energy in the substance is 1 J).

Environmental radiation levels are monitored and food control activities are carried out on a regular basis in order to assess radiation doses received by population according to regulatory enactments concerning protection against ionising radiation. Monitoring data are summarised by the Radiation Safety Centre. The results obtained show that the limits of ionising radiation doses laid down by regulatory enactments are not exceeded.

Several territories have been discovered in Latvia with increased levels of radon in soil and ground waters. Radon may accumulate in dwelling premises causing harm to the health of dwellers if houses are designed and built incorrectly. The permissible level of radon concentration in dwelling premises may not exceed 200 Bq per cu. m. In work places, the permissible level of radon concentration is 400 Bq per cu. m. If these limits are exceeded, dwellers are exposed to the risk of developing malignant growths.

1.8.2 Main problems

1. Dismantling of the Salaspils nuclear reactor is not completed since this requires considerable resources.

2. The risk of radioactive pollution exists in the event of an accident in any of the nuclear reactors located not far from the Latvian border.

3. Obsolete medical equipment does not comply with regulatory requirements for radiation safety and nuclear safety.

4. Although carried out in a way that is safe for human health and the environment, burying of radioactive waste causes psychological problems for the local community.

1.8.3 Policy goals

1. To provide for the protection of the community and the environment against harmful effects of ionising radiation while gaining maximum benefit from the use of sources of ionising radiation.

2. To promote the safe use of sources of ionising radiation by preventing the threat to the environment and the community from exceeding levels that can be reached by using the best technologies available.

1.8.4 Expected results

1. The Salaspils nuclear reactor has been liquidated.

2. Increased long-term safety at Radons radioactive waste storage site.

3. Construction of the long-term radioactive waste storage site at Radons radioactive waste storage site completed.

4. The prospects for building a geological long-term radioactive waste storage site explored.

5. Improvements of medical radiological equipment implemented in accordance with radiation safety requirements; monitoring of doses received by patients is carried out.

6. Improved cargo radiometric control on state borders.

7. Agreements concluded on the operative notification about nuclear accidents, information exchange and cooperation with respect to radiation and nuclear safety with countries whose nuclear objects pose or may pose a threat to Latvia.

8. The radiation accident early warning monitoring system has been improved.

9. The nuclear fuel used in the Salaspils nuclear reactor has been taken outside Latvia.

1.9 Noise

1.9.1 Overview of the situation

Noise is one of the most unfavourable physical factors that causes in humans unpleasant sensations, health disorders and illnesses.

Noise is produced by economic activity, transport vehicles, production and building installations, ventilation systems, work equipment, maintenance systems in residential and public buildings, recreational sites and mass events.

The problem of noise is topical in major cities in the country and, although noise can affect anyone, its importance is still underestimated in Latvia. Environmental noise management and control is hampered by incomplete knowledge about the effects caused by noise as well as about the interrelationship between noise intensity, time and effect of exposure to noise.

At present Latvia does not have a unified planning document for noise reduction. Regulatory enactments relating to noise and noise prevention or reduction measure fall within the competence of several ministries depending on the source of noise. A similar situation is also found in the European Union where several directives are in force with respect to the permissible levels of noise produced by mechanical vehicles, restriction of noise produced by aircraft, noise produced by household appliances and other equipment.

An EU directive was issued in 2000 concerning the noise emission in the environment by equipment for use outdoors merging requirements that were previously incorporated in separate directives concerning various types of equipment. Requirements are already set out in Latvian regulatory enactments with respect to the noise produced by household appliances and equipment for use outdoors.

Separate requirements concerning noise-related issues are also set out in other regulatory enactments, including the sphere of building where protection against noise is one of the principal requirements for building constructions.

EU regulatory enactments also apply to the assessment and management of environmental noise and provide for noise mapping by using uniform noise parameters and identical calculation methods throughout the European Union. This will provide an opportunity to examine the current situation and to develop appropriate action plans for the reduction of noise.

According to the requirements set out in regulatory enactments of the European Union, responsible institutions have to compile noise maps by 2007 and plans for main motorways with the annual traffic flow of more than 6 million transport vehicles by 2008. The same period of time applies to main railway lines that carry more than 60 thousand trains per year and airports with more than 50 thousand take-offs or touchdowns per year.

Noise maps for agglomerations with more than 250 thousand inhabitants have to be compiled by 2007 and action plans by 2008.

At present three sections of motorways on the approaches to Riga correspond to the above description of motorways with the traffic flow exceeding 6 million transport units per year:
(1) the Riga-Ventspils A10 motorway section from the Riga border to Jūrmala;
(2) the Riga – Veclaicene A2 motorway section from the Riga border to the turn-off to the A1 motorway;
(3) the Riga – Daugavpils A6 motorway section from the Riga border to Salaspils.

Action plans will have to be developed based on the results of noise mapping to reduce noise levels in places where it could affect human health negatively. Measures will also have to be implemented to prevent the current situation from worsening in places where it corresponds to regulatory requirements.

1.9.2 Main problems

1. The negative impact of noise and vibrations on human health.
2. Increased noise levels emitted by equipment and systems used in national economy and for household needs.
3. Increased noised levels in daily life: in the street, in transport vehicles, recreational objects.

1.9.3 Policy goals

1. To explore environmental noise levels and its disturbing impact on the community.
2. To ensure and maintain reduced noise levels in noise-free environments (schools, dwelling houses, hospitals) and during certain periods of time: in the evening hours, at night and during holidays.
3. To reduce environmental noise levels, particularly in places where the noise can pose a threat to human health.
4. To provide the community with information about environmental noise.

1.9.4 Expected results

1. Data obtained on the current noise levels in cities and populated places.
2. Measures carried out to prevent from increasing the noise levels emitted from a noise-safe place.
3. The disturbing and detrimental impact of noise on the community has been reduced.
4. The community is informed about environmental noise and measures taken to restrict it.
5. Regulatory enactments concerning environmental noise have been improved.
6. Strategic noise maps compiled and action plans developed for main motorways and railway lines, airports with more than 50 thousand take-offs or touchdowns per year, as well as for agglomerations with more than 250 thousand inhabitants.

1.10 Chemical substances, genetically modified organisms, and product quality

1.10.1 Overview of the situation

The use and consumption of chemical substances and chemical products is increasing throughout the world, including Latvia. As a result, the importance of monitoring the handling of chemical substances and chemical products increases to ensure that they are harmless to human health, environment and property. Information about the imports, production and use of chemical substances and products is summarised in Latvia since 1995. At the end of 2002, the information comprised data about more than one thousand chemical substances and approximately five thousand chemical products.

A new effort has been launched to identify new chemical substances on the internal market (chemical substances that are not included in the EU list of chemical substances used in trade and have come into circulation after 1981).

The Latvian chemical substances and chemical products supervision system is new and the experience is little. Besides the biocide supervision system is still being developed (biocides are active substances or products designed to destroy chemically or biologically, repel and make harmless, or to prevent the action of, hazardous organisms or to affect them otherwise). Latvian regulatory enactments relating to chemical substances and products have been supplemented considerably since 1999. Required regulatory enactments have been developed and introduced, thus creating a mechanism for fulfilling the requirements laid down by the Law on Chemical Substances and Chemical Products.

The harmonisation of Latvian legislation relating to chemical substances and chemical products with EU legislation makes commercial activities more expensive and less competitive in comparison with products made in countries with less stringent requirements in the field of environmental legislation, however.

Existing responsible institutions are reorganised and new ones are to be established for the supervision of chemical substances, chemical products and biocides. Only by continuous development of the functions, improvement of administrative capacities and mutual cooperation of responsible institutions involved in the supervision system of chemical substances, chemical products and biocides will it be possible to enhance the competitiveness of domestic products and create good conditions for commercial activity in Latvia.

The development of new regulatory enactments has started in the European Union, based on the approved strategy for the future policy with respect to chemical substances. The new system for the Registration, Evaluation and Authorization of Chemicals (REACH) is maintained by the joint efforts of the Directorate General of Trade and Directorate General for Environment of the European Commission. Latvian entrepreneurs and state institutions will

therefore have to cooperate actively during the implementation of regulatory enactments in order to protect the interests of Latvian producers.

Attention is being focused increasingly in the process of developing EU environmental regulations to the control of the circulation of persistent organic pollutants (pesticides, polychlorinated biphenyls, diotoxin), removal thereof from circulation and destruction of their stocks. A system has been set up in Latvia for the temporary storage of unusable pesticides for burning in the hazardous waste incineration installation in a safe way for human health and the environment. Information has been collected in Latvia about sites that are actually or potentially polluted with persistent organic pollutants.

The genetic material of genetically modified organisms and genetically modified micro organisms has been changed artificially by using proven gene technologies: removing or introducing certain genes of these organisms or micro organisms that determine the manifestations of certain characteristics. Regulatory enactments exist in this field in the EU since early 1990s but they are currently being improved and developed significantly. The principles of EU legislation include the procedure for assessing the environmental risk, requirements for the monitoring of long-term effects, evaluation of the interaction between different genetically modified organisms, provision of information to the community, and mandatory consultations with the scientific commission before the adoption of any decisions.

Latvia has adopted regulatory enactments and developed an institutional system for the control of genetically modified organisms in line with these principles. The Supervision Council for Genetically Modified Organisms and New Food is vested with certain rights to monitor and exercise influence over these processes in Latvia. However, regulatory enactments and the system for implementation thereof as well as the mechanism for informing the society still have to be improved.

The tasks laid before sustainable development include, among other things, helping to solve environmental problems in the whole product circulation cycle. The European Commission has financed several researches in this field as well as consulted the parties involved. An integrated product policy is based on the desire to produce new and better products that would be competitive on the market and would produce as little harmful environmental effect during the whole circulation cycle of the product as possible.

The development and implementation of an integrated product policy will be a new challenge for Latvian environmental institutions and producers. However, appropriate regulatory enactments have not been developed in the European Union as yet. As a result of this, Latvian environmental institutions and interested parties will be able to participate in the process actively in order to protect the interests of Latvian society and entrepreneurs.

1.10.2 Main problems

1. Insufficient information available to entrepreneurs and community on hazardous chemical substances and appropriate safety measures.

2. A large number of new regulatory enactments in the field of control of chemical substances which must be implemented within a short period of time and insufficient administrative capacities.

3. The implementation of regulatory enactments with respect to chemical substances and chemical products increase the costs of production.

4. The use of persistent organic pollutants results in polluted sites where the accumulation of substances poses a threat to human health and biodiversity.

5. Insufficient control of genetically modified food and insufficient information for the community about genetically modified organisms.

6. An increasing impact on the environment as the quantity, consumption, variety and complexity of products increases, new product types appear and the global market develops.

7. An increase in the environmental risk due to the wrongful use or burying of used products.

1.10.3 Policy goals

1. To improve regulatory enactments on chemical substances, chemical products, biocides and genetically modified organisms and on the monitoring system thereof.

2. To reduce the dependency of economic spheres, in particular agriculture, on hazardous chemical substances and products and the use of certain biocides, using the principle of substitution and alternative methods.

3. To develop a management strategy for the circulation of chemical substances, chemical products and biocides and risk reduction programmes, including emergencies, risk of chemical accidents and transportation of hazardous chemical cargo.

4. To develop a training system and to provide for the accessibility of information about the classification and labelling of chemical substances, chemical products and biocides among state institutions, producers of chemical substances and products, importers and users.

5. To promote scientific developments in the research of chemical substances and biocides, to stimulate the introduction of results thereof in the production by developing clean and little residue technologies.

6. To improve the cooperation between state institutions and the professional associations of producers or importers of chemical substances, chemical products and biocides, to support their efforts in the development and implementation of environmental quality systems.

7. To ensure control of hazardous chemical substances and compliance of food products and articles with quality requirements.

8. To ensure that the use or spread of genetically modified organisms poses no threat to human health or biodiversity.

9. To provide the community with complete information about genetically modified organisms.

1.10.4 Expected results

1. Regulatory enactments relating to the circulation of chemical substances, chemical products, biocides and genetically modified organisms and administrative capacities for the monitoring of fulfilment of these enactments comply with the requirements set out in EU regulatory enactments.

2. Regular control established over activities involving the use of environmentally persistent and biocumulative chemical substances, genetically modified organisms and products produced on the basis thereof.

3. The principle of caution is observed with respect to the use of genetically modified organisms and realisation of products produced from such organisms in order to prevent unequal competition in commercial activity and uncontrollable spread of genetically modified organisms.

4. Persistent organic pollutants are gradually taken out of circulation and destroyed in a safe way for human health and the environment.

5. Cooperation ensured among entrepreneurs, environmental institutions, consumer protection organisations and the community in order to stimulate the reduction of the negative environmental effects of products during the whole period of circulation of the product.

6. A risk management strategy developed for the circulation of chemical substances, chemical products and biocides in emergencies, accident risks and during the transportation of hazardous chemical cargo.

7. A programme for the monitoring of pesticide residues in vegetable products has been developed and is being implemented.

8. Quality classification, labelling of chemical substances, chemical products and biocides is carried out and safety data lists drawn up by producers and importers, and information related to risk management is provided to state institutions and the community.

9. A unified information system has been developed and an informative portal opened on the Internet about issues relating to chemical substances, chemical products, biocides and genetically modified organisms.

II. ENVIRONMENT AND NATIONAL ECONOMY

This chapter pertains to the most important fields of national economy that require the integration of environmental requirements in their policies.

2.1 Environment and industry

2.1.1 Overview of the situation

The basic principles of the Latvian industry development provide for the following priority objectives: ensuring an environment favourable to the industry, development of an efficient and competitive industry structure, development of production based on modern technologies.

Currently modern technologies account for 3 to 4 per cent of the total industrial production while in the most advanced countries the percentage varies from 20 to 30. In order to provide for the development of the industry, particular attention is paid to innovations in the formation of favourable production conditions and promotion of cooperation between industry and researchers.

According to the industry policy of an expanded Europe, the European Union is to be turned by 2010 into the most dynamic and competitive, knowledge-based economy in the world. An action plan for reaching the objective provides for 3 per cent of the gross domestic product to be used in investments in research, development and innovations. Involvement in the development and implementation of the plan is particularly important for Latvia, because the total amount of investments in the development of science and technologies currently amounts to only 0.4 per cent of the Latvian GDP.

Following the adoption of the Pollution Law, Latvia has started developing a new procedure for issuing industrial enterprises with environmental permits. Enterprises are required to receive appropriate permits before they can start any activities resulting in environmental pollution. Each enterprise is evaluated by its environmental effects, its production technologies and know-how methods are analysed and requirements set for pollution emissions, noise, vibrations and waste management.

In recent years many Latvian enterprises have become aware of the role that the introduction of the International Standartization Organization standards plays in increasing the competitiveness of production and have started introducing quality and environmental protection standard systems (SSO 9000 and SSO 14000 series) as well as environment management and audit schemes (EMAS). Funds are increasingly being invested in changing production models, including the introduction of cleaner and more modern technologies. Active involvement in environmental test projects is taking place and cooperation with environmental institutions is being extended in the implementation of regulatory enactments.

The industrial sector has managed to reduce its development dependency from energy and water consumption. Consumption needs of the industrial sector

account for approximately 19 per cent of primary resources; however, the power consumption has reduced by 4 per cent over the last 6 years.

In recent years industrial water consumption has dropped by approximately one-fifth and now accounts for approximately 18 per cent of the total water consumption in the country. The introduction of a water consumption accounting system has contributed to the introduction of water saving measures in industrial enterprises.

Hothouse gas emissions produced by industrial processes are within the limits of 1 to 2 per cent, but in view of the overall consumption of fuel in industrial and building sectors, the total volume of these emissions amounts to 12 per cent. The emissions of nonmethane volatile organic compounds in industrial and energetic processes amount to 8 per cent of the total volume of emissions. The largest volumes of such emissions are produced by road asphalting works and food production.

However, no efficient environmental damage calculation and reimbursement system has been set up in the industrial sector as yet and proper legal and financial methods still have not been developed for the reduction of pollution and compensation of damage from the polluter's resources.

2.1.2 Main problems

1. Large quantities of polluting substances are emitted into the air, water and soil as a result of industrial activity.

2. Natural resources are used intensely and natural landscapes transformed irrecoverably.

3. The risk of accidents exists which may result in leakages of hazardous chemical substances, explosions or fires.

4. Environmental pollution, increased noise levels, vibrations and electromagnetic radiation cause a negative impact on human health and the environment.

5. Lack of mechanisms for ensuring that the principle 'polluter pays' actually works.

6. Insufficient knowledge and awareness on the part of producers about the best know-how practices and cleaner production principles.

7. Lack of a constructive dialogue between state environmental institutions and producers and a rather low level of participation by the community in the decision-making process.

8. Limited administrative capabilities of consulting organisations and environmental institutions.

2.1.3 Policy goals

1. To modernise production in order to reduce environmental damage during the use of renewable natural resources and technological innovations.

2. To enhance scientific potential and information technologies in order to achieve a high level of energy efficiency in production and provide for a rational use of non-renewable raw materials.

3. To increase the role of modern technologies in production and to form an efficient state support system to promote the implementation of international standards and clean technologies.

4. To introduce the best available methods of know-how, to support the use of good production practice and adoption of experience in Latvian enterprises.

5. To promote the implementation of the principle of social responsibility in order to ensure that environmental requirements are voluntarily introduced in the activities of enterprises.

6. To ensure legal responsibility for the compensation of environmental damage.

7. To stimulate community involvement in the exploration and elimination of pollution threats.

2.1.4 Expected results

1. Smaller quantities of natural resources per production unit are used in production and emissions of polluting substances from industrial equipment are reduced.

2. Smaller amounts of industrial waste are produced and the level of hazardousness thereof has diminished.

3. Hazardous chemical substances used in production processes are replaced by less hazardous ones.

4. Work environment has improved (better air quality, less noise and vibration).

5. The ‘polluter pays’ principle works efficiently and compensation for environmental damage is ensured.

6. Wide-scale participation of commercial undertakings in international systems of quality and environmental protection standards.

7. Information provided about the best know-how and clean technologies available.

8. Good production practice implemented in a majority of production enterprises.

9. Industrial operators have, by taking extra precautionary measures, reduced the risk of environmental damage and accidents.

10. Cooperation improved among industrial operators and environmental institutions and the society.

11. A register of polluting substances set up; commercial undertakings are gradually reducing the use of very hazardous substances and provide the community with information thereof.

2.2 Environment and power industry

2.2.1 Overview of the situation

Both local (wood pulp, peat, water resources, wind energy) and imported energy resources (oil products, gas, coal) are used in Latvia for energy production purposes. In 2002 the total energy consumption in Latvia was approximately $2x10^{17}$J, of which approximately 60 per cent were produced using imports of energy resources.

In recent years the percentage of gas, environmentally the friendliest fossil fuel, has increased significantly, amounting in 2002 to 30 per cent of the consumption levels of primary energy resources in Latvia. Of the local energy resources, wood pulp fuel is used the most, which amounts to approximately 22 per cent of the consumption levels of primary energy resources, while the quantity of power produced by Latvian hydroelectric stations and wind power stations amounts to approximately 7 per cent. Depending on the quantity of precipitation, Latvian hydroelectric stations provide 60 to 70 per cent, while cogeneration plants provide approximately 25 per cent of the quantity of electric power produced in Latvia. The remaining required quantity of electric power is imported.

Heat is supplied by means of centralised (approximately 65 per cent) and local and individual heat supply systems. The use of gas and wood pulp has increased considerably in the centralised heat supply, while wood pulp (firewood, chips) is the principal source of fuel in local heat supply.

The coefficient of power-intensity: power consumption per unit of domestic gross product is diminishing in Latvia. This applies more to the reduction of fuel consumption rather than to the increase of power-intensity in production technological processes.

Emissions related to power industry have diminished by 64 per cent since 1990 and by 24 per cent, compared to 1995 levels. Power industry is the principal source of gasses producing the hothouse effect because the industry accounted for 47 per cent of the total volume of hothouse gasses emitted in Latvia.

In 2001 power industry accounted for 83 per cent of the total emissions of sulphur dioxide. However, compared to 1990 levels, the volume of sulphur dioxide emissions has reduced approximately 7 times. Approximately 90 per cent of sulphur dioxide is produced as a result of burning coal and black oil; the concentration of sulphur dioxide in the air increases significantly in the heating season, especially in the largest cities. Sulphur dioxide, especially in interaction with other polluters, has a direct negative impact on human health, plants and animals. Sulphur dioxide, mixed with nitrogen oxides and ammonia, results in acid precipitation, acidifies soil and waters, and causes damage to engineering structures, buildings and monuments of culture.

The principal sources of stationary pollution in power industry are steamhouses which in 2001 accounted for approximately 40 per cent of solid dispergated particles, 96 per cent of sulphur dioxide, 77 per cent of nitric oxides and 86 per cent of carbon monoxide. Heavy metal compounds are also emitted into the atmosphere. However, the pollution caused by heavy metal compounds is becoming smaller as steamhouses are reequipped and conversion to environmentally friendly types of fuel, i.e. wood pulp and gas is taking place.

Technologies and installations are still used in power industry that contain environmentally hazardous substances. Transformers and condensers containing hazardous organic compounds, including polychlorinated biphenyls, are in operation.

The burning of fossil fuel in steamhouses and furnaces also causes small emissions of persistent organic compounds in the air. These compounds also find their way into waters and soil, cause pollution of agricultural products, contaminate food and may accumulate in living organisms.

In recent years the number of small hydroelectric stations has increased considerably, with electric power purchase policy contributing to the process. However, the construction of new small hydroelectric stations and renovation of the old ones affects biodiversity. Blocking of fish migration routes which makes it impossible for fish to reach their spawning grounds is also viewed in a negative light.

Water level fluctuations in the water reservoirs of hydroelectric stations affect the survival prospects of fish spawn laid by species spawning on the coasts negatively. Specially protected biotopes and species are also degraded, changes occur in the landscape, microclimate and ground water levels, which has a direct negative impact on the water quality in river basins. The variety of flora and fauna is also changing, flooded places become marshy and bank erosion takes place as a result of large fluctuations in the water level.

The European Union policy is directed towards a wider use of renewable energy resources and biologic fuel, development of cogeneration plants, raising of energy efficiency and improvement of the tax system, which will on the whole help save energy. EU regulatory enactments also call for significantly reducing the use of fuel that contains high levels of sulphur.

2.2.2 Main problems

1. Air pollution caused by the use of fossil fuel which results in global climate changes.

2. Insufficient financial resources for readjusting the operation of steamhouses in accordance with EU environmental requirements.

3. The burning of various types of fuel for energy production purposes without required permits and equipment, which increases air pollution significantly.

4. Substantial energy losses and increased of fuel consumption in buildings with insufficient energy efficiency.

5. Lack of regulatory enactments that would stimulate the production of alternative power and the implementation of environmentally friendly technologies.

6. Unreasonable use of highly productive energy instead of lower quality energy.

7. Failure to employ efficient technologies for the use of biomass.

8. Natural processes disturbed in natural ecosystems as a result of the operation of hydroelectric stations.

9. The negative effect of power distribution networks on natural ecosystems.

10. Insufficient awareness of the community about the effect of power industry on the environment and on biological fuel production capacities.

2.2.3 Policy goals

1. To contribute to the sustainable development of power industry.

2. To reduce environmental pollution caused by power industry, especially the emissions of air pollutants.

3. To increase the use of local renewable resources.

4. To include environmental costs in the price of energy.

5. To ensure a more efficient use of energy resources by implementing modern and environmentally safe technologies.

2.2.4 Expected results

1. Reduced emissions of polluting substances from power production equipment.

2. Energy consumption has diminished in national economy and households as a result of increased energy efficiency.

3. The percentage of used renewable energy resources has increased and state dependence on imported fuel deliveries has diminished.

4. An energy tax has been introduced, and the revenue obtained from it is used for the implementation of environmental protection requirements in enterprises of the power industry.

5. The biological fuel produced in Latvia corresponds to international quality standards and use thereof is increasing in the country.

6. A base has been set up for the reconstruction and expansion of the existing and new oil extraction plants in Latvia.

7. Preconditions have been created for the setting up of biogas production installations in farms of domestic animals, food processing enterprises, solid waste landfill sites and sewage purification plants.

2.3 Environment and transport

2.3.1 Overview of the situation

Thanks to the beneficial geographical position of Latvia which ensures transit cargo traffic between the East and the West, there has been a particularly fast development in the transport field in Latvia in recent years. Transit traffic accounts for nearly 80 per cent of railroad cargo transit and 90 per cent of cargo transit in ports as well as 60 per cent of road transport to and from ports.

Next to the positive development trends in transport, there are also negative tendencies: consumption of energy resources increases in the field (plus 59 per cent compared to 1995) and passenger traffic decreases in the public transport system (less 8 per cent compared to 1995). The carrying capacity of main motorways near major cities and trunk roads is approaching its maximum.

Transport causes significant levels of air pollution in major cities, particularly in Riga. Of the total volumes of polluters emitted by transport, nitric oxides, volatile organic solutions, sulphur dioxide and substances causing the greenhouse effect account for 58, 31, 16 and 23 per cent, respectively.

An ever increasing number of cars and trucks causes an increase in the volumes of emitted gasses, which results in increased levels of overall air pollution. Transfer and distribution of oil products causes considerable levels of pollution by volatile organic compounds. In recent years there has increased the number of complaints by residents about odours caused by the transportation of oil products by railway and transfer of these products.

Transportation and transfer of hazardous substances may cause serious environmental damage in case of accidents. In 2002 a leak of oil products took place at the Butinge oil terminal which increased the pollution level on the Latvian sea coast. In recent years there have also been minor railway accidents and cases of illegal connection to oil product pipelines resulting in soil and ground pollution. Environmental recovery following such accidents is usually a lengthy and costly process.

There still exists the risk of tanker accidents since ship traffic in the Baltic Sea is one of the most intensive in Europe. The Baltic Sea is shallow and is included in the group of saltish water basins, therefore its ecosystem is very sensitive. Even a single tanker accident may result in an ecological disaster.

Intensely used motorways, railways and seaways may seriously affect human health, environmental quality and deplete biodiversity.

The noise caused by transport significantly increases the overall noise level in cities and near transport trunk roads and nodes. Waste created by the transport system and end-of-life vehicles also increase the negative impact on the environment.

2.3.2 Main problems

1. Motor vehicles cause significant levels of air pollution and air quality standards are exceeded in cities with high traffic intensity.

2. The air pollution caused by transport accounts for a significant portion of emissions of greenhouse gasses and the transboundary flow of air pollution.

3. The influence of transport on human health and environment is not taken into account adequately when developing transport infrastructure and planning traffic flow in cities and rural areas.

4. Public transport, in particular railway, is becoming less important in terms of passenger traffic volumes.

5. Areas required for transport infrastructure (roads, parking places, repair shops, filling stations) increase.

6. Growing dissatisfaction of the residents with offensive odours emitted by terminals, oil bases and filling stations.

7. Environmental pollution by oil products continues as they leak from pipelines, as a result of accidents involving freight trains and ships, as well as in daily activities.

8. Extra pollution in winters caused by scattering salt on streets and roads and chemical treatment of railway beds.

9. Increased pollution levels with compounds of heavy metals near take-off areas in airports.

2.2.3 Policy goals

1. To increase energy efficiency in the field of transport and to reduce the environmental pollution caused by transport.

2. To set up installations for the removal of volatile organic compounds in petrol transfer and distribution systems.

3. To promote the use of transport vehicles causing smaller quantities of emitted air polluting substances per unit of cargo or passenger.

4. To reduce the risk of accidents in the transportation of hazardous cargo.

5. To promote a road maintenance system in winters that would be environmentally friendlier.

2.3.4 Expected results

1. Emissions of pollutants from transport vehicles, terminals and petrol pumping stations as well as their harmful impact on human health and environment have reduced.

2. Reduced energy consumption in the field of transport.

3. Improved air quality in major cities and less time spent in traffic jams.

5. A significant reduction in the number of accidents related to the transportation of hazardous cargo.

6. More stringent requirements set for the quality of petrol and diesel.

7. Oil bases and filling stations equipped with installations for the removal of volatile substances.

9. More stringent exhaust gas emission requirements applied in annual state technical inspections of transport vehicles to all vehicles first registered in Latvia after 2001.

2.4 Environment, dwellings and construction

2.4.1 Overview of the situation

Construction is one of the most dynamic fields in Latvian national economy. From 1996 to 2001 the average increase in production volumes in the field was 8.8 per cent, and in 2002 the increase was plus 10.8 per cent compared to 2001 levels. Construction accounted for 6.1 per cent of the GDP in 2002. Construction volumes of engineering structures (communications, ports, water supply and sewage networks) are also growing.

At a state level construction attracts approximately one half of all capital investments; it is related to all fields of the national economy because it creates a base for the fields in the form of buildings and structures. It is important for the state to develop sustainable construction and the closely related building industry (production of building materials and building constructions).

Structures, the product of construction, are divided in buildings (dwelling, public and production buildings) and engineering structures (roads, bridges, tunnels, and waterworks). Pursuant to regulatory enactments, engineering structures as specialist construction fall within the competence of respective ministries, and these activities are set out in relevant national programmes, for example, in the National Programme for Transport Development and Latvian National Programme for the Development of Power Industry.

The state energy efficiency strategy lays down measures to be carried out in construction for the improvement of thermotechnical parameters of outer enclosing constructions for buildings, heating, ventilation, lighting and other standards by introducing a building energy auditing system as well as for the reduction of energy consumption in the management of existing tenement houses. The tasks of the Housing Agency include the coordination and management of energy efficiency improvement projects (heat insulation of buildings, adjustment of heating systems) in the housing sector within the framework of the Housing Crediting Programme.

In early 1990s production levels of construction products dropped and the production of glass, mineral wool and perlite was stopped. However, production volumes of Portland cement, clay bricks, and precast reinforced concrete constructions have stabilised after 2000.

Construction materials and construction materials obtained from recycled waste are regarded within the framework of the Latvian National Programme for Foreign Trade as prospective export goods because approximately 40 per cent of the construction materials produced in Latvia are exported.

Construction and the building industry affect not only the lives of individuals but also the natural balance. For these reasons the state building strategy is directed towards the use of environmentally friendly technical and technological solutions, choice of environmentally safe quality materials at the initial design stage and towards an environmentally safe construction process.

Unfinished construction objects which are mainly found in Riga and in the districts of Liepāja and Dobele not only mar the landscape but have also degraded large areas of agricultural lands. The construction of dwelling houses built using industrial processes also creates problems because it requires territorial landscaping, reconstruction of existing buildings and even the demolition of unfinished buildings.

The quality of outer enclosing structures and engineering networks (heat and water supply systems) of buildings does not meet modern standards and causes a disproportionate consumption of energy resources and water losses amounting up to 20 per cent of water production levels.

As suggested by the experience of EU countries, up to 70 per cent of the total potential of energy efficiency may be reached at the consumer level. Individual projects in public buildings and demonstration projects in dwelling houses are therefore being implemented in the country.

Construction materials harmful to the environment and health such as slates, glass wool, hazardous hardboard, paints and varnishes were used widely in Latvia formerly. However, the dismantling of structures harmful to health and the storage of their elements in appropriate storage places is a labour intensive process which cannot be completed within a short period of time.

Construction is closely related to the quality of territorial planning at various levels. In large-scale processes it is important to observe restrictions on construction works or even prohibitions to build permanent structures in territories with unstable ground, active karstic phenomena, territories subject to flooding or territories that are not protected against forest and marsh fires.

Not always are territorial planners aware that works related to the narrowing of river beds, increase in asphalted areas and construction of inappropriate rainwater drain systems may cause a serious risk of flooding. Hydraulic modelling is to be performed prior to commencing such works. It is also important to preserve river flood plains, lakes, wetlands and extra capture capabilities for flood waters and to evade the reduction in natural infiltration.

The preservation of the natural base as well as the provision of access to natural environment and recreational sites within city limits is very important.

Whenever construction works are commenced, popular opinion about the impact of the structure under construction on health and environment is becoming increasingly important. There are regulatory enactments in force in Latvia which lay down the rights of residents to participate in the assessment of environmental effects and public discussion of construction works. However, neither the discussion of territorial development nor construction plans has reached the desired level as yet.

2.4.2 Main problems

Development of construction

1. A disordered housing fund and insufficient construction volumes in the dwelling houses sector.
2. Unfinished construction on the outskirts of cities and settlements formed of constructions which have lost their functional meaning and which are not in demand.
3. Insufficient development of engineering communications.
4. Reduction of the natural base and territories fit for recreational purposes in cities.

Development of the building industry

5. Insufficient popularisation of environmentally friendly technologies and local building materials.
6. A disordered construction waste management system and non-recultivated exhausted quarries of minerals.
7. The issue of dismantling buildings constructed using building materials hazardous to health and the environment not solved.
8. Insufficient degree of readiness for transition to an integrated permit system in enterprises of the construction industry.

Environmental effects of construction

9. Lack of measures for the improvement and extension of the period of use of reinforced concrete buildings.
10. Limited measures for increasing heat retainability in buildings and adjustment of internal engineering communications in the sector of residential and public houses.
11. Use of materials hazardous to health and insufficient control over construction.
12. Insufficient development of territorial planning at all levels.
13. Insufficient provision of information to the community and participation thereof in the public discussion about construction and assessment of its environmental impact.

2.4.3 Policy goals

1. To promote sustainable, natural resources and energy resources saving construction and production of building materials.
2. To promote the production and use of local and environmentally friendly construction products.

3. To preserve the historical and traditional housing and to extend the life of structures and constructions by using scientifically approved technologies.

4. To improve environmental education in the higher and professional education system in the sphere of construction.

2.4.4 Expected results

1. Smaller extent of pollution caused by construction and operation of buildings.

2. Energy efficient, natural resources saving construction and use of buildings.

3. Extensive use of little residue technologies in the production of construction products.

4. Use of local quality building materials and building constructions, including efficient solutions of standard nodes and components made of linking and modern building materials.

2.5 Environment and state protection

2.5.1 Overview of the situation

The principal task of the environmental policy in the military sphere is to ensure an environmentally safe approach in the organisation and performance of military activities as well as in the operative elimination of negative effects caused thereby. By organising military exercise on training grounds correctly it is possible to provide for the preservation of biodiversity. The observance of environmental protection regulations and NATO standards is an important precondition for the successful completion of this task.

Since the armed forces cannot avoid causing a negative environmental impact during the performance of their duties and military exercise, it is the duty of the state defence system to organise any military activities so as to limit the impact to the maximum extent possible.

Latvian National Armed Forces (NAF) use only a small part of the territories occupied in the past by the Army of the former USSR. Adjusting and purifying these territories requires large funds. This task is not only important from the point of view of environmental protection but also militarily and in terms of national economy. If adequately equipped and maintained, military training grounds could be of interest to partners in NATO member countries. Resources obtained from the use of these military training grounds in the training of foreign military units could be used for local needs.

The network of Soviet military units and institutions in Latvia used to be very extensive, therefore large Latvian territories are still polluted by large quantities of hazardous substances, unexploded and damaged shells, mines and aviation bombs, and various substances discharged in the soil and water bodies.

1,094 army units used to be stationed in Latvia. These units were located in 679 military objects which covered an area of approximately 100 thousand ha. The military objects were spread across the Latvian territory irregularly. The largest number of these objects was located in the western part of Latvia in the districts of Liepāja and Ventspils. This was related to the USSR border at that time and the presence of one of the largest navy bases by the Baltic Sea: the Liepāja Port which for 50 years used to be the second largest Soviet naval base. Army divisions were also present in large number in Riga and in its vicinity, since the Baltic Military District Headquarters were based in Riga and there was also a naval port in Bolderāja. A comparatively smaller number of USSR army objects was located in eastern districts of Latvia. The largest number of military bases was concentrated in the major railway junction in Daugavpils. Only two administrative districts of Latvia, i.e. the districts of Ludza and Preiļi were clear of any objects of the USSR Army.

Explosion threats still exist in military training grounds which are often found to be polluted with unexploded shells or chips thereof. The top layer of earth was damaged, woods were cut, soil and ground water were polluted during

the construction and management of military objects. Sewage purification systems were often not installed or out of operation.

The territory polluted with items posing a threat of explosion occupies one- seventh of Latvian land. Particular density of soil pollution with unexploded shells is found in combat sites of WW I and II, particularly in the districts of Liepāja, Tukums, Dobele, Cēsis and Madona. Items posing a threat of explosion have also been left behind at military training grounds of the former Soviet Army and at army base sites. The former aviation bomb training ground in Zvārde and the territory covered by ammunition depots in Cekule are particularly polluted and dangerous.

The NAF staff have been carrying out neutralisation of unexploded ordnance left in the Latvian territory since 1993. Activities involving the handling of explosive items are particularly dangerous and are regarded as missions. On the average approximately 4 thousand blockbuster ordnance are destroyed by the NAF staff annually.

Approximately 80 unexploded explosive items are found and destroyed or transferred for destroying by the Latvian Marine Forces operating on their own or as part of the Baltic Marine Force Squadron annually. The Marine Forces also participate in major international countermine operations conducted annually in the territorial waters of Estonia, Latvia, and Lithuania.

The Ministry of Defence has prepared proposals with a view to commencing a detailed research in the polluted territories and developing recultivation and purification plans. In 2002 a Programme for the Exploration and Registration of Polluted and Potentially Polluted Sites was developed and a database of territories held in tenure by the Ministry of Defence created. In 2003 work was continued with respect to conducting a detailed research in the territories, extra investigation was conducted to assess the level of hazardousness posed by these sites, control bores were made, samples taken, chemical analyses and calculations performed to determine primary actions and work out a recovery programme.

The Latvian Armed Forces are forced to carry out measures for reducing the pollution levels left by the Soviet Army. Hazardous substances found in large quantities in the abandoned territories of the Soviet Army are deposited, with the assistance of the joint-stock company BAO, in hazardous waste depositories.

Specialists of the Latvian NAF have found as a result of examining their territories that pollution in the military bases of the former USSR is characterised by the following groups of pollutants: oil products (fuel, lubricants), missile fuel, asbestos, heavy metal compounds, degassing substances and solutions thereof, transformer oil, paints and solvents, ordnance (including unexploded shells), municipal waste and construction waste.

Since the stock of heavy armour vehicles at the disposal of the Latvian NAF is minimal and there are no jet and heavy tonnage aeroplanes that usually discharge their fuel reserves before touchdown, the environmental pollution risk

is small. Tactical exercise is also organised in accordance with environmental protection requirements, for example old transport units which may leak lubricants and residue of fuel as a result of being damaged are not used as shooting targets.

Currently only small-scale pollution accidents are possible at the territories used by the NAF; pollution with oil products in car parks (obsolete filling stations) or as a result of a traffic accident, pollution with lead: in shooting ranges, or pollution with municipal waste, construction waste and hazardous substances.

Measures are being implemented at the NAF to raise personnel awareness of issues concerning environmental protection.

2.5.2 Main problems

1. Environmental pollution of the occupation period, particularly with explosive articles.
2. Insufficient number of environmental specialists in the NAF.
3. Environmental management plans have not been developed for all military territories.

2.5.3 Policy goals

1. To ensure raising the level of environmental awareness among persons employed in the defence sector.
2. To ensure gradual improvement of environmental quality in all military objects and territories of the former USSR.
3. To restrict the use of environmentally hazardous substances by stimulating the sorting, processing or reuse of liquid and solid waste.
4. To facilitate energy saving measures and the use of renewable sources of energy.
5. To enforce compliance with requirements for the preservation of nature, ensure the protection of rare species of plants and animals, preservation of ecosystems, biodiversity, social and cultural and historical values.
6. To carry out regular activities for the elimination and prevention of single pollution, cleaning up and recultivation of natural objects, and the involvement of military structures in civil environmental protection measures and projects.
7. To acquaint the community with the territories of military objects for educational purposes and for purposes related to environmental protection.

2.5.4 Expected results

1. Pollution threats averted, recovery started, environmentally friendly technologies are being used, all technological processes and work methods have been converted to reduce environmental threats.

2. The use of environmentally hazardous substances and products is limited, liquid and solid waste is sorted, processed and reused.

3. Defence personnel is trained in issues concerning environmental protection and environmental awareness has increased.

4. Development of plans for the environmental management of location sites of NAF units, objects and institutions completed, implementation of these plans commenced and pollution control ensured.

2.6 Environment and agriculture

2.6.1 Overview of the situation

Rural areas is home to 32 per cent of Latvian inhabitants of which 12.5 per cent are employed in agriculture, 2.4 per cent in forestry, 1.2 per cent in fishery, while the remaining percentage of inhabitants are employed in the processing of agricultural or forestry products, maintain rural infrastructure or are self-employed. Of the 174 thousand farms, only 57 thousand (33 per cent) were involved in the production of agricultural products in 2002.

Land areas used in agriculture have diminished from more than 45 per cent to 38 per cent, mainly on the account of an increase in afforestation and only slightly as a result of the enlargement of objects of infrastructure and populated territories. More than 95 per cent of the Latvian territory is used for the traditional rural lifestyle characterised by low density of population (the average density of population in the countryside is less than 12 individuals per square kilometre).

The restructurization process will continue in rural areas, people will resettle closer to the existing centres of parishes or cities, the number of rural farms will become smaller while their areas will increase up to 50 hectares and more. The specific weight of agriculture continues to diminish since 1990 and in 2001 it accounted for 2.8 per cent of the GDP.

In the plant-growing sector, the growing of technical crops (sugar beets, rapes) and cereals as well as vegetable growing is currently developing, but no increase is observed in the production of flax. There is a development trend observable in animal breeding which is facilitated by state support. In other fields the fastest progress is seen in swine-breeding and poultry keeping. Production volumes in dairy-farming and cattle-growing for meat are expected to grow following the accession to the European Union as direct payments will become available for agricultural enterprises.

The largest environmental threat is caused by animal and poultry breeding complexes where large quantities of manure are produced within small areas. Pig farming complexes have lost the majority of areas where manure was formerly utilised in liquid or solid form. Smaller areas therefore bear a much higher nutrient load, soil and ground, ground waters and surface waters are polluted.

Compared to early 1990s, the use of organic fertilisers has dropped significantly. In 2001, the total volume of fertilisers worked into soil amounted to only 30 per cent of the 1990 levels. Since 1994 the amount of fertilisers used per year varies within the limits of 4 to 6 million tons. In order to maintain an optimum level of organic substances in the soil, the use of organic fertilisers should be on average 40 to 60 tons per one hectare of arable land once in 3 to 4 years, which is not currently ensured.

Following a sharp drop in the use of mineral fertilisers and plant protection substances, the quantity of mineral fertilisers used and the areas treated with plant protection substances in 2001 have again increased more than twice if compared to 1995. However, the total crop of cereals gathered in such areas has only increased 1.4 times.

Of approximately 2.5 million hectares of the land used in agriculture, arable land accounts for 66 per cent while the rest of the land is covered by pastures, grasslands and perennial plantations. Until 1990, 63 per cent of agricultural lands were meliorated, including 37 thousand hectares in areas subject to flooding protected by polders. However, in the last decade melioration systems are not maintained and preserved sufficiently.

As the volumes of agricultural production diminish, the percentage of agricultural lands not used increases from 11 per cent in 1995 to 21 per cent in 2001, on the average by 34 thousand hectares per year.

The abandonment of agricultural lands has resulted in these territories overgrowing with weeds and shrubs. In 2001 the percentage of weed infected areas amounted to 7.2 per cent while areas covered with shrubs accounted for 1.7 per cent of the total area of agricultural lands. From the perspective of environmental protection, the overgrowing of agricultural lands is undesirable because it results in the extinction of many valuable biotopes.

The number of certified biological agriculture farms is getting close to four hundred; they cover an area which equals nearly 1 per cent of the total area of agricultural lands. The principal fields include grain farming, vegetable farming, dairy cattle breeding and bee-keeping. In the absence of a processing system for these products, mainly unprocessed products are sold such as vegetables, buckwheat, honey and bee-keeping products. As the demand for these products increases in the domestic market, biological agriculture could take up to 25 per cent of agricultural lands if processing of these products is ensured and the EU market used.

The number of farms operating in non-traditional fields of agriculture is constantly increasing. In these farms, cranberries, herbs or mushrooms are grown or non-traditional animal breeding conducted (fur-bearing animals, deer, rabbits, quails, pheasants or ostriches grown). The growing of wild animals and laying out of hunting grounds is developing rapidly in the field of alternative management lately. At present there are 20 wild animal gardens in Latvia covering approximately 5 thousand hectares (of these approximately 2 thousand hectares are enclosed) with more than 2 thousand animals (mainly roe deer and fallow deer). These numbers are expected to at least double in the near future.

The growing of fish and crayfish involving nearly 200 farms as well as fishing in local lakes (200 farms) and pay fishing is becoming more popular. However, pond management causes serious environmental problems because in autumns when water in fish ponds is lowered large quantities of fish nutrient residues and pond bed sediments get into inland waters.

More than 300 farms operate in the sphere of rural tourism. As the purchasing ability of residents and interest of foreigners about recreation in Latvia increases, rural tourism is becoming an actually functioning sector of the national economy. The environmental load of rural tourism may, however, be large.

An overall assessment of the capabilities of alternative production shows that the production of biofuel and afforestation of unused agricultural areas can only affect large areas and attract significant labour resources. One of the most important circumstances that is to determine future development tendencies in the use of agricultural lands is related to the implementation of the National Programme of Biofuel. Sowing areas of rapes (up to 100 thousand hectares in 2007) as well as sowing areas of cereals and potatoes may be increased significantly to ensure production volumes of methanol within the framework of the programme.

Approximately 2 million hectares of agricultural land would be required in the event that the possibilities of alternative production are used fully. On the other hand, 1.2 million hectares are only available for intensive traditional agriculture.

Environmental problems in rural areas are caused not only by enterprises involved in food circulation (food processing and distribution) but also by the rapidly increasing wood processing volumes, enterprises providing agricultural services and factory production units situated outside cities.

In food production the difficulties related to sewage treatment are related to the marked periodicity of sewage production, changes in their volume and pollution composition. Purification technologies therefore have to be adapted to drastic load changes. Sewage from processing plants may be successfully treated together with municipal sewage from settlements in individual cases only. Part of solid waste do not meet the criteria for municipal waste, either, and require special treatment before they are buried, for example in the case of waste from slaughterhouses and meat processing plants.

No solution has been found for the management of animal waste as yet that would meet environmental protection and veterinary requirements. In many cases animal waste is buried without processing in landfill sites for municipal waste. The introduction of a system for the collection and destroying of animal waste products is a fundamental precondition for the export of Latvian meat products. EU fund co-financing must be attracted in order to develop the system.

The traditional Latvian rural landscape was fundamentally changed in the period from the 1960s to 1980s when a large number of farmsteads was eliminated. The traditional landscape was not changed significantly in fishermen villages in Kurzeme which were closed for economic activity and visitors for a long time or in remote parts of Latgale where economic activity was low.

The Latvian rural landscape is undergoing degradation as a result of territorial overgrowing with trees and shrubs which obstruct both the view on elevations and the view opening from hilltops on lakes and hollows. Maintaining

rural landscape is, however, a difficult task because it requires adequate planning and attraction of funding.

2.6.2 Main problems

Sustainable rural environment

1. Significant reduction in the area of lands usable in agriculture.
2. Economic and social instability in many rural settlements.
3. Low economic and energy efficiency of agriculture.
4. Lack of quality and order in public utilities that do not meet environmental and health standards.
5. Unsolved environmental and economic issues relating to plots of gardens.

Traditional agricultural production

6. Degradation of unmanaged meliorated and cultivated areas.
7. Soil and water pollution, particularly near the large animal and poultry breeding.
8. Inadequate manure repositories which cause atmospheric and water pollution.
9. No system exists for the collection and destroying of animal waste.
10. Pollution caused by draining fish ponds.

Condition of agricultural land and soil fertility

11. Increase in areas overgrown with shrubs and weeds, and spread of certain plants (cow parsnip).
12. Insufficient mowing and depasturing of areas which serves as a precondition for burning old grass.
13. Disappearance of valuable grassland biotopes as low-lying lands next to rivers and lake shores overgrow.
14. Insufficient care for melioration systems.

Alternative management in rural areas

15. Insufficient preconditions for the expansion of alternative production.
16. Insufficient information and knowledge about environmentally friendly alternative management.

Food processing plants

17. Insufficient repeated use of water in cooling and washing processes.

18. Insufficient purification of sewage and lack of pre-purification installations in food processing plants.

19. Accumulation of sawdust and other wood processing waste and the resulting pollution.

20. Deficiencies in the management of production waste and other hazardous types of waste.

Preservation of rural landscape

21. Overgrowing of agricultural lands and waysides which reduces the ability to perceive the scenery.

22. Deforestation regardless of the value of the landscape.

23. Lack of recultivation activities with respect to quarries and turning thereof into waste dump sites.

24. Untidiness of farmsteads, former farm complexes and machine shops which creates a sense of being abandoned.

25. Lack of easily perceivable information about landscape management principles and attraction of financing for attending to rural scenery.

2.6.3 Policy goals

1. To provide for a sustainable use of agricultural resources.

2. To reduce the pollution, degradation and erosion of soils.

3. To reduce the leakage of plant nutrients from agricultural lands, including pollution by nitrates in particularly sensitive territories.

4. To limit the extent of eutrophication and pollution of waters with residues of pesticides and compounds of heavy metals.

5. To avert environmental pollution with food processing and wood processing waste.

6. To reduce the load produced by sewage and waste in rural settlements.

7. To avert the reduction of biodiversity and degradation of the rural landscape by means of planning and sound land management methods.

8. To promote the development of environmentally friendly agriculture and the introduction of good agricultural practices.

9. To stimulate the production of biofuel.

2.6.4 Expected results

1. Reduced agricultural pollution levels of surface and underground waters and soil.

2. Pollution with nitrates averted in particularly sensitive territories.

3. Improved potable water supply, sewage purification and waste management in rural areas.

4. Manure depositories built which conform to environmental protection requirements.

5. The percentage of biological agriculture in the total production has increased.

6. The number of people employed in alternative agriculture and agricultural land areas has increased.

7. The percentage of biofuel produced in Latvia has increased in the power industry.

8. Restrictions in the management of protected areas are enforced and rural landscapes restored.

9. A system for the collection and destroying of animal waste products established.

2.7 Environment and forestry

2.7.1 Overview of the situation

The total forest area in Latvia is nearly 2.9 million hectares (45 per cent of the state territory) and a tendency is observed for it to increase at the expense of lands not used in agriculture which are either afforested artificially or overgrow naturally.

The spread of forests in Latvia is not uniform and varies from 25 - 30 per cent (the districts of Dobele, Jelgava, Bauska, Preiļi, and Rēzekne) to up to 50 – 60 per cent (the districts of Ventspils, Talsi, Aizkraukle). 1.45 million hectares (51 per cent) are state-owned, of which 1.37 million hectares are managed by Latvijas Valsts meži, a state-owned joint stock company, while the rest is managed by institutions subordinate to the Ministry of Environment and Ministry of Defence. 1.25 million hectares (45 per cent) of the forests are managed by over 150 thousand private forest owners (with the average area of property at 8 ha) while 0.2 million hectares (3.9 per cent) of the wooded areas are managed by local governments.

Growths with the pine (1.06 million ha) and the spruce (0.5 million ha) as dominant species are the most widespread ones. The rest of the areas are covered by growths of the birch, aspen, black alder, white alder, ash, and oak as the dominant species. The age structure of growths is not uniform: growths aged 50-60 years (13 per cent of the wooded areas) are the most widespread ones that have formed as a result of abandoned agricultural lands which started overgrowing in the 1940s. The areas covered by growths aged up to 10 years and 10-20 years are significantly smaller (4.6 and 5.3 per cent, respectively).

Wood pulp resources are currently regarded as the most important wood resources in the national economy and the production volume thereof has increased over the last decade from 4 million cubic metres in 1992 to 11.29 million cubic metres in 2002. More than 60 per cent of wood pulp are obtained in privately owned forests. At present private forest owners often do not make any investments in forest renewal and care, therefore the quality and productivity of forest growths is already diminishing.

The total contribution of the forest industry, which includes forestry (from forest renewal and care to wood pulp production) and lumber production, to the national GDP in 2001 was 10-12 and 40 per cent respectively of the total Latvian export volumes expressed in terms of money. The forest industry is the only industry of the Latvian national economy with a positive balance ratio of exports and imports.

As an important part of the ecosystem, the forest plays an important role in the regulation of the climate, water regime and water quality, soil protection, preservation of biodiversity, and enhancement of the environmental landscape and recreational value. In order to ensure compliance with environmental and

nature preservation requirements, 16 per cent of forests have been included in various protective zones and protected territories.

According to the statistics compiled by the State Forest Service, in 2002 forestry operations were prohibited in 2.5 per cent of the forest area, while main cuttings and clear-cuttings accounted for 4.8 and 5.5 per cent of the forest area, respectively. By increasing the use of forest environment for recreational purposes it is possible to create extra jobs and extra sources of income in rural areas as well as to use the ecological, economical and social potential of the forest industry purposefully.

Certification of the forest industry is carried out in order to promote a sustainable forest management that would be beneficial to the environment and the society. The whole forest area managed by the state-owned joint stock company Latvijas Valsts meži has been certified in accordance with the Forest Supervision Scheme. The European forest certification system has also been introduced. Private forest owners make their choice between either these two certification systems.

The Latvian Forest Policy sets out the principal directions of development of the forest industry and lays down the general purpose: a sustainable management of the forest and forest lands. Management supervision and protection of all types of forests is ensured by the State Forest Service jointly with the principal forestry offices situated in all the districts, while the state-owned joint stock company Latvijas Valsts meži takes care of the management of state forests.

The forest industry has a direct effect on the forest biodiversity, quality of water, air and soil and the landscape. An intensive forest industry usually affects biodiversity negatively resulting in the extinction of species which require specific conditions for their life, such as large trees and permanent humidity and lighting conditions. However, the negative effect can be reduced by laying down extra requirements for the preservation of nature in the forest industry (trees left over in the felling for the attainment of their biological age, large fallen trees left on the ground, buffer zones with wetlands preserved), using forest management methods that do not affect the forest environment significantly (selective cuttings) as well as exploring and protecting forest areas of high biological value.

Forest areas near the shores of still water bodies and running waters accumulate various types of pollution preventing it from getting into lakes and rivers. Wooded banks contribute to the maintenance of a special system of microclimate and shades near rivers which prevents rapid changes in the water temperature and preserves water quality. The maintenance of water quality is also essential for the preservation of biodiversity, for example the freshwater pearl mussel needs running waters of invariably high quality. Therefore, when planning forest management activities, it is essential to provide for protective belts along waters where economic activity is performed in a limited extent, setting the preservation of water quality as the principal task.

2.7.2 Main problems

1. Reduction of the forest biodiversity as a result of intensive forest management activities, particularly in private forests.
2. Reduction in the attracted volumes of carbon dioxide as a result of the increased intensity of forest use (in terms of the volumes of cut wood).
3. Insufficient restoration of cut wood areas and care for them.
4. Insufficient knowledge on the part of the society, particularly private forest owners, about forest role in the preservation of environmental quality and biodiversity and forest management.
5. No attention is paid to landscape planning in the forest management process which would ensure the preservation of the traditional cultural landscape and provide for the needs of various species.

2.7.3 Policy goals

1. To preserve forest biodiversity and the quality of ecological functions in the regulation of climate and water conditions as well as soil protection.
2. To increase the attraction of carbon dioxide by supporting the afforestation of lands not used in agriculture and to promote deliberative measures for increasing the productivity of forest growths.
3. To stimulate the use of wood pulp and articles made of it in order to preserve the bound carbon accumulated in the wood pulp.
4. To improve knowledge of forest owners, managers and the society about the importance of forest biodiversity and forest ecological functions.

2.7.4 Expected results

1. A national Latvian forest programme which includes related industries has been developed.
2. Forest monitoring is ensured and an inventory of forest territories crucial in the preservation of biodiversity has been taken.
3. No reduction is observed in the annual increase of accumulated wood pulp thus providing for stable attraction levels of carbon dioxide and accumulation thereof in wood pulp.
4. An increase in the forest productivity and enhancement of quality is provided for by afforestation of lands not used in agriculture, renewal of forests and care for forest growths.
5. The society and in particular forestry specialists and forest owners are informed and educated in environmental matters.

2.8 Environment and fishery

2.8.1 Overview of the situation

The fishing industry comprises fishery and fish processing, angling, propagation of fish resources, aquaculture, science and management of the fishing industry. In 2002 the fishing industry accounted for 1.5 per cent of the Latvian GDP. The fishing industry is charged with the management of fish, lampreys, crayfish and other animals of the aquaculture (except for water mammals and amphibians).

The waters under the jurisdiction of the Republic of Latvia constitute more than 10 per cent of the total area of the Baltic Sea waters. Latvian inland waters cover 2,543 square kilometres of the state territory. Fish have always been very important for Latvians, and they provide up to 15 per cent of food proteins.

The quantity of fish caught by Latvian fishermen in the Baltic Sea and the Gulf of Riga per year is approximately 72 to 80 thousand tons. Over the last three years, fishing quotas have been reduced in the Baltic Sea and The Gulf of Riga for the principal industrial fish species: codfish, sprats and Baltic sprats which account for 99 per cent of the total Latvian haul of fish in the Baltic Sea.

There is a sufficiently developed infrastructure on the shores of the Baltic Sea and the Gulf of Riga which meets the needs of the industry; it consists of 10 ports, refrigerators, and roads but large funds are required for the modernisation of ports and the installation and development of an internal infrastructure (refrigerators, water supply systems, ice production installations, packaging shops) for the needs of the fishing industry.

The largest fish processing plants are situated mainly on the coast of the Baltic Sea and the Gulf of Riga; however, the fast growth of commercial activity has resulted in the development of a network of small enterprises operating in the industry all over Latvia.

Fish caught by local fishermen in the Baltic Sea and the Gulf of Riga (sprats, Baltic sprats, codfish and salmon) and fish caught in inland waters constitute the basis for fish products prepared and preserved in Latvia.

The varied forms of surface waters determine the variety of the Latvian fish fauna. A total of ca. 70 local fish species are found in the Latvian waters, of which 24 are typical marine species, 38 are freshwater species and 8 are migratory species of fish. Pike, bream, white bream, roach, rudd, tench, crucian carp, and perch are the most common species of inland waters.

The use of fish resources in the state inland waters is determined by the fishing regulation and also by rules laying down restrictions for fishing gear applied annually to approximately 500 water bodies. The restrictions for fishing gear include types of fishing gear and their numbers as well as the length of nets.

Researches are carried out and statistical data about industrial fishing quantities used to assess fish stocks in inland waters. Fish stocks can be regarded

as stable. In recent years a tendency has been observed for the fishing quantities of fish of prey (pike and zander) to increase, therefore the quantities of these species are likely to diminish in case of insufficient artificial propagation of these fish resources.

Angling is a common type of recreation, sport and fishing in Latvia. There are approximately 100 thousand fishermen in Latvia; the annual haul of these fishermen is approximately 1,800 tons which for practical purposes exceeds the annual quantities caught by fishermen in inland waters (580 – 600 tons) three times.

The salmon population in the Baltic Sea is on the whole regarded as biologically safe. Salmon stock and fishing possibilities in the Baltic Sea basin are mainly maintained thanks to salmon fry and smolts bred artificially in nurseries in Latvia, Sweden and Finland and released into rivers or river mouths. In 2002, 1.28 million smolts and fry of salmons and trouts, 1.82 million fry of vimba, zander and bream, and 9.58 million fry of lampreys and pike were let out in the Latvian natural water bodies for reproduction purposes of fish resources.

In recent years the natural spawning in major salmon rivers has significantly improved and the number of fry has increased which in turn allows the stabilisation of fishing quotas. The Latvian salmon fishing quota has increased slightly, too.

The reproduction policy of natural salmons aims to preserve the natural salmon population. The percentage of natural salmons in the Baltic Sea has increased and reached 19 per cent, while the percentage in previous years was between 13 and 15 per cent. It is simultaneously necessary to optimise the output of nursery salmons in order to reduce their effect on wild salmons.

It is characteristic of nursery salmons to roam to other rivers, even to rivers distant from the sites of release. This may result in salmons of different sources of origin mixing together during spawning, which is very unwelcome because it reduces the specific adjustability of each river population to local conditions.

Environmental pollution, unfavourable spawning conditions as well as intensive fishing and other factors affect fish stocks negatively. Fishing quotas and the available quantities of fish in the Baltic Sea become smaller year after year. This is the situation with codfish, sprats and Baltic sprats in the Baltic Sea and with zander, perches, whitefish, orfes and other fish species by the coast of the Gulf of Riga.

This increases the role of aquaculture in alternative production methods of fish. This is a possibility to refresh stocks of valuable fish in demand on the market and to set up an inland water fish resource base which promotes the development of industrial fishing, amateur fishing – angling and tourism. Rigid control measures are, however, necessary because the risk of the spreading of dangerous fish diseases and pests may increase which may affect negatively the rest of the fauna and water quality, as the volume of organic pollution increases.

New aquacultures or species grown in aquariums may get into the natural environment, spread rapidly and challenge local species. There are fish species in Latvia that have been introduced knowingly or have found their way into the natural environment accidentally. The law therefore requires a licence for the introduction or breeding of new species in Latvian waters which is to be coordinated with several state institutions.

2.8.2 Main problems

1. Diminishing stocks of Baltic sprats, sprats, codfish and other fish in the Baltic Sea and the Gulf of Riga.
2. Insufficient control over compliance with regulatory enactments in the fishing industry.
3. Use of non-selective or insufficiently selective fishing gear.
4. River obstruction, destroying of spawning sites and water pollution.
5. Output of nurseries insufficient for fully meeting the demand for fish fry used for the artificial propagation of stocks.

2.8.3 Policy goals

1. To promote a sustainable development of the fishing industry.
2. To preserve the biodiversity and population structure of the Latvian waters.
3. To protect the genetic variety of fish populations.
4. To facilitate angling, angling and fishing tourism as a perspective direction for the development of the fishing industry.

2.8.4 Expected results

1. Stocks of cod, sprats and Baltic sprats are available in the Baltic Sea for regular fishing.
2. Protection and renewal of populations of endangered fish species ensured, including the natural population of the Baltic Sea salmon.
3. The productivity of fish resources in inland waters has increased as a result of increasing artificial reproduction rates.
4. Angling and fishing tourism developed and commercial activities of related small and medium enterprises providing services extended.
5. The role of the society in solving issues related to a sustainable development of the fishing industry and the environment has increased.

2.9 Environment and tourism

2.9.1 Overview of the situation

According to the forecast of the World Tourism Organisation, the tourism industry will continue to develop in future, and the present volumes will be doubled within 20 years. As tourism products diversify, Europe will become the largest destination for tourists in the world, in which case the importance of the Baltic Sea region, an economically particularly active region, including Latvia, will increase considerably.

Latvia and the Baltic Countries in general are developing quickly as an economically active region. In future the region will more often become the destination of business trips, a place for holding international conferences and meetings. At the world and European level, Latvia is a new tourism destination: it is a comparatively cheap country, of sufficient quality, comfortable, not congested and as yet unfamiliar.

Since 1991 the Latvian tourism industry, by constantly improving, gradually enters into the European and global tourism system. Tourism is developing in accordance with the guidelines and recommendations of the European Union, World Tourism Organisation, World Travel and Tourism Council, the Hague Declaration on Tourism, the UN Action Programme for the 21st Century, and the guidelines for the tourism industry of the Baltic Sea region and in line with the national policy planning documents and regulatory enactments.

The implementation of the Latvian tourism policy is based on the National programme for the development of Latvian tourism for 2001 – 2010, the Ecotourism development strategy, the target programme for the development of rural tourism and other documents.

In view of its non-congested living space, moderate climate, rich and practically unchanged nature, cultural heritage, health resort traditions, qualified specialists and good macroeconomic preconditions, Latvia has the prospects of becoming an attractive country for local and foreign tourists. Latvia has sufficient resources to develop new tourism services and to increase their competitiveness.

In 2002 exports of tourism services accounted for 1.9 per cent of the Latvian GDP. In 2002 the number of foreign visitors to Latvia was 2.2 million. The total expenses of foreign visitors in Latvia amounted to 96 million lats. The average time for which foreign tourists stayed in Latvia and the average time for which Latvian travellers stayed outside Latvia was 2.1 and 3.2 days, respectively. The tourism industry accounted for 7.3 per cent of the total employment rates while the percentage of those employed directly in tourism was 2.5 per cent.

However, failure to develop an appropriate infrastructure may result in the extinction of rare and ornamental plant species, and the construction and

improvement of objects of tourism, recreation and sport may result in the destruction of important and rare biotopes. An intensive tourism traffic, mass events and specific types of recreation present a significant source of disturbance to animal species.

Special assistance must be provided to forms of tourism which take into consideration environmental requirements, provide for the long-term preservation of natural and cultural resources and are socially and economically acceptable. Lauku ceļotājs, a rural tourism association, has developed and implemented the Green Certificate [Zaļais sertifikāts], an environmental management system for dwelling houses participating in rural tourism.

The overall goal of the tourism development policy is to reach a common understanding about the requirements of sustainable tourism in the Baltic Region and in Latvia. In order to provide for the development of sustainable tourism, healthy environment, natural and man–made landscapes must be preserved, links must be formed between natural, cultural and life environments, the competitiveness and efficiency of the tourism industry must be promoted and maintained, and good social conditions must be created for tourists and local inhabitants.

2.9.2 Main problems

1. The strategic advantages presented by the geographic location of Latvia in the vicinity of important regions of tourism are not exploited to the full.
2. Increased influence on the environment near places of tourism and near recreational sites.

2.9.3 Policy goals

1. To provide for a sustainable development of tourism, thereby creating extra opportunities for the industry and providing for a more thorough use of the most important tourism resources in Latvia.
2. To continue implementing environmental management systems in the tourism industry.
3. To promote the implementation of a unified tourism information system.
4. To facilitate the introduction of environmentally technologies in tourism companies.
5. To educate employees working in the tourism industry in issues relating to the environment and preservation of nature.
6. To promote the development of the natural, rural, healing, ecological tourism and cyclotourism and related infrastructure.
7. To improve the network of professional and certified nature guides.
8. To stimulate an optimal use of resources by reducing the environmental load.

2.9.4 Expected results

1. An increase in the numbers of foreign visitors to Latvia and in natural tourism activities, without a resulting negative effect on the environment.
2. Environmental management systems, quality certificates and ecolabels are used widely in the tourism industry.
3. Environmental resources saving and environmentally friendly technologies have been introduced in tourism companies.
4. Close co-operation between the countries of the Baltic Sea region in the field of tourism services and tourism information.
5. Educational materials available about sustainable, environmentally friendly and nature-oriented tourism in Latvia.
6. Tourists and people working in the tourism industry are informed about issues concerning the environment and the protection of nature.

III. ENVIRONMENT AND SOCIETY

3.1. Environment and health

Evaluation of environment and health is to cover aspects of human health and life quality determined by chemical, physical, biological, social and psychological factors. It is important to determine, control and implement prophylactics of such factors in order to reduce their hazardous impact on human health even in future generations. The World Health Organisation recommends paying attention to both direct impact of chemicals, radiation and biological agents, and indirect impact on human health and welfare in physical, psychological, social and aesthetic environment, covering dwelling, urban development, territorial planning and transport too. Hence comprehensive approach to solution of environmental and health problems and development of policy is required.

Environmental policy takes into account health considerations, first of all. Therefore many environmental and health problems have already been resolved by implementing requirements limiting environmental pollution. In Latvia there is awareness of health issues related to the impact of environmental factors. Surveys of the European Environmental Agency, the World Health Organisation and other institutions show the complex mutual relation between environment and health, because even a small pollution of air, water, food, consumer products and indoors may cause unfavourable impact on health.

Taking into account how topical environmental and health issues are, European Environmental and Health Strategy sets tasks for protection of susceptible groups of society, especially children. What we require is implementation of scientific references, increasing awareness, improvement of standard acts, as well as continuous assessment of the action effectiveness in solution of environmental and health problems.

3.1.1. Overview of the situation

In Latvia the quality of environment has improved due to implementation of requirements of standard acts restricting emission of contaminants of industry, transport, agriculture and communal services.

However a number of unsolved issues of living environment quality continue, which prevents considerable lowering of environment-related health risk. New problems appeared too in relation to fast distribution of hazardous chemical compounds and extension of diseases of allergic nature.

In order to settle environmental and health problems, the Environmental Health Agenda was accepted for Latvia, emphasising inter-industry co-operation and having decrease of sickness rate, death rate and disability caused by contaminated foodstuffs, chronic, infectious, and occupational diseases, as well

as accidents, reduced environmental pollution caused by transport, improvement of the drinking water quality, reduction of the impact of physical factors (ionising radiation, noise) on health, changing public attitude towards health and environment, as its basic goals.

Lack of funds and insufficient inter-industry co-operation have hindered implementation of such Agenda, therefore a permanent inter-ministry work group is to be established in order to continue such work begun in environmental and health spheres.

Most frequent diseases are related to the impact of different environmental factors; however their progress is affected by man's heredity, age, the quality of foodstuffs consumed and the welfare level. It is often difficult to identify specific environmental and health risk factors as a cause of various chronic diseases. For example, cancer of the lungs may be caused both by tobacco smoke, or asbestos, or cancerogenic chemicals. To children air pollution causes chronic pulmonary diseases, including bronchial asthma or diseases of upper respiratory tracts. Research of the global load of diseases shows that approximately 23% of diseases are related to the impact of environment.

Contamination of the living environment is a major environmental and health problem in Latvia, because mildew, high humidity, shortage of airing or heating may be stated almost in all old, worn-out houses. Moreover, congestion is observed, and the risk of respiratory diseases is high, especially for children. Chemical, physical and biological factors – dust ticks, allergens, dust, tobacco smoke, noise - affect public health condition too.

The public lacks information on building decoration materials, household chemicals, correct choice and use of household chemicals. There are many unsettled issues in urban planning and in planning of other locations. Dwelling quality may be improved by working out quality and safety standards, as well as determining indications of indoors air quality.

Approximately 56% of industrial enterprises of Latvia fail to assure healthy work environment. In 2002 the number of people suffering from occupational diseases increased by 35% against the previous year. However currently stated occupational diseases are often inherited from the previous labour protection system.

At Latvian enterprises professional health in work environment is related to the impact of chemicals, noise and vibration. The risk of unfavourable impact of chemicals exists in 20% of work places, apart from that, in 5% of cases it is very high. The impact of higher noise is observed in 44% of cases.

In Latvia there is no unified information system of professional health in order to organise and plan measures of prophylactics and social welfare of employees.

Problems concerning environment and health are dealt with in other sections of the plan too.

3.1.2. Major problems

1. Insufficient public awareness of environmental and health issues.
2. Lack of the unified environmental and health information system.
3. Research of higher risk zones is insufficient for planning of reduction of the hazardous impact of environmental pollution and other environmental factors.

Air quality

4. Air pollution caused by motor transport, especially in large cities.
5. Public complaints of unpleasant smells in individual objects.
6. Lower share of use of public transport.

Waters

7. Inappropriate quality of drinking water, especially in framed and shaft wells in rural locations.
8. Higher concentration of iron compounds in drinking water.
9. Emission of non-purified waste waters in natural water reservoirs and water courses.
10. Failure of bathing grounds to conform to hygienic and bathing water quality requirements.
11. Insufficient supervision over arrangement and assuring operation requirements of artesian bores.

Waste and soil pollution

12. Pollution of soil and underground waters in waste dumps.
13. Local soil pollution with heavy metal compounds, pesticides, pathogenic microorganisms, endoparasite eggs.
14. Weak system of medical and veterinary waste management.
15. Insufficient supervision over use of vegetable fodder and means of plant protection.
16. Insufficient provision of public and mobile toilets (in buses, trains).

Foodstuffs safety

17. Infectious diseases caused by microbiological contamination of foodstuffs.
18. Insufficient effectiveness and weak coordination of foodstuffs safety control and the system of epidemiological information circulation.
19. Shortage of information on foodstuffs safety issues in society.

Dwelling

20. Insufficient quality, level of convenience and safety of dwellings, as well as the system of dwelling quality control.
21. Low public awareness of dwelling improvement possibilities.

22. Wide use of household chemicals and hazardous products in households, as well as lack of the centralised system for collection of hazardous waste.

23. Insufficient understanding of use of household chemicals by the public.

24. Burning polymer materials and hazardous waste in households.

Natural environment

25. Lands to be used in agriculture that are not managed, thus promoting reproduction of ticks and rodents.

26. Limited public awareness of the culture of pets keeping.

27. Risk of acts of God and insufficient preventive measures for elimination of life-menacing circumstances.

Work environment

28. Menace to human life and health in using hazardous chemicals, technologies, work methods and equipment.

29. Shortages in assuring labour protection and in the social insurance system, which fail to encourage businesses to improve work environment.

30. Supervision over inappropriate training in labour protection, instructions and their fulfilment.

31. Failure to observe safety engineering requirements at work places, especially in work with hazardous chemicals.

32. Failure to pass statutory health examinations on a regular basis, insufficient quality thereof, and growing number of occupational diseases.

Chemicals and emergencies

33. Insufficiently safe use, disposal and carriage of hazardous chemicals.

34. Relatively high number of accidents related to leakage of hazardous chemicals.

Urban environment

38. Limited possibilities of public recreation in natural and pure environment.

39. Shortages in planning of towns and locations.

40. Reduction of greened areas and places of recreation in towns.

41. Insufficient cleaning of streets, as well as their watering in summertime.

3.1.3. Policy goals

1. To assure the quality of environment conforming to standard acts.
2. To improve public living environment, taking into account requirements of the environment quality in territorial planning.
3. To reduce air pollution caused by motor transport.
4. To reduce diseases caused by ticks and rodents.
5. To assure the noise level that is not hazardous to man and to restrict smells in living and work environment.
6. To achieve that waste management should not cause menace to human health.
7. To improve the quality of drinking water and bathing water.
8. To assure possibilities of public recreation in pure environment.
9. To explain methods of safe use of household chemicals to the public.
10. To observe labour protection requirements, to establish a safe work environment that is not hazardous to health.
11. To establish a permanent inter-ministry work group for settlement of environmental and health issues.

3.1.4. Expected results

1. The quality of environment conforms to standards, with immediate notification of the public in cases of exceeding the same.
2. Construction is carried out according to the territorial planning, and taking into account requirements of environmental standard acts.
3. Accidents and diseases related to incorrect use of household chemicals reduce.
4. Occupational diseases caused by different factors of work environment (chemicals, noise, vibration, microclimate) reduce.
5. The level of disturbing noises and smells decreases.
6. The system of medical and veterinary waste management conforming to standard acts is established.
7. Soil and ground pollution reduces.
7. The quality of drinking water and bathing water conforms to requirements of standard acts.
8. Recreation places in towns are arranged appropriately.
9. The system of foodstuffs quality control and appropriate product marking are assured.
10. The number of people suffering from diseases caused by ticks, rodents and other biological factors decreases.
11. Air pollution reduces, especially in large cities.
12. Use of environmentally friendly fuel increases.
13. The share of use of public transport and bicycles increases.
14. The system of dwelling quality control improves.

15. The network of public toilets extends, and a system of mobile toilets is established.

16. Collection of hazardous waste from households is assured.

17. Information on safe use of household chemicals is included in school syllabi.

18. Explanatory materials and information is available on labour protection issues.

19. Less hazardous technologies, methods and equipment are implemented at enterprises.

20. The training system in labour protection improves.

3.2. Environmental information and public participation

3.2.1. Overview of the situation

Freely available, understandable and usable information is one of the significant pre-requisites of developing a civic and democratic society, as well as development and implementation of a successful sustainable development policy. The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters ratified by the Latvian Saeima set rights and obligations of the public and state authorities in the sphere of environmental protection, and the Information Publicity Law and the Law "On Environmental Protection" regulate publicity of environmental information, providing for active distribution of information – working out and maintaining of public databases, registers, INTERNET home pages, publishing reports on environmental situation, environmental policy plans and programmes, printing explanatory materials, informing the public of its rights and possibilities of receiving information and participation in decision-making.

Information on environmental issues appears more and more frequently in mass media. An important role in formation of environmental awareness belongs not only to specialised Latvian television and radio programmes and periodicals, but also to regular publications in journals and newspapers. However, there are few analytical publications that would allow the public to better understand environmental problems, as well as mutual relations between environment, economy and society.

With developing information technologies electronic information exchange is used even more. However a very small part of the Latvian public continues to have access to the means of modern information technologies.

Although environmental information and education centres of regional environmental administrations operate in many locations in Latvia, some municipal and public organisations have not established a unified system for rendering environmental services, for everybody to be able to request and receive information, or else to learn where such information may be obtained.

The Latvian Environmental Agency receives and processes information on the quality of environment, sources of air and water pollution and loads caused thereby in environment, waste management, use of natural resources, specially protected nature territories and objects, circulation of chemical substances and products.

Circulation of information is also assured by the Latvian Hydrometeorological Agency, the State Geology Service, and the Regional Environmental Department. The united system of environmental information would have been incomplete without entering environmental information being at the disposal of other state authorities, municipalities and environmental public organisations.

It is not always that such information is prepared so as to be able to use it for the best decision-making, as well as in the form easily accessible to the public.

The State Environmental Policy and guidelines of its implementation, as well as the presentation of the most complicated terms, parameters and indications are not explained to the public in a sufficiently clear or understandable way. This makes it difficult even for journalists to publish environmental information in mass media.

The Latvian Environmental Protection Fund renders great financial assistance in preparing environmental information and informing the public. It has supported many projects in environmental education and training by means of subsidies and investments (almost three million lats were assigned from 1996 to 2002).

The Latvian Museum of Nature plays a great role in informing the public and formation of nature-friendly attitude. It arranged 937 events, implemented 243 pedagogical programmes, organised 165 exhibitions over the period from 1998 to 2002. A network of environmental guides has been established in Latvia, classes are offered in issues of environmental protection and nature conservation.

Although standard acts of Latvia assure possibility of participation in decision-making in environmental issues for society, it is not always that the public is aware of its rights and possibilities.

In many cases insufficient exchange of horizontal-level information and co-ordination between state authorities is observed too. For the time being no network of information centres of state and municipal institutions has not been established, and the number of co-ordinating information centres is insufficient to assure that information is acquired faster and more effectively.

3.2.2. Major problems

1. Circulation of environmental information is coordinated weakly, its accessibility is complicated, and it fails to conform to the needs of different social groups.
2. Low activity of the public and social groups for participation in decision-making.
3. Insufficiency of financial, material, technical and intellectual resources for development of the environmental information system.
4. Environmental information exchange between state authorities and municipalities, and its accessibility at the middle level is insufficient and ineffective.
5. The public lacks awareness of the unity of environmental, economic and social spheres, the necessity of sustainable development and its complicated nature.

6. Mass media have insufficient possibilities of acquiring true information for promotion of improvement of the current environmental situation.

7. Lack of active co-operation of state institutions, municipalities, entrepreneurs, mass media, public organisations with the public.

8. Insufficient awareness of possibilities of involvement in processes of implementing clean technologies, environmentally friendly production, energy saving, recycling of waste and packaging on the part of the public.

9. Shortage of knowledge, competence and resources of public organisations in implementation of environmental awareness programmes, planning of effective and sustainable activity, organisation of events and actions.

10. Features of campaign-type and negative information in mass media with characteristic supply of market-oriented information, which explains environmental subjects insufficiently and fails to assure the demand for fuller environmental information.

11. Lack of skills at orientation in decision-making procedures, inability to defend the public opinion effectively, as well as insufficient activity in assuring the public awareness and participation on the part of public organisations.

3.2.3. Policy goals

1. To promote implementation of the Aarhus Convention by working out and supporting different events required.

2. To establish a united information system in this country and comprehensive circulation of environmental information.

3. To assure more active public participation in environment-related decision-making.

4. To assure use and analysis of environmental information in the process of working out standard acts and making political decisions and evaluation of policy effectiveness.

5. To establish the Environmental Information and Education Centre at the Ministry of Environment to supply the public with information of interest, to consider complaints and propositions of the public and to carry out educational work.

6. To involve public environmental organisations in the public awareness process on a wider scale.

7. To establish environmental awards of the local scale and to set up privileges in commercial activities in order to encourage involvement of small and middle-scale enterprises in environmental projects.

8. To improve the process of entrepreneurs' education and information work with consumers in order to extend the output of environmentally friendly products and services.

3.2.4. Expected results

1. The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters is implemented in Latvia.

2. A united state environmental information system is established - environmental information is easily accessible, conforms to the needs of society and the public interests.

3. The level of public awareness and understanding of environmental protection, as well as public participation in environmental protection increases.

4. The public is involved in discussion of environmental problems on a wider scale, and the public opinion is taken into account in the process of decision-making.

5. The Environmental Information and Education Centre at the Ministry of Environment and regional environmental information centres operate.

3.3. Environmental education and science

3.3.1. Overview of the situation

Education of employees involved in the work for environment management and protection is to be considered as a pre-requisite of existence of the environmental protection system, and determines the importance of issues of environment and nature for society, as well as raising financial resources for fulfilment of tasks of the environmental policy. Both environmental education and decision-making and practical activities are based on scientific research and reports of environmental science. Hence establishment of the system of environmental education and research and assurance of its effective operation form the basis for fulfilment of tasks of the environmental policy and sustainable development of society.

Environmental science is an independent and generally acknowledged branch of science assuring settlement of issues of environmental protection, making management decisions, development of environmentally friendly technologies, its conclusions underlying the institutional system of environmental protection. Attraction of foreign intellectual potential has been of decisive importance in fulfilment of such tasks to date.

Decision-making requires knowledge and skills of practical work, which may only be acquired as a result of specific academic or professional education in spheres of environmental science (environmental policy, environmental chemistry, ecotoxicology, environmental engineering, formation and management of environmental infrastructure). Hence the issue of development of environmental education as a system oriented towards specific environmental needs and being able to offer the best solutions of environmental problems acquire special significance.

Environmental education is required for working out and implementation of standard acts in environmental protection, fulfilment of practical tasks, local solutions of internationally important problems of environmental protection, research of environmental quality and development of new environmental technologies, as well as for carrying out works that generate results required for assurance of environmental protection. Co-operation of the Ministry of Environment, Ministry of Education and Science, as well as higher educational establishments are material to development of the content and methods of environmental education.

According to the education classification of Latvia, environmental science is included in the subject group of education in natural science and mathematics, and environment management - in the subject group of services. Bachelor, Master and Doctor syllabi, as well as professional higher syllabi in environmental education are implemented in such subject groups of education at higher educational establishments.

Environmental education is implemented as an intermediate subject group and integrated into the content of different educational subjects. Drafts of new subject standards include issues of environmental education and sustainable development according to peculiarities of each subject, thus coordinating and assuring succession at different degrees of education.

Many schools of Latvia participate in environmental education projects. Competitions of environmental projects are held in this country. A network of environmental education coordinators has been established, methodical books are being published. Latvia is involved in the international ecoschool movement.

The Environmental Protection Club, the Latvian Association of Adult Education, the Latvian Nature Fund, The Children's Environment School, the Latvian Ornithologist Union, the Environmental Education Workers Association and almost 200 other public organisations have declared that they act in the sphere of environmental education and environmental awareness and offer a wide range of adult environmental education.

In Latvia higher environmental education is being established, and although the number of students of environmental studies is not large – less than 1% of the total number of students, it has a trend towards fast growth. In 2000/2001 academic year 500 students received education in environmental science and environment management syllabi, and in 2001/2002 academic year the number of students in such syllabi increased up to 743.

Development of scientific research, use of knowledge and environmentally friendly technologies is the main way of development of Latvian national economy, which may assure a stable welfare level. Hence it is important to work out precise principles of environmental education, content of science and goal orientation. Environmental studies are to be oriented not only towards acquiring knowledge and research skills, but also learning to identify and resolve significant problems of environmental protection.

In 2002 ministers of environment of the Baltic countries accepted 21 Agenda in the sphere of education, setting goals for improvement of environmental education at all degrees of environmental education. The fifth Ministerial Conference "Environment for Europe" in Kiev in 2003 passed a Declaration on education for sustainable development and set agenda guidelines.

In order to get involved in international movement to the full extent, syllabi are established for schools and higher educational establishments to promote sustainable living mode and to encourage all spheres of society – national economy, educational system, public organisations, state and municipal institutions to think in a new way.

It is necessary not only to train environment specialists, but to achieve that each graduate of a higher educational establishment, and especially would-be teachers should acquire knowledge in environmental protection and sustainable development.

3.3.2. Major problems

1. No comprehensive environmental education system has been established in Latvia.

2. There is a shortage of professionally educated specialists in trades required in environment management and maintaining environmental infrastructure, in order to fulfil requirements stated by standard acts.

3. Insufficient resources (intellectual, material, financial) to assure education in sustainable development.

4. Shortage of study aids on basic issues of environmental education for assurance of different levels of environmental education.

5. Shortage of knowledge, motivation and environmental education in the process of further education and continuous education.

General education

6. The studies content has insufficient place assigned to actual, objective information on environment conforming to pupils' perception, which prevents awareness of and responsibility for interaction of environment and man.

7. The content of subjects is not co-ordinated with guidelines of environmental education and fails to assure succession at different levels of education.

8. Environmental education has insufficient quantity of study and teaching aids assured.

9. Insufficiently planned and co-ordinated between state environment management and educational institutions in the sphere of environmental education.

10. Insufficient number of qualified teachers for assurance of environmental education.

Vocational training and professional secondary education

11. Difficulties in organising the process of environmental studies due to lack of qualified teachers and environmental studies syllabi, as well as problems in assuring practical work in training.

12. Limitations in preparing easily perceived and understandable material of studies due to shortage of study aids and methodical materials.

13. Insufficient link between educational establishments of professional education and employers.

14. Lack of employers' motivation for the necessity of environmental protection and support of environmental education.

Higher education

15. A small number of students acquiring knowledge of sustainable development and environmental protection during their studies at Latvian educational establishments.

16. Shortage of the state system of syllabi in higher environmental education due to failure to satisfy the demand for environment management and environmental technologies in manpower market in full.

Environmental science

17. This country has no scientific research institutions, whose activities would allow assuring settlement of strategic and practical issues of environmental protection, as well as would assure scientific basis for decision-making.

18. Manifest insufficiency of environmental research due to limited scope of science funding and insufficient state support.

19. Insufficient use of scientific conclusions and principles of sustainable development in working out of the national economy development policy.

3.3.3. Policy goals

1. To establish a comprehensive system of environmental education and to assure training of qualified environmental specialists.

2. To achieve that all graduates of higher educational establishments should master skills of environmental protection and sustainable development during their studies.

3. To establish a united and logically arranged system of environmental education at all degrees of education to satisfy the demand for environmental specialists.

4. To improve teaching methods and to develop new study aids in environmental education for all degrees of education.

5. To assure education for sustainable development.

6. In co-operation with state institutions and public organisations to consolidate environmental education as continuous education.

7. To promote establishment of the Institute of Sustainable Development.

3.3.4. Expected results

1. An appropriately arranged system of environmental education is established starting from schools and up to the system of continuous education.

2. Conditions of and basic requirements to education for sustainable development are included in standard acts.

3. Educational establishments of different levels and types are supplied with respective environmental study and teaching aids and qualified teachers.

4. Educational establishments assure training of the required number environmental specialists of appropriate qualification.

5. Sufficient number of study aids is accessible.

6. Syllabi of environmental studies are improved, and the demand for environment specialists is satisfied.

7. Students have acquired knowledge of sustainable development and environmental protection.

8. Education in sustainable development is included in standard acts (standards) concerning education.

9. The Institute of Sustainable Development of Latvia has been established.

10. Environmental research work creates pre-requisites for the best environment management, and development of new environmental technologies assures sustainable development of national economy.

3.4. Agenda 21

3.4.1. Overview of the situation

The UN Conference on Environment and Development in 1992 in Rio de Janeiro approved Agenda 21. The UN member countries, including Latvia, agreed on the goal of assuring sustainable development over the world. Agenda 21 has contributed to preparing sustainable development strategies and programmes at different levels. Co-operation of the state and the public at all implementation levels is of importance in implementation thereof.

The UN Commission for Sustainable Development co-ordinates implementation of such goals set by Agenda 21 on the world scale. The UN Conference on Environment and Development in 2002 in Johannesburg ("Rio+10") approved political orientation towards further implementation of Agenda 21, and agreed on specific priorities for implementation of the Agenda in practice. The Johannesburg Conference extended and consolidated political and practical significance of sustainable development, emphasising close connection between poverty, environment and use of natural resources, national economy and social sphere. Again governments of world countries confirmed their commitment to implement sustainable development, as well as a number of specific tasks for assuring of more effective fulfilment of the goals of sustainable development.

Participation of the European Union in implementation of Agenda 21 commenced with setting of integration of environmental policy in industry policies and development planning. In its turn, the Cardiff process determined the tasks for industries of national economy to prepare plans for the environmental policy integration and to assess progress on a regular basis. The European Union Council (Gothenburg, 2001) passed the resolution on the sustainable development strategy. The 6 Environmental Protection Agenda "Environment 2010: Our Future, Our Choice" was approved. Both political documents are connected with integration of environmental protection in national economy and supplement the earlier Lisbon Process for balancing economic and social spheres. Thus the process of the European Union sustainable development was commenced, with the European Union member countries and institutions being obliged to report on its progress on an annual basis at spring European Union Council sessions. Thus sustainable development acquired a place of political significance in development of the European Union's future.

In order to promote co-operation of the Baltic countries in sustainable development, in 1998 Agenda 21 of the Baltic Countries was adopted. It was the first regional agenda of that kind in the world, and Latvia has been active within such programme even since its initial measures. The Agenda formulated tasks for environmental policy integration into seven-industry policies (agriculture, energetics, fishing, forestry, industry, tourism and transport) and space planning.

Education was added to such industries later on. Such Agenda covers general and industry-specific goals for achievement of sustainable development and indications for determining progress of the Baltic area towards sustainable development. It consists of 30 actions in different industries, for example, ecoeffectivenes in industry, promotion of sustainable and effective management of state and private forests in forestry, application and implementation of environmental control systems in tourist industry, extended use of renewable power resources in energetics, inter-industry co-operation in space planning. International financial institutions, business associations, regional co-operation institutions, public environmental organisations and municipalities of the Baltic area are involved in 21 Agenda of the Baltic Countries too.

At the national level the state approach of Latvia is reflected in Agenda 21 in the Guidelines of Sustainable Development. In 2003 the Council for Sustainable Development was established for the purpose of promoting integration of principles of sustainable development in environmental, social and economic spheres, and co-ordination of the sustainable development process, furthering participation of the public, as well as encouraging propositions in issues related to sustainable development.

Environmental policy integrated into industries of national economy mainly due to international bilateral co-operation at the level of individual demonstration projects which have insufficient return for extensive use of sustainable development processes and measures.

Many problems and measures commence at the local level, therefore municipalities play a significant role in achievement of sustainable development. Since 1995 the number of projects related to the local Agenda 21 has increased, especially due to international, bilateral co-operation programmes and funding, as well as with growing experience of Latvian municipalities.

A major achievement of commencing Agenda 21 in municipalities is public participation in the development planning, which enables different public groups, non-governmental organisations and entrepreneurs to contribute to assurance of sustainability of local economy, social sphere and environmental protection.

3.4.2. Major problems

1. Insufficient coordination and orientation of the sustainable development process.

2. Weak administrative capacities for the state authorities and public organisations to succeed in implementation of the sustainable development policy.

3. Insufficient interest of municipalities and role of planning regions for planning and commencement of the local Agenda 21 processes.

4. Insufficient understanding of the significance of Agenda 21 and sustainable development on the part of the public.

3.4.3. Policy goals

1. To promote integration of environmental policy and sustainable development in planning and implementation of Latvian development policy.

2. To improve the institutional system of sustainable development.

3. To promote participation of Latvia in international sustainable development processes and their co-ordination at the state level.

4. To promote participation of local ministries in improvement and implementation of Agenda 21 of the Baltic Countries, making use of the benefits of regional co-operation.

5. To encourage involvement of municipalities in working out and implementation of local Agendas 21, as well as to support establishment of co-operation networks and exchange of experience in the Baltic area.

6. To promote applied scientific research in development and effective application of the best methods of implementation of sustainable development.

7. To involve the public in assessment of the key problems of environmental protection and social and economic development, and formulation of new initiatives.

3.4.4. Expected results

1. Higher responsibility of industries of national economy for integration of the environmental policy.

2. Successful progress of the process of co-operation and information exchange between state authorities and municipal institutions, public organisations, professional associations, scientific institutions and the public concerning implementation of sustainable development.

3. Activity of Latvia in implementation of sustainable development has won international recognition and high appreciation in the UN and the European Union sustainable development process and fulfilment of Agenda 21 of the Baltic Countries.

4. Extensive public participation in implementation of guidelines of Latvia’s sustainable development.

5. Support in the municipal development planning process and implementation of new sustainable development projects on the part of the local public.

IV. MEASURES, RESPONSIBLE INSTITUTIONS, TERMS OF GOALS ACHIEVEMENT AND FUNDING

4.1. Reduction of air pollution

	Measures	Responsible institutions	Term	Funding
1.	To improve the system of air protection and quality assessment according to requirements of the European Union standard acts	LHMA	2008.	Within the European Union PHARE project – 423 000 EUR
2.	To assure emissions inventory according to the EU CORINAIR methodology, improving the register of pollutants and assuring information for evaluation of air quality improvement measures	LVA, LHMA	2008.	Budget funds, using Denmark's technical assistance
3.	To set air quality standards for heavy metal compounds and polycyclic hydrocarbons within terms stated in the European Union standard acts	VIDM	2008.	Budget funds*
4.	To work out standards and regulation measures for smell assessment and prevention	VIDM	2005.	Budget funds
5.	To assure smell control and limitation	RVP, IVNVB, VVI	2006.	Budget funds
6.	To approve the programme for general emission reduction in this country	VIDM, LVA	2004.	Budget funds**
7.	To implement the programme for general emission reduction in this country	VIDM, LVA, EM, SM	2008.	Budget funds, additional funds – to be specified
8.	To work out the agenda for air pollution reduction in Riga	VIDM, Riga City Council	2004.	Funds of Riga City Council Environmental Protection Fund – 27 000 Ls
9.	To implement agendas for air pollution reduction in largest towns of this country, approved by municipalities	P, RVP	2008	Budget funds, additional funds – to be specified
10.	To simulate air pollution in planning construction of new projects	LHMA,P	2008.	Budget funds
11.	To set restrictions in refusing the centralised heating system, in case of exceeded air quality standards	LHMA, P	2004.	Budget funds
12.	To assure emission standards of SO_2, NO_x, CO and dispersed solid particles conforming to the best available technical methods for current incineration equipment with input heat capacity over 50 MW	RVP, IVNVB, VVI, LHMA	2008.	Implementation measures to be funded by the operator (private funds), and supervision measures to be paid for from the budget funds
13.	To assure emission of volatile organic compounds conforming to standards in all filling stations and oil depots	RVP, VVI, LHMA	2008.	Budget funds
14.	To include and implement requirements of air emission from stationary pollution sources in A and B category permissions, and to implement the best available technical methods for A category equipment	RVP, VVI, IVNVB	2007.	Implementation measures to be funded by the operator, and supervision measures to be paid for from the budget funds

15.	To set restrictions on use of fuel oil (heavy fuel oil) with sulphur content exceeding 1% for incineration equipment. Which are not equipped with sulphur purification plants	RVP, VVI, LVA, IVNVB, LHMA	2007.	Implementation measures to be funded by the operator, and supervision measures to be paid for from the budget funds
16.	To assure an effective petrol and diesel fuel quality control system	EM, FM	2004.	Budget funds
17.	To supply society with information and to assure public participation in planning and implementation of air protection measures	VIDM, LHMA, P	2008.	Budget funds
18.	To improve economic mechanisms of promoting reduction of pollutants emission	VIDM, FM	2006.	Budget funds
19.	To assure exclusion of ozone layer depleting substances from circulation	VIDM, RVP	2008.	Implementation measures to be funded by the operator, and supervision measures to be paid for from the budget funds, according to schedule stated in the Montreal Protocol and the EU regulations
20.	To assure observance of limits of volatile organic substances emission in activities with solvents in industrial equipment – operating equipment from 31 October 2005, provided the enterprise operator chooses to apply the target emission standard, and from 31 January 2007, provided the enterprise chooses to apply emission standards stated by standard acts, and for new equipment – together with starting up operation	VIDM, VVI, RVP	2007.	Implementation measures to be funded by the operator, and supervision measures to be paid for from the budget funds
21.	To improve international co-operation in order to achieve reduction of transboundary air pollution	VIDM	2008.	Budget funds
22.	To assure air quality conforming to standards and long-term objectives in immediate proximity of enterprises	VIDM	2008.	Budget funds

* This and many other of the following measures are to be implemented within current funding from the budget funds, however additional funds will be required for effective activities of responsible environmental institutions, their amount to be considered together with the budget priorities of the current year.

** Additional state or municipal funds will be required for implementation of the programmes. It will be possible to determine their amount only after such programmes are worked out.

In case of insufficient funding, measures will be implemented under the priority system stated in respective planning documents.

4.2. Reduction of the hazardous impact of climate changes

	Measures	Responsible institutions	Term	Funding
1.	To integrate goals and measures for reduction of greenhouse gases emission into energetics, transport, industry, dwelling, agriculture, forest, waste management planning documents	VIDM, SM, EM, ZM	2008.	Budget funds
2.	To prepare the concept of participation of Latvia in the international emission trade	VIDM	2005.	Budget funds
3.	To participate in jointly implemented projects, international emission trade, pure development mechanism, and to establish the institutional system to assure its implementation	VIDM	2008.	Budget funds: in 2004 – according to the state budget programme, using funds of the Latvian Protection Fund; in 2005 – 103 000 Ls; in 2006 and in subsequent years – 120 000 Ls +++
4.	To prepare standard acts on greenhouse gas emission quotas trade	VIDM	2007.	
5.	To establish and maintain the register of greenhouse gases	LVA	2005.	
6.	To assign emission quotas to Latvian enterprises and to assure their participation in the system of emission quotas trade	VIDM, LVA	2008.	
7.	To increase administrative capacities of state authorities for implementation of the climate change policy +	VIDM, LVA, RVP	2008.	
8.	To reduce the volume of methane exhaust from landfills, dumps and sewage purification plants	VIDM, P	2008.	Within investment programmes
9.	To increase scientific research, and the public awareness and education ++	VIDM	2008.	Within investment programmes 41000 Ls annually

+ In circumstances of insufficient funding, may be implemented only in part.

++ In circumstances of insufficient funding, implementation may be postponed.

+++ Within current funding it will be impossible to fulfil the European Union and international liabilities, hence additional funding is required.

4.3. Water quality assurance

	Measures	Responsible institutions	Term	Funding
1.	To promote sustainable and rational use of water, paying special attention to preservation of underground water resources and eutrofication endangered lakes and water reservoirs	VIDM	2008.	Budget funds
2.	To protect water ecosystems and land ecosystems and wetlands directly depending on water	VIDM	2008.	Budget funds
3.	To establish institutions for management of river basin areas	VIDM	2004.	Budget funds
4.	To assess environment and economic situation, to identify main pollution sources, to develop plans and agendas of river basin management in the basin territories	VIDM, VĢD	2008.	Budget funds
5.	To implement plans and agendas of river basin management, assuring achievement of environment quality targets	VIDM,VĢD, RVP, P	2008.	Budget funds according to what is stated in plans and programmes, additional funds
6.	To implement the agenda for prevention of nitrate pollution in specially sensitive territories	VIDM, ZM	2008.	Budget funds according to what is stated in plans and programmes, additional funds
7.	To work out agenda for reduction of pollution in priority fish waters and bathing grounds, as well as to work out agendas for reduction of pollution caused by especially hazardous and hazardous substances, prevention of pollution caused by communal sewerage, lowering risk of floods and accidents	VIDM	2004.	Budget funds according to what is stated in plans and programmes
8.	To implement the integrated permission system and to harmonise conditions of such permissions with requirements set for water quality	VIDM, RVP	2007.	Budget funds
9.	To improve the information exchange mechanism among institutions issuing permissions and supervising their fulfilment	VIDM, RVP, LVA	2005.	Budget funds
10.	To work put programmes for monitoring of land and underground waters, bathing grounds, emission of priority and hazardous substances, as well as to structure monitoring programmes according to river basin areas	VIDM, LVA, VĢD	2007.	Within the National Monitoring Programme
11.	To work out a monitoring programmes for territories that are especially susceptible to nitrate pollution	VIDM, LVA	2004.	Within the National Monitoring Programme
12.	To assure operation of monitoring programmes	LVA	2006.	Within the National Monitoring Programme, additional funds
13.	To extend the current network of agricultural leakage monitoring up to 5 - 6 stations	VIDM, ZM	2005.	Within the National Monitoring Programme, additional funds
14.	To improve the monitoring system and databases for fore the needs of river basin management	LVA	2008.	According to what is stated in Tables 4.1 – 4.3, additional funds
15.	To optimise the system of environment quality testing laboratories in Latvia and to consolidate regional laboratories	VIDM, LVA	2005.	Budget funds

16.	To implement projects for construction of new drinking water purification plants and water pipelines and for reconstruction of old ones +	VIDM, FM, EM, P	2008.	According to what is stated in Tables 4.1 – 4.3, additional funds
17.	To implement investment projects for construction of new waste purification plants and reconstruction of old ones, as well as renovation and extension of the sewerage network +	VIDM, FM, EM, P	2008.	According to what is stated in Tables 4.1 – 4.3, additional funds
18.	To determine sludge quality and its quantity registration, as well as to increase the volume of sludge use	VIDM, RVP	2008.	Budget funds, additional funds
19.	To increase the number of registered bathing grounds and to assure water quality control there	VM, SVA, P	2008.	Additional funds – including 174 000 Ls per year for bathing waters monitoring
20.	Together with responsible institutions of Lithuania to work out and to implement international management plans for the Venta and Lielupe basin and with responsible institutions of Estonia – for the Gauja basin	VIDM, VĢD, RVP, P	2008.	Budget funds, additional funds
21.	To conclude a trilateral agreement on the Daugava basin management with Russia and Byelorussia	VIDM	2004.	Not required
22.	To work out and to implement the programme for reduction of pollution caused by communal waste	VIDM, RVP	2008.	Within the EU investment programmes, additional funds
23.	To assure that operators should implement pollution emission control and process information on waste pollution by environment-hazardous and hazardous substances independently	RVP, LVA	2008.	Private funds
24.	To assure implementation of the town waste directive	VIDM	2008.	Budget funds ***
25.	To assure co-ordinated development of the National Plan for elimination of consequences of chemicals leakage into the sea	JVP	2005.	Budget funds, funds assigned by the Flanders Government – 322 000 EUR
26.	To implement the National Plan for elimination of consequences of chemicals leakage into the sea and to purchase the necessary equipment	JVP	2007.	Additional funds within the State Investment Programme – 1 million USD
27.	To purchase an airplane for pollution control from the air	JVP	2007.	Additional funds within the State Investment Programme – 0.4 million USD
28.	To purchase a vessel for control, elimination of accident consequences, environmental monitoring and research in the Baltic Sea	JVP	2007.	Additional funds within the State Investment Programme – 3 million Ls

+ additional funding is connected with mastering the European Union funding.

*** To improve the air protection and assessment according to the European Union standard acts. Implementation of the town waste directive – the Act on conditions of the Republic of Latvia accession and adjustment provides for implementation of the directive in locations of Latvia within the following terms: in towns with population equivalent over 100 000 until 31 December 2008 (the category covers 3 towns); in towns with population equivalent over 10 000 until 31 December 2011 (the category covers 20 towns and locations); towns with population equivalent over 2000 where the directive requirements will be implemented until 31 December 2015 (the category covers 65 towns and locations).

4.4. Sustainable use of bowels of the earth

	Measures	Responsible institutions	Term	Funding
1.	To assure rational, environmentally friendly and sustainable use of natural resources	VIDM, VĢD	2008.	Budget funds
2.	To complete making the geological map on the scale 1:200 000	VĢD	2004.	Budget funds
3.	To start up making hydrogeological maps on the scale 1:200 000	VĢD	2008.	Additional funds - 20 000 Ls per year
4.	To make geoecological mapping on the scale 1:50 000	VĢD	2008.	Additional funds - 40 000 Ls per year
5.	To activate preparing information on geological and geomorphologic natural formations	VĢD, LU, LLU	2008.	Additional funds - 3 000 Ls per year
6.	To prepare geochemical information for the territory development planning	VĢD	2007.	Additional funds - 8 000 Ls per year
7.	To maintain a united geological information system using modern geological information system technologies	VĢD	2006.	Additional funds - 15 000 Ls per year
8.	To continue advanced implementation of computer technologies for geological information analysis and processing	VĢD	2005.	Additional funds - 20 000 Ls per year
9.	To improve geological terminology	VĢD, LU, LZA	2005.	Additional funds - 2 000 Ls per year
10.	To prepare a series of publications on mineral deposits of Latvia	VĢD, RTU, LLU, LU	2008.	Additional funds - 5 000 Ls per year
11.	To work out draft regulations of mineral deposits extraction	VIDM, VĢD	2008.	Budget funds
12.	To work out and to improve methodology of mineral deposits extraction, registration, control and recovery	VIDM, VĢD	2008.	Budget funds
13.	To improve the system of standard acts in order to assure rational and sustainable management of bowels of the earth	VIDM, VĢD	2008.	Budget funds
14.	To educate society in the sphere of geology and geoecology	VIDM, VĢD	2008.	Budget funds
15.	To establish the state monitoring system of underground waters, to acquire information, to process and use the same for development of the system – for basic monitoring of underground waters, as well as in agriculturally usable lands, in agglomeration territories, in especially polluted territories	LVA, VĢD	2007.	Additional funds ****
16.	To issue licences for use of bowels of the earth according to procedures stated by standard acts	VĢD, RVP, P	2008.	Additional funds - 27 000 Ls per year
17.	To work out the balance sheets of underground water mineral resources cadastre and reserves	VĢD, RVP, VVI	2008.	Budget funds
18.	To make an inventory of unowned oil and mineral water prospecting drills	VĢD, RVP	2007.	Additional funds - 28 000 Ls per year
19.	To make an inventory of reserves of mineral deposits	VĢD, RVP, VVI	2008.	
20.	To initiate and supervise elimination of unowned drills	VĢD, RVP	2008.	
21.	To assure geological supervision over prospecting works	VĢD, EM	2008.	Budget funds

22.	To assure monitoring of seismological and hazardous geological processes	VĢD, LVA, LU	2008.	Additional funds – 14 000 Ls per year
23.	To extend international co-operation in the sphere of geology and in management of transboundary underground water objects	VĢD	2008.	Budget funds
24.	To prepare the united Baltic geological map and map legend	VĢD	2006.	Budget funds
25.	To implement transboundary projects under management of united underground water basins	VIDM, VĢD	2008.	Budget funds
26.	To participate in establishing a united European geological information system	VĢD	2008.	Budget funds
27.	To promote training of geological and geoecological specialists and their involvement in work of state institutions and municipalities	VIDM, VĢD,P	2008.	Budget funds

**** To establish a network of underground water monitoring, to acquire information, to process and use the following for working out the system:

a) basic monitoring of underground water - 400 000 Ls,
b) underground water monitoring in agriculturally usable lands - 20000 Ls,
c) underground water monitoring in agglomeration territories - 51 000 Ls,
d) underground water monitoring in especially contaminated sites - 45 000 Ls.

Priority succession will be stated for measures requiring additional funds.

4.5. Waste management

	Measures	Responsible institutions	Term	Funding
1.	To limit waste generation, to reduce the quantity of its disposal, promoting its processing or recycling	VIDM, P	2008.	Budget funds
2.	To assure public services of the regional system of municipal waste management	VIDM, P	2008.	Budget funds
3.	To work out standard acts on worn-out vehicles and their management	VIDM	2004.	Budget funds
4.	To assure implementation of standard acts on waste management, improving operation of the environmental inspection and monitoring	VIDM	2008.	Budget funds
5.	To assure implementation of the manufacturer's responsibility pattern in the sphere of worn-out vehicles and electronic waste	VIDM	2004.	Private funds
6.	To establish a system of taxes and subsidies for funding of worn-out vehicles management	VIDM	2004.	From the natural resources tax receipts - 1 424 700 Ls
7.	To establish a system of taxes and subsidies for funding of electronic waste management	VIDM	2005.	From the natural resources tax receipts - to be specified
8.	To promote co-operation with public organisations in the sphere of waste management	VIDM, SO	2008.	Not required
9.	To promote implementation of the environment management systems at waste management enterprises	VIDM	2008.	Not required
10.	To implement a differentiated natural resources tax on products, whose consumption generates a small quantity of waste	VIDM	2008.	Not required
11.	To raise the natural resources tax on individual dispensable products and materials	VIDM	2006.	Not required
12.	To implement a deposit system for reusable packaging, as well as used batteries	VIDM	2008.	Budget funds
13.	To promote arrangement of a special storage site for collection of hazardous municipal waste	VIDM, P	2008.	According to funding and distribution by years stated in Tables 4.1 – 4.3
14.	To reconstruct or close waste dumps that fail to conform to requirements of standard acts	VIDM, P	2008.	
15.	To recover land in closed dumps	VIDM, P	2008.	
16.	To establish regional stations for hazardous waste acceptance, packaging, marking, interim storage	VIDM	2006.	
17.	To establish equipment for physical and chemical treatment and stabilisation of hazardous waste that cannot be incinerated	VIDM	2006.	According to funding and distribution by years stated in Tables 4.1 – 4.3

18.	To establish a landfill for hazardous waste disposal	VIDM	2006.	According to funding and distribution by years stated in Tables 4.1 – 4.3
19.	To establish equipment for inert waste processing	VIDM, P	2005.	According to funding and distribution by years stated in Tables 4.1 – 4.3
20.	To establish regional household landfills according to requirements of Latvian standard acts	VIDM, P	2008.	
21.	To establish equipment for acceptance, treatment and processing of waste to be annihilated biologically, including dehydrated sewerage sludge, in territories of municipal and household landfills	VIDM, P	2008.	
22.	To establish a qualification system and syllabi in waste management	VIDM	2008.	Budget funds
23.	To improve methods of collecting, processing and analysis of waste management information	VIDM	2005.	Budget funds
24.	To make inventory of sources and quantity of sources and quantity of polychlorinated biphenyl and polychlorinated terphenyl waste	VIDM	2004.	Budget funds
25.	To establish a system for collection and processing of waste from electric and electronic equipment	VIDM	2005.	Budget funds
26.	To implement a differentiated rate for municipal waste management according to whether waste is sorted	VIDM, SPR, P	2008.	Not required
27.	To study the structure of packaging and used packaging	VIDM	2004.	Budget funds
28.	To inform and educate the public and entrepreneurs in issues of waste management	VIDM, P	2008.	Budget funds
29.	To promote waste treatment as close to the place of its origination as possible	VIDM, P	2008.	Budget funds
30.	To promote implementation of the sorted waste collection systems in municipalities	VIDM, P	2008.	Budget funds

Measures requiring additional funds will be prioritised according to the detailed State Plan of Waste Management until the end of 2004.

4.6. Research and remediation of contaminated sites

	Measures	Responsible institutions	Term	Funding
1.	To prevent harmful impact of previous business activities on human health, property and environment	VIDM	2008.	Budget funds
2.	To achieve improvement of quality of soil, ground, underground and surface waters in polluted territories	VIDM	2008.	Budget funds
3.	To identify and to assess contaminated and potentially contaminated sites, to establish databases of such locations	RVP, AIM, LVA, P	2005.	Additional funds – 600 000 Ls +
4.	To maintain databases of contaminated sites, updating information with data of research and remediation results	LVA, RVP, P	2008	Budget funds
5.	To set necessary restrictions in use of contaminated sites	RVP, AIM, P	2008	Budget funds
6.	To make detailed additional research of contaminated sites	VIDM, RVP, AIM	2008.	Additional funds – 1.5 million Ls, including private funding
7.	To prepare projects for remediation of contaminated sites and to carry out remediation works	VIDM, RVP, AIM	2008.	Additional funds – 18 million lats, using the EU structural funds and including private funding
8.	To increase municipal financial, technical and intellectual resources in order to be able to implement contaminated sites remediation to a fuller extent	VIDM, RAPLM, RVP, P	2008.	Additional funds

In circumstances of insufficient funding this part of the National Environmental Policy Plan is to be considered of less priority. Most environment- hazardous objects only will have to be financed, for example, Incukalns sulphuric acid tar pond. However identification of contaminated sites will have to be completed in order to be able to include remediation measures in the European regional development funding programmes from 2004.

+ Municipalities have preferences in receiving additional funding.

4.7. Preserving biological diversity

	Measures	Responsible institutions	Term	Funding
1.	To conclude an international treaty with Lithuania, Estonia and Russia on elimination of consequences of transboundary pollution	VIDM, JVP, ĀM	2005.	Budget funds
2.	To work out recommendations for improvement of selective fish tools and methods	VIDM, JVP, ZM	2005.	Budget funds
3.	To work out plans for protection of endangered fish species	ZM, JVP	2005.	Additional funds – 128 900 Ls
4.	To establish a system of vessel ballast waters control	VIDM, JVP, SM	2007.	Additional funds – 72 000 Ls
5.	To determine marine specially protected nature territories	VIDM, JVP, DAP	2007	Budget funds
6.	To make maps of protected coastal habitats and to determine microbans	VIDM, RAPLM, LU	2005.	Within the EC LIFE Project – 760 740 Ls
7.	To work out and to implement the Integrated Coastal Management Plan	RAPLM	2005.	Budget funds
8.	To work out plans of ecological network territories	RAPLM	2005.	Special subsidy – 3 154 000 Ls
9.	To increase minimum continuous assured flow of hydrotechnical edifices	VIDM, ZM	2004.	Budget funds
10.	To assess the impact of port dredging works on fish resources	LZPI	2008.	Budget funds
11.	To work out and to implement a compensation mechanism for land owners for limitations of business activities in protected territories	VIDM, RVP	2008.	Additional funds – 22 million Ls
12.	To determine microbans	VMD, VIDM, VZP	2008.	Budget funds
13.	To work out and to implement species protection plans	VIDM, VMD, DAP, ĪADT	2007.	Additional funds – 75 000 Ls
14.	To renaturalise drained bogs in specially protected nature territories	VIDM, ĪADT, DAP	2008.	Additional funds – 2 490 000 Ls
15.	To establish two bog monitoring stations	VIDM, ĶNP, Teici Strict Nature Reserve	2008.	Additional funds – 248 000 Ls
16.	Organisation of seminars on alternative occupations in the rural and environmentally friendly agricultural methods	ZM	2006.	Budget funds, the EU co-funding
17.	To promote implementation of measures of the Rural Development Plan "Agrovide" [Agroenvironment] and to train RVP inspectors in supervision of such measures	ZM, VIDM	2006.	Additional funds – 170 000 Ls
18.	To implement activities of the Rural Development Plan "Agrovide" measures and „Less Favourable Areas and Areas with Restrictions for Environmental Protection" for preservation of biological diversity	ZM, VIDM	2006.	Budget funds, the EU co-funding
19.	To assure a favourable protection status for species and habitats requiring special protection	VIDM, ZM, LU	2008.	Budget funds
20.	To work out the strategy of fighting invasive species	VIDM, ZM	2008	Additional funds – 10 000 Ls

21.	To consolidate administrative capacities of institutions involved in implementation of the Convention „On International Trade in Endangered Species of Wild Fauna and Flora”	DAP, FM, IeM	2008	Budget funds
22.	To establish NATURA 2000 network	VIDM, DAP, LVA	2008.	Additional funds – 73 000 Ls
23.	To consolidate administrative capacities of regional environmental departments	VIDM, RVP	2008.	Additional funds – 1 800 000 Ls
24.	To work out plans for NATURA 2000 sites nature conservation, individual conditions of protection and use	VIDM, DAP	2008.	Budget funds
25.	To manage NATURA 2000 sites	VIDM, DAP, ZM	2008.	Additional funds – 805 000 Ls
26.	To promote establishment of ecotourism infrastructure in specially protected nature territories according to nature conservation plans	VIDM, EM, DAP, ZM	2007.	Additional funds – 1 176 000 Ls (within mastering ERAF funds for measures stated in the Development Plan)
27.	To implement nature monitoring programmes and respective plans of measures	LVA	2008.	Budget funds
28.	To involve the public in and inform the same about nature conservation measures in the territory of this country	VIDM, DAP, LVA,LDM, ĪADT	2008.	Additional funds – 280 000 Ls
29.	To work out a long-term state programme for scientific research of priority problems of biological diversity	VIDM, IZM	2006	Additional funds – 10 000 Ls
30.	To establish and to maintain stock of local species gene reserves (Latvian Blue cow breed, Latvian Brown cow breed, Latvian Darkhead sheep breed, Latvian White pig breed, Latvian horse breed)	ZM	2005	Additional funds – 100 000 Ls
31.	To establish a system for preservation of cultivated plants and plants of their wild related species resources: • to maintain and to replenish the collection of cultivated plants of Latvian origin propagated by seeds and with vegetative propagation, and the collection of plants of their wild related species, • to establish, to maintain and to replenish the database of genetic resources of cultivated plants and plants of their wild related species of Latvian origin, • to establish a molecular genetic passportisation centre of genetic resources of Latvian plant resources and to carry out passportisation of all plants genetic resources, • to study and popularise possible use of genetic resources of plants of Latvian origin in national economy.	ZM	2008	Additional funds – 165 000 Ls

In case of insufficient funding, measures will be implemented in priority succession stated in respective planning documents.

4.8. Protection against ionising radiation and nuclear safety

	Measures	Responsible institutions	Term	Funding
1.	To liquidate and to dismantle Salaspils nuclear reactor, including withdrawal of nuclear fuel out of Latvia +	VIDM, "RAPA" Ltd.	2008.	Budget funds – 188 210 Ls, additional funds – 12 807 000 Ls
2.	To construct a long-term depositary of radioactive waste and additional reservoirs for radioactive waste +	BOV "RAPA" Ltd.	2008.	Additional funds - 1 750 000 Ls, 60 000 Ls assigned from PHARE
3.	To improve long-term safety in radioactive waste depositary "Radons"	BOV "RAPA" Ltd.	2006.	Additional funds - 226 000 Ls
4.	To improve and replace radiological equipment used in medicine and to train personnel	VM	2006.	Additional funds - 8 million Ls, 1 650 000 million EUR assigned from PHARE
5.	To improve radiometric control of cargo at the state border	IEM, VR	2005.	Additional funds - application submitted to PHARE
6.	To improve readiness and actions in situations of nuclear accidents and in case of ionising radiation leakage	IEM, VUGD	2006.	Additional funds - project applications PHARE 760 000 EUR (approved), 295000 EUR (submitted)
7.	To establish a certification system of experts in radiation and nuclear safety, as well as medical experts	VIDM	2004.	Budget funds
8.	To identify and to reduce the number of potentially hazardous objects	RDC	2006.	Not required

+ In case of insufficient funding, measures will be implemented over a longer period than planned in the schedule under the National Environmental Policy Plan.

4.9. Noise in environment

	Measures	Responsible institutions	Term	Funding
1.	To work out standard acts on noise reduction in environment	VIDM	2004.	Budget funds
2.	To assure adaptation of standards required for noise measurements and calculations in environment	VIDM, EM	2004.	Budget funds
3.	To work noise charts according to requirements of standard acts	SM, P	2007.	Additional funds - to be specified
4.	To assure accessibility of information on noise in environment and its impact on human health	VIDM	2008.	Budget funds
5.	To work out agenda for noise reduction	SM, P	2008.	Additional funds - to be specified
6.	To implement a system of conformity assessment of noise generating equipment that is used outdoors	VIDM, EM	2004.	Budget funds

Currently information on costs of measures is insufficient. Initial estimates show that noise mapping in Riga could cost 100000 – 300000 Ls. Considerable funds will be required for implementation of the agenda. However, it is impossible to postpone the measures, as they are related to with observance of the European Union regulations.

4.10. Circulation of chemical substances and genetically modified organisms and quality of products

	Measures	Responsible institutions	Term	Funding
1.	To participate in work of the European Union organisations in the spheres of chemical substances and chemical products management and supervision	LVA, VVI, VSI	2008.	Additional funds - 40 000 Ls per year
2.	To harmonise standard acts and administrative procedures with the European Union regulations in the sphere of supervision over genetically modified organisms	VIDM, VM, ZM	2004.	Budget funds
3.	To work out strategies for risk management of chemical substances, chemical products and biocides in emergency situations, at accidents and carriage of hazardous chemical cargoes	VIDM	2005.	Budget funds
4.	To consolidate capacities of state institutions in the sphere of management of and supervision over chemical substances, chemical products, biocides and genetically modified organisms	VIDM, ZM, SVA, LPC, VSI, VVI	2005.	Additional funds - 168 700 Ls per year
5.	To develop co-operation between state institutions managing and supervising chemical substances, chemical products, biocides, as well as co-operation and information exchange between respective state institutions and professional associations of manufacturers (importers) of chemicals	VIDM, ZM, VM, VVI, VSI	2008.	Budget funds
6.	To establish a testing and supervision system in the sphere of genetically modified organisms and their products	VIDM, LPC, ZM, VM,	2008.	Budget funds
7.	To work out and to implement the supervision programme for control of pesticide residue in products of vegetable origin	ZM	2008.	Budget funds - 610 000 Ls
8.	To train inspectors in the sphere of classification, marking and risk assessment of chemical substances, chemicals and bicodes	VVI, RVP, VSI	2008.	Budget funds
9.	To raise entrepreneurs' responsibility for appropriate classification, marking, making safety data sheets, risk assessment and distribution of information of importance for risk assessment regarding chemical substances, products and biocides	VVI, VSI, VDI	2008.	Private funds, budget funds
10.	To carry out hygienic assessment of specific biocides (disinfection, disinsection, deratisation)	SVA	2005.	Budget funds
11.	To establish the food risk identification system conforming to requirements of the European Union	LPC	2005.	Budget funds
12.	To establish a database of stable organic pollutants and a monitoring system in order to supervise circulation of such stable organic pollutants	VIDM, LVA	2004.	Budget funds, co-funding under the UN Development Programme and the Global Environment Fund

13.	To establish a united information system and INTERNET information portal on issues of safety of chemical substances, chemicals, biocides and genetically modified organisms	VIDM, LVA, SVA, ZM, LPC, TC SIC	2008.	Budget funds – for the system maintenance, funds of the State Investment Programme for establishment of the register and the portal
14.	To participate in working out the European Union policies and standard acts in the sphere of integrated products policy	VIDM, EM	2008.	Budget funds
15.	To integrate environmental conditions in the process of state and municipal purchases	VIDM, FM, EM	2006.	Budget funds
16.	To revise the taxes and subsidies system in order to ban subsidies for products that are not environmentally friendly and to encourage use of environmentally friendly products	VIDM, FM, EM	2007.	Budget funds
17.	To encourage voluntary unions among state institutions and entrepreneurs assuring manufacturing of environmentally friendly products and reduction of negative impact on environment throughout the product circulation cycle	VIDM, EM	2008.	Budget funds

All measures ensue from current or coming standard acts of the European Union; hence the same cannot be postponed due to insufficient funding. Even in case it is impossible to raise additional funds for consolidation of the institutional base, such measures will have to be implemented anyway. However, this will cause difficulties in the processes administration, which may result in making documents of sub-standard quality and supplying inadequate information on fulfilment of international liabilities of Latvia.

4.11. Environment and industry

	Measures	Responsible institutions	Term	Funding
1.	To supervise implementation of the system of integrated permissions and the best available engineering methods for A category equipment	VIDM, RVP, IVNVB, VVI	2008.	Private funds – implementation, budget funds - supervision
2.	To assure information on the European Union best available engineering methods and clean technologies	VIDM, EM, IVNVB	2008.	Budget funds
3.	To promote implementation of the environmental management and audit system and to establish the information register of enterprises registered in the environmental management and audit systems	VIDM, EM, IVNVB	2004.	Budget funds
4.	To improve the tax system and to facilitate attraction of investments in environment	VIDM, FM, EM	2005.	Not required
5.	To improve the education system for environmental protection management and technical specialists	IZM	2008.	Budget funds
6.	To establish the register of pollutants and to assure its accessibility to the public	VIDM, LVA	2008.	Budget funds
7.	To implement the European Union ecomarking system and to promote assignment of ecomarking to products manufactured in Latvia	LVA	2008.	Private funds
8.	To promote implementation of the principle “the polluter pays” and to improve legal regulation of responsibility, especially financial responsibility for damage inflicted on environment, as well as its implementation mechanism	VIDM, RVP	2008.	Budget funds, private funds; costs to be specified
9.	To implement the responsibility principle “regardless of the fault” concerning specific activities of higher hazardousness and use of hazardous substances	VIDM, TM	2008.	Budget funds
10.	To promote requesting financial security from entities carrying out environment-hazardous activities in order to prevent or eliminate damage inflicted upon environment	VIDM, FM, EM	2008.	Budget funds, private funds,
11.	To promote involvement of society and the public in the process of timely determining and prevention of pollution	VIDM, RVP	2008.	Budget funds
12.	To raise requirements to responsible institutions not to allow damage to environment and to prevent damage inflicted on environment or to reduce pollution in due time	VIDM, RVP, JVP	2008.	Budget funds – costs to be specified
13.	To wider use scientific potential and information technologies in industrial manufacturing in order to save power and non-renewable raw materials	VIDM	2008.	Private funds
14.	To wider implement standards and pure technologies in manufacturing	VIDM	2008.	Private funds
15.	To promote the principle of social responsibility providing for voluntary integration of social and environmental requirements in activities of enterprises	VIDM	2008.	Not required

Most measures are to be implemented within the current budget funding, however additional funds are required for effective operation of responsible institutions, their amount to be considered together with the budget priorities of the current year.

4.12. Environment and power industry

	Measures	Responsible institutions	Term	Funding
1.	To assure issuing A category permissions for incineration plants with input heating capacity over 50 MW	RVP, IVNVB	2005.	Budget funds
2.	To promote transition of incineration plants using black oil to another fuel +	VIDM, EM, FM, P	2006.	Budget funds, private funds un the EU co-funding - 41 million Ls
3.	To assure use of the best engineering methods in incineration plants having received A category permission ++	RVP, IVNVB, VVI	2007.	Private funds (investments)
4.	To assure issuing B category permissions to incineration plants	RVP, IVNVB	2006.	Budget funds
5.	To assure continuous measurements of pollutants concentration and emission parameters in incineration plants with rated input heating capacity of 100 MW and more	RVP, LVA	2004.	Budget funds
6.	To issue permissions for water use to hydroelectric power stations and to assure supervision over observance of their regulations, including regular supervision over observance of sanitation flow, preventing the negative impact of water level fluctuations on river ecosystems	RVP, VĢD	2005.	Budget funds
7.	To determine the power tax according to the European Union requirements and to assign at least part of such tax receipts to implementation of environmental requirements at power enterprises	FM, EM	2008.	Budget funds
8.	To assure implementation of power effectiveness measures according to requirements of the European Union directives +	EM, RAPLM	2008.	Budget funds
9.	To analyse the impact of bio fuel use on national economy and to work out the law of bio fuel +	ZM, EM, FM	2005.	Budget funds
10.	To assure extension of laboratories that could determine assessment of quality of bio fuel (bio diesel fuel, bio ethanol, biogas), fossil fuel and biological admixtures +	ZM, EM, FM	2005.	Budget funds
11.	To start up manufacturing and use of bio fuel (bio diesel fuel, biogas) in Latvia +	ZM, FM, EM, SM, P		Project
12.	To establish preconditions and the base for support to reconstruction and extension of oil extraction factories +	ZM, EM, FM		
13.	To establish preconditions for possible construction of biogas acquisition plants for cattle farms, food enterprises, town and village solid waste landfills +	VIDM, EM, ZM, FM		
14.	To implement environmental requirements for small-size boiler houses in current boiler houses	RVP, VVI	2007.	Budget funds, private funds

15.	To support research works in the sphere of power effectiveness, to make market research, to develop standard, marking and certification systems, to support implementation of power effective products and technologies, to develop public information and education systems within the European Union programmes +	VIDM, IZM, EM,	2006.	Budget funds
16.	To establish economically justified pre-conditions for use of renewable power resources for electric power generation and promotion of cogeneration, including assessment of implementation of green certificates	VIDM, EM, ZM	2007.	Budget funds
17.	To work out standard acts regulating environmental requirements for small-size boiler houses	VIDM, RVP	2004.	Budget funds, using Denmark's technical assistance

+ measures will be prioritised according to individual planning documents.

++ Private investments required are related to implementation of measures stated in section 4. 11 above.

4.13. Environment and transport

	Measures	Responsible institutions	Term	Funding
1.	To assure fulfilment of requirements of standard acts concerning control of vehicle exhaust gases	SM, CSDD	2004.	Budget funds
2.	To implement higher exhaust gases control norms for vehicles equipped with catalysts	SM, CSDD	2004.	Budget funds
3.	To assure quality control of fuel used in vehicles	VIDM, EM, FM,	2004.	Budget funds
4.	To achieve adoption of new and higher requirements concerning petrol and diesel fuel quality	EM, VIDM	2008.	Budget funds
5.	To assure application of the first-level steam pumping system to oil depots and filling stations	VIDM	2008. ****	Budget funds
6.	To supply the public with information on fuel consumption of individual vehicles used thereby and carbon dioxide emissions	VIDM, SM	2004.	Budget funds
7.	To popularise bicycle transport as an environmental friendly vehicle for everyday use and to promote establishment of respective infrastructure +	VIDM, SM, P	2008.	Budget funds, additional funds
8.	To ratify Appendix 6 to the International Convention on Vessel Contamination, providing for limitation of volatile organic compounds emission from transit fuel terminals	VIDM, SM	2005.	Budget funds, the EU structural funds co-funding
9.	To achieve an international arrangement to the effect that hazardous cargo may be carried in the Baltic Sea by vessels designed according to the highest requirements concerning accident prevention	VIDM, SM	2008.	Budget funds
10.	To achieve transport flow optimisation, especially in large towns in order to prevent vehicle congestion and to reduce air pollution accordingly +	SM, P	2008.	Budget funds
11.	In cargo carriage to promote transition from motor transport to vessels and railway transport (and pipelines), thus assuring decrease of distance covered by motor transport, as well as involvement of all types of transport in the united transport pattern	SM	2008.	Budget funds, the EU structural funds co-funding
12.	To increase the share of public transport in passenger carriage +	VIDM, SM, P	2008.	Budget funds, the EU structural funds co-funding
13.	In designing new objects of transport infrastructure, to improve assessment of the impact of environment and transport sustainability, taking into account the impact on human health and specially protected nature territories	VIDM, SM	2008.	Budget funds
14.	To assure transport flow optimisation as part of the territory planning measures	VIDM, RAPLM, SM	2008.	Budget funds
15.	To promote use of alternative fuel (bio fuel, natural gas, hydrogen) in motor transport	VIDM, SM, ZM	2008.	Budget funds

16.	To use the current transport capacity effectively, so as there would be no need to establish new transport infrastructures	SM	2008.	Budget funds, the EU structural funds co-funding
17.	To assure evaluation of strategic impact of plans and programmes in the sphere of transport on environment, in case they have material impact on human health and environment	VIDM, IVNVB, SM	2008.	Budget funds
18.	To implement measures for prevention of accidents in hazardous cargo carriage	SM	2008.	Budget funds
19.	To assure more environmentally friendly road maintenance in wintertime +	SM, P	2008.	Budget funds
20.	To implement necessary measures to state the Gulf of Riga as a specially sensitive area of the Baltic Sea	VIDM	2008.	Budget funds
21.	To lower the risk of accidents in hazardous cargo carriage, working out routes for hazardous cargo carriage	VIDM, SM	2008.	Budget funds

***** To assure application of I level steam pumping system to oil depots and filling stations - oil depots with the annual fuel volume below 25000 tons – 31 December 2008, and filling stations with the annual fuel volume over 1000 m^3 – 31 December 2004, over 100 m^3 – 31 December 2008.

+ The state authorities together with municipalities prioritise measures in order to lower health risk caused by transport systems.

4.14. Environment, dwelling and construction

	Measures	Responsible institutions	Term	Funding
1.	To implement the European Union legislation for improvement of the system of building standards	EM	2005.	Additional funds – 5 000 Ls per year
2.	To improve evaluation systems of building products conformity according to requirements of the European Union directives and resolutions of the European Commission	EM, SO	2005.	Additional funds - 10 700 Ls
3.	To assure adaptation of standards of the International Standardization Organization and working out of Latvian standards in evaluation of conformity of construction and building materials	EM	2008.	Budget funds
4.	To work out standard acts for implementation of power audit of buildings and certification of power auditors	EM	2006.	Budget funds
5.	To organise a campaign to inform the public of power resources saving	EM	2008.	Budget funds
6.	To work out recommendations for innovative technologies for building products and funding of demo projects implementation	EM	2008.	Budget funds
7.	To promote investment offers of scientific developments and implementation of advanced building products manufacturing technologies to entrepreneurs	EM	2008.	Private funds
8.	To promote knowledge of standard acts in construction and standardisation, as well as evaluation of building products conformity on the part of municipal institutions, construction companies and manufacturers of building products	EM, P	2008.	Budget funds
9.	To work out regulations of hydrotechnical edifices insurance for hydroelectric power stations	EM, FM	2004.	Budget funds
10.	To work out regulations of obligatory insurance of civil liability of building participants	EM, FM	2005.	Budget funds
11.	To assure establishment and activities of the bureau for technical approval of building products	EM, SO	2007.	Budget funds
12.	To work out procedures of supervision over the building products market	EM, FM	2005.	Budget funds
13.	To prepare managers certification systems	EM, SO	2004.	Budget funds
14.	To work out a standard base for implementation of dwelling monitoring	EM	2005.	Budget funds
15.	To work out a standard base for implementation of technical supervision over dwelling maintenance	EM, RAPLM	2004.	Budget funds
16.	To start up implementation of the dwelling monitoring system, including unfinished construction	EM, RAPLM, MA	2008.	Private funds

17.	To work out the State Support programme for dwelling development	EM, RAPLM, MA	2008.	Budget funds
18.	To work out the concept of Implementation of Directives in Power Effectiveness	EM, RAPLM, SO	2004.	Budget funds
19.	To work out heating engineering standards in order to raise power effectiveness of buildings	EM	2005.	Budget funds
20.	To work out propositions for engineering treatment of power saving measures in buildings and implementation of Power Passports of buildings	EM, RAPLM	2007.	Budget funds
21.	To carry out territory planning of all levels according to requirements of the Territory Planning Law	EM, RAPLM, P	2008.	Budget funds

Priority of measures of power effectiveness is determined according to individual planning documents.

4.15. Environment and state defence

	Measures	Responsible institutions	Term	Funding
1.	To study technogenic and communal environmental load of objects owned by the Ministry of defence over the previous period of the territory use	AIM, NBS	2004.	Budget funds
2.	To assess the hazard and possible impact of polluted and potentially polluted sites on environment, society and human health, to identify objects liable to risks	VIDM, AIM, NBS, P	2005.	Budget funds
3.	According to the assessment results, to make lists of primary objects, stating whether they require recovery measures or regular situation control will suffice	AIM, NBS	2005.	Budget funds
4.	To carry out remediation of polluted sites owned by the Ministry of Defence	AIM, NBS	2008.	Budget funds
5.	To improve the waste management system in the National Armed Forces	AIM, NBS	2008.	Budget funds
6.	To prepare and distribute information materials on standard acts in environmental protection, environmental standards and topical issues in the sphere of nature and environment	AIM, NBS	2008.	Budget funds
7.	To improve the system of training in environmental protection in the National Armed Forces	AIM, NBS	2008.	Budget funds
8.	To achieve gradual and regular improvement of environmental quality in all key spheres, including reduction of air, water and soil pollution	AIM, NBS	2008.	Budget funds
9.	To assure prevention of pollution menace, encouraging use of environmentally friendly technologies, converting all production processes and work methods for reduction of environmental menace as far as possible at the same time	AIM, NBS	2008.	Budget funds
10.	To limit use of environmentally hazardous raw materials and products, promoting sorting, treatment and recycling of liquid and solid waste at the same time	AIM, NBS	2008.	Budget funds
11.	To limit power use, encouraging power saving and use of renewable power sources at the same time	AIM, NBS	2008.	Budget funds
12.	To assure observance of requirements of nature conservation, protection of rare plant and animal species, retaining biological diversity, social, cultural and historical values	AIM, NBS	2008.	Budget funds
13.	To implement elimination and prevention of single cases of contamination, cleaning and recovery of objects of nature, as well as involvement of military entities in civil environmental protection measures and projects on a regular basis	AIM, NBS	2008.	Budget funds

In case of insufficient funding, measures planned are prioritised and implemented over a longer period.

4.16. Environment and agriculture

	Measures	Responsible institutions	Term	Funding
1.	To carry out effective management of agricultural lands	ZM	2008.	Budget funds, the EU co-funding
2.	To retain soil quality	ZM	2008.	Budget funds, the EU co-funding
3.	To reduce soil pollution	ZM	2008.	Budget funds, the EU co-funding
4.	To reduce surface and underground water pollution caused by agriculture	ZM	2008.	Budget funds, the EU co-funding, private funds
5.	To develop environmentally friendly agriculture	VIDM, ZM	2008.	Budget funds, the EU co-funding, private funds
6.	To promote alternative employment in the countryside	ZM	2008.	Budget funds, the EU co-funding
7.	To promote production of bio fuel	ZM	2008.	Budget funds
8.	To reduce environmental load of waste waters and waste of rural locations	VIDM, ZM, P	2008.	Budget funds, the EU co-funding
9.	To prevent decrease of biological diversity and degradation of rural landscapes	VIDM, ZM	2008.	Budget funds, the EU co-funding
10.	To satisfy the demand of Latvian consumers for high-quality foodstuffs	ZM	2008.	Budget funds
11.	To promote sustainable development of rural locations	VIDM, ZM, P	2008.	Budget funds
12.	To retain cultural and historical landscapes in organising land planning and management	VIDM, ZM, P	2008.	Budget funds
13.	To restore landscapes degraded as a result of human activities	VIDM, ZM, P	2008.	Budget funds
14.	To retain characteristic landscapes in territories with suspended agricultural activities	ZM, P	2008.	Budget funds
15.	To use agricultural lands for purposes that may be combined with protection and improvement of environment, rural landscapes, natural resources, soil and species diversity	ZM, P	2008.	Budget funds
16.	To promote development of environmentally friendly farms	ZM, P	2008.	Budget funds
17.	To reduce soil pollution, erosion and degradation	ZM, P	2008.	Budget funds, the EU co-funding
18.	To reduce leakage of soil nutrients from agricultural lands, including nitrate contamination in specially vulnerable territories, and to limit water eutrophication	VIDM, ZM, P	2008.	Budget funds, the EU co-funding
19.	To limit water and soil pollution with pesticide residue and heavy metal compounds	VIDM, ZM, P	2008.	Budget funds
20.	To prevent environmental pollution with hazardous substances of food treatment	VIDM, ZM, P	2008.	Budget funds
21.	To reduce environmental load of waste waters and waste from inhabited locations	VIDM, ZM, P	2008.	Budget funds
22.	To establish a system for collection and disposal of animal waste products	VIDM, ZM, P	2004.	Budget funds, private funds

In case of insufficient funding, measures will be implemented in priority succession stated in respective planning documents.

4.17. Environment and forestry

	Measures	Responsible institutions	Term	Funding
1.	To make inventory of important forest territories for preservation of biological diversity	VIDM, ZM, VMD	2008.	Budget funds, the EU co-funding
2.	To improve knowledge of forest owners, managers and society in issues of biological diversity of forest and ecological functions of forest	VIDM	2008.	Budget funds, the EU structural funds co-funding
3.	To promote sustainable development of forestry	ZM	2008.	Budget funds, the EU co-funding
4.	To work out the national programme of the Latvian forest and related industries	ZM	2005.	Budget funds, co-funding of the UN Food and Agriculture Organisation
5.	To implement the forest monitoring programme	ZM, VMD	2008.	Budget funds, additional funds – 928 000 Ls, including the EU co-funding
6.	To promote establishment of the forest owners association	ZM	2006.	Budget funds, the EU co-funding
7.	To perform aforestation in agriculturally non-usable lands and forest renewal	ZM	2008.	Budget funds, private funds, the EU co-funding
8.	To preserve biological diversity and ecological quality of forest in climate and water regime regulation, as well as soil protection	VIDM, ZM, P	2008.	Budget funds
9.	To promote use of timber products in construction and other spheres in order to preserve bound carbon accumulated in timber	VIDM, ZM, EM	2008.	Budget funds
10.	To work out landscape ecological planning models in forest management	VIDM, ZM, VMD, VAS LVM	2005.	Budget funds

In case of insufficient funding, measures will be implemented in priority succession stated in respective planning documents.

4.18. Environment and fishery

	Measures	Responsible institutions	Term	Funding
1.	To carry out monitoring of fish resources condition	VZP, LZPI	2008.	Budget funds
2.	To carry out monitoring of migrating fish in the Salaca river basin	LVA, LZPI	2008.	Budget funds
3.	To perform satellite observation of fishing ships	JVP	2008.	Budget funds
4.	To provide scientific substantiation of artificial reproduction and preservation of natural population of migrating fish	VZP, LZPI	2008.	Budget funds
5.	To work out fishery operation regulations for public water reservoirs	LZPI	2008.	Budget funds
6.	To work out trout species protection plan	LZPI	2005.	Budget funds
7.	To process and assess data on invasive animal species (sea invertebrates, fish) acquired under sea monitoring	LVA, LZPI	2008.	Not required
8.	To improve methods of calculating damage inflicted on fish resources as a result of business activities	VVI, VZP, LZPI	2004.	Budget funds
9.	To work out and implement a habitat recovery programme in Salaca	ZBR	2004.	GEF Project funds
10.	To implement vimba spawning grounds in the Lielupe riverhead	Bauska MMB	2004.	Bauska MMB funds
11.	To perform assessment and monitoring of effectiveness of Karlu hydroelectric power station fish path operation	VZP	2004.	DANCEE funds
12.	To restore floodgate by the Kaniera Lake and to determine the fish migration route	ĶNP	2004.	Funds of the Project "Wetland Management in ĶNP"
13.	To restore Aiviekste floodgate	Madona District Council	2005.	Funds of the Project "Lubana Wetland Complex Management"
14.	To restore water exchange between the Baltic Sea and Papes Lake	GEF	2006.	Funds of the Project "Papes Lake – Management and Development"
15.	To assure implementation of the State Fish Resources Reproduction Programme +	VZP	2008.	Budget funds
16.	To assure implementation of the Fishing Fleet Development Programme +	VZP	2004.	Budget funds
17.	To assure implementation of the Fish Industry Development Programme +	VZP	2006.	Budget funds, the EU co-funding
18.	To improve standard acts regulating fishing and industrial fishing, taking into account the necessity of protecting different fish species and their population	VZP	2004.	Budget funds
19.	To preserve biological diversity and population structure of waters of Latvia	VIDM, ZM	2008.	Budget funds
20.	To protect genetic diversity of fish populations	VIDM, ZM	2008.	Budget funds
21.	To promote and to develop fishing, fishing tourism as a promising part of fishing industry	VIDM, ZM, EM	2008.	Budget funds

+ Measures will be implemented in priority succession according to individual planning documents.

4.19. Environment and tourism

	Measures	Responsible institutions	Term	Funding
1.	To assure tourism strategy giving possibilities of additional growth of the industry and allowing for use of major tourism resources of Latvia to a fuller extend	EM, TAVA, P	2006.	Budget funds
2.	To study the impact of tourism objects on environment, to determine permissible loads and the best recreation types at such objects	EM, VIDM, TAVA	2006.	Budget funds
3.	To continue improvement of the system of current quality certificates and quality marks	VIDM, EM	2005.	Budget funds
4.	To work out united methods of tourism resources assessment and determining tourism development territories	VIDM, TAVA, EM, P	2005.	Budget funds
5.	To promote co-operation of entities rendering tourist services with environmental specialists and municipalities for assurance of sustainable tourism	VIDM, EM, DAP, P	2008.	Budget funds
6.	To implement the European Union standard acts and standards, as well as the system of ecological marking in the sphere of Latvian tourism	VIDM, EM, P	2008.	Private funds
7.	To develop co-operation with tourism organisations of the Baltics in implementation of sustainable tourism policy	VIDM, EM, P	2008.	Budget funds
8.	To promote preparing high-quality information on possibilities of nature tourism	VIDM, TAVA, EM	2008.	Budget funds
9.	To work out and to implement indications of sustainable tourism development	VIDM, EM, LVA	2005.	Budget funds
10.	To promote preparation and publishing of educational materials on sustainable and environmentally friendly tourism	VIDM, EM	2008.	Budget funds
11.	To promote implementation of environment management systems at enterprises rendering tourist services	VIDM, EM, P	2008.	Budget funds
12.	To educate tourists and employees of the tourist industry in issues of environmental protection and nature conservation	VIDM, EM, TAVA	2008.	Budget funds
13.	To implement environmentally safe and environmentally friendly technologies in tourism enterprises	EM, TAVA	2008.	Budget funds
14.	To promote establishment of a united information system	EM, TAVA	2008.	Budget funds
15.	To develop monitoring methods in tourist industry	VIDM, EM, TAVA	2008.	Budget funds
16.	To promote development of nature, rural, healing tourism, ecotourism, cycling tourism and related infrastructure, as well as establishment of respective tourist objects	VIDM, EM	2008.	Budget funds
17.	To improve the network of competent and certified nature guides	VIDM, EM	2008.	Budget funds
18.	To promote sustainable use of resources in tourist industry	VIDM, EM	2008.	Budget funds
19.	To assure the necessary scope of high-quality information in respective languages for priority tourism markets in conformity with the united visual concept of Latvian tourism image	VIDM, EM, P	2008.	Budget funds

In case of insufficient funding, measures will be implemented in priority succession stated in respective planning documents.

4.20. Environment and health

	Measures	Responsible institutions	Term	Funding
1.	To reduce air pollution caused by motor transport, especially in large towns of the country	VIDM, SM	2008.	Budget funds
2.	To improve the environmental monitoring system and to transfer data of environment condition to the disposal of society	LHMA	2008.	Budget funds
3.	To increase use of environmentally friendly fuel	VIDM, SM, VM, P	2008.	Budget funds
4.	To make research at risk zones in order to be able to plan pollution reduction	VIDM, SM, ZM	2008.	Budget funds
5.	To improve the institutional system of labour protection and its administration	LM	2008.	Budget funds
6.	To improve the alarm system related to exceeding of the environmental pollution noise level	VIDM, VM, LHMA, P	2008.	Budget funds
7.	To improve the training system in labour protection	LM, IZM	2008.	Budget funds
8.	To implement measures for reduction of unpleasant smells at individual objects	RVP, IVNVB, VVI	2008.	Budget funds
9.	To promote development of public transport and bicycle transport	SM, P	2008.	Budget funds
10.	To improve accessibility of information on labour protection issues to employers and employees	VM, LM	2008.	Budget funds
11.	To improve state control and supervision mechanism, classifying enterprises according to their hazardousness and providing for appropriate control and supervision measures	VIDM, VM, SVA, LM	2008.	Budget funds
12.	To inform and to educate society on living environment and dwelling improvement possibilities	VIDM, VM, SVA, LM	2008.	Budget funds
13.	To improve the system of dwelling quality control	EM, RAPLM	2005.	Budget funds
14.	To work out air quality standards for indoors and to establish the system for indoors air quality assessment	VM, RAPLM, SVA	2006.	Budget funds
15.	To assure street cleaning and watering	P, RAPLM	2008.	Budget funds
16.	To limit factors contributing to negative biological effects (distribution of ticks and rodents)	VM, P	2008.	Budget funds
17.	To promote public awareness of the culture of pets keeping	ZM, VM	2008.	Budget funds
18.	To assure existentially required conditions in case of acts of God	IEM, LM, VM	2008.	Budget funds
19.	To revise and to improve the system of state social insurance payments and respective standard acts, as well as the tax system in order to encourage entrepreneurs to invest in appropriate arrangement of work environment (to set differentiated insurance payments against occupational diseases and accidents for employers improving work environment at their enterprise)	LM, FM	2008.	Budget funds

20.	To improve the system of labour protection standards, promoting accessibility of standards to employers	LM, FM, EM	2008.	Budget funds
21.	To improve qualification of specialists performing statutory health examinations	VM	2008.	Budget funds
22.	To implement new, less hazardous technologies, work methods and equipment	VM	2008.	Budget funds
23.	To assure health and environmentally friendly handling of hazardous chemical compounds	VIDM, VM, LM	2008.	Budget funds
24.	To implement measures for reduction of unfavourable impact of noise on human health	RAPLM, P	2008.	Budget funds
25.	To improve the system of medical waste management	VIDM, VM	2008.	Budget funds
26.	To extend the system of public toilets and mobile toilets (in buses, trains)	RVP, P	2005.	Budget funds
27.	To supervise pesticide circulation and to popularise use of biological means of plants protection	ZM	2008.	Budget funds
28.	To organise collection of hazardous waste from households	VIDM, P	2008.	Budget funds
29.	To improve drinking water quality, reducing the content of iron compounds in particular	VIDM, VM, P	2008.	Budget funds
30.	To make research of water quality in framed wells and to inform rural inhabitants of issues of water quality	VM, LVA, VVI	2008.	Budget funds
31.	To extend the “Blue Flag” movement	VIDM, P	2008.	Budget funds
32.	To extend the number of registered bathing grounds and to assure their conformity to hygienic requirements	VM VSI, P	2008.	Budget funds, additional funds
33.	To supervise sites of artesian wells	VVI, VĢD	2008.	Budget funds
34.	To prevent inflow of non-treated waste water in natural water reservoirs and water courses	VIDM, P	2008.	Budget funds
35.	To assure a co-ordinated system of foodstuffs safety control and epidemiological information circulation	VM, LPC, LM, VSI	2008.	Budget funds
36.	To inform the public of issues of foodstuffs safety on a wider scale	VM LPC	2008.	Budget funds
37.	To include information on use of household chemicals in school syllabi	IZM	2008.	Budget funds
38.	To improve safety of hazardous cargo carriage	IEM	2008.	Budget funds
39.	To implement preventive measures against accidents with leakage of hazardous chemicals	IEM, VM, VIDM	2008.	Budget funds
40.	To extend greened areas and places of recreation in natural urban environment	VIDM, RVP, P	2008.	Budget funds
41.	To get involved in the World Health organisation Movement „Healthy City” on a wider scale	VIDM, RVP, P	2008.	Budget funds
42.	To establish a permanent inter-ministry (VIDM, VM, SM) work group for settlement of environmental and health problems	VIDM, VM, SM	2004.	Not required

Implementation of environmental and health measures depends on funding meant for achievement of goals of the above section to a great extent. Environment and hence human health actually improve as key problems of environmental protection are resolved.

4.21. Environmental information and public participation

	Measures	Responsible institutions	Term	Funding
1.	To improve standard acts in order to assure distribution of environmental information and to increase public participation in environment-related decision-making	VIDM, SO	2004.	Budget funds
2.	To establish the Environmental Information and Education Centre at the Ministry of Environment to supply the public with environmental information, to deal with complaints and propositions of the public and to carry out educational work +	VIDM	2005.	Budget funds
3.	To establish and develop regional and local environmental information centres	VIDM, RVP, P, SO	2008.	Budget funds, additional funds
4.	To prepare propositions for decision-making on the basis of environmental information acquired	VIDM, LVA	2008.	Budget funds
5.	To establish a united state system of environmental information comprising environmental information available to state and municipal institutions, as well as public organisations	VIDM, VM, SM, ZM, LHMA, LVA, SO, P	2007.	Budget funds, additional funds
6.	To establish regular co-operation with mass media representatives, supplying them with comprehensive environmental information	VIDM, SO	2008.	Budget funds
7.	To work out guidelines and the mechanism for active distribution of information on environmental issues among the public +	VIDM, SO	2005.	Budget funds
8.	To find out and to analyse public interests in order to determine data within the scope of public interest, and to pay more attention to preparing and distribution of such information +	VIDM, SO	2005.	Budget funds
9.	To involve public environmental organisations in the public awareness process	VIDM, SO, P	2008.	Budget funds, additional funds
10.	To establish environmental awards of the local scale and to set up privileges in commercial activities in order to encourage involvement of small and middle-scale enterprises in environmental projects +	VIDM, P	2008.	Budget funds, private funds
11.	To improve the process of entrepreneurs' education and information work with consumers in order to extend the scope of environmentally friendly services	VIDM, SO	2008.	Budget funds, private funds
12.	To establish conditions for the public, public organisations and professional associations to be able to participate in the process of decision-making to a greater extend and on a wider scale	VIDM, P, SO	2008.	Budget funds
13.	To assure implementation the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters	VIDM, P, SO, ministries	2008.	Budget funds

The Environmental Protection Fund will assure additional funds in the form of subsidies and investments from funds of the subsidiary programme "Environmental Information, Environment Education and Upbringing" (approximately 400 000 – 500 000 Ls per year).
+ In circumstances of insufficient additional funding implementation of events may take a longer period.

4.22. Environment education and science

	Measures	Responsible institutions	Term	Funding
1.	To establish a comprehensive system of state environmental education	IZM, VIDM	2008.	Budget funds, additional funds
2.	To assure use of new training methods and development of study aids in environmental education at all degrees of education	IZM	2008.	Additional funds - to be specified
3.	In order to promote successful development of environmental sphere, to include environmental education into priority lines of education development, and increase the number of student places paid from the state budget in the field of higher environmental academic and professional education	IZM	2008.	Budget funds
4.	To consolidate co-operation between schools, higher educational establishments, public organisations, environmental protection institutions, municipalities and other institutions for study of environmental education needs	VIDM, IZM, P	2008.	Budget funds
5.	To improve environmental education in order to assure public awareness of the guidelines of sustainable development	VIDM, IZM	2008.	Budget funds, additional funds
6.	To establish a logically arranged system of environmental education for all degrees	VIDM, IZM	2008.	Additional funds - to be specified
7.	To promote establishment of the institution of sustainable development	VIDM	2008.	Budget funds, additional funds
8.	To promote establishment of the Environmental Protection Faculty (Departments)	VIDM, IZM, U	2008.	Budget funds, additional funds
9.	To assure training of qualified environmental specialists, to increase the number of environmental specialists in all industries of national economy, especially in municipal institutions and planning regions	IZM, RAPLM, P	2008.	Budget funds
10.	To achieve that all graduates of higher educational establishments should acquire knowledge of environmental protection or sustainable development	IZM	2008.	Budget funds, additional funds
11.	In co-operation with state institutions and public organisations to consolidate environmental education as continuous studies		2008.	Budget funds
12.	According to the Declaration of the fifth Ministerial Conference “Environment for Europe” (Kiev), to carry out education for sustainable development	IZM	2008.	Additional funds – to be specified
13.	To establish a work group of permanent ministries (VIDM, IZM) and other organisations (LZA, municipalities, higher educational establishments, commercial companies) for settlement of environmental education problems	VIDM, IZM, P	2008.	Budget funds
14.	To assure activity of the Council for Sustainable Development	VIDM, ministries	2008.	Budget funds
15.	To extend research of mutual activities of environment, social sphere and national economy in order to establish scientific basis for sustainable development of the state	VIDM, IZM, LM, LZA	2008.	Budget funds, additional funds

The Environmental Protection Fund will assure additional funds in the form of subsidies and investments from funds of the subsidiary programme “Environmental Information, Environment Education and Upbringing” (approximately 400 000 – 500 000 Ls per year).

4.23. Agenda 21

	Measures	Responsible institutions	Term	Funding
1.	In co-operation with the Ministry of Foreign Affairs to assure participation of Latvia in the UN sustainable development processes, co-ordination of the European Union foreign policy of sustainable development and promotion of co-operation of the Baltic countries	VIDM, ĀM	2007.	Budget funds
2.	To develop co-operation with world countries, including the CIS countries for rendering consulting in environmental policy integration and working out new policies and programmes, Latvia becoming a donor country.	VIDM, ĀM	2008.	Budget funds
3.	To assure activity of the Environmental Advisory Council for promotion of the Agenda 21 process at different levels in Latvia and in establishing new partner relations for implementation of sustainable development in Latvia	VIDM	2008.	Additional funds – 3 000 Ls per year
4.	To establish inter-industry dialogue in implementation of joint initiatives and projects of sustainable development among ministries in order to succeed in planning and implementation of integrated sustainable development projects	All ministries	2008.	Additional funds, the EU co-funding
5.	To activate participation of agriculture, energetics, fishing, forestry, industry, tourism, transport, space planning and education in sustainable development co-operation of the Baltic countries, as well as in planning and implementation of joint projects	ZM, EM, SM, RAPLM, IZM, VIDM	2005.	Budget funds
6.	To integrate principles of sustainable development planning in development of Latvian regions	VIDM, Latvian planning regions	2006.	Additional funds - 3 million Ls from the Interreg programme funding
7.	To pass decisions on commencing and implementation of the process of local Agenda 21 at all levels of municipalities	VIDM, LPS	2005.	Budget funds
9.	To organise information campaigns concerning implementation of Agenda 21 in Latvia	VIDM	2007.	Additional funds – 5 000 Ls

In circumstances of insufficient additional funding implementation of events may take a longer period.

4.24. Funds and economic instruments

Available funds and economic means promote implementation of environmental protection measures in Latvia:

- subsidies and investments from the state budget or from foreign donors,
- loans from the Latvian Environment Investment Fund and international financial institutions,
- state guarantees for receipt of loans in implementation of environmental protection projects,
- reimbursement for losses resulting from damage inflicted upon environment,
- natural resources tax,
- excise tax on oil products, fuel and cars,
- state support policy.

Since 1995 the State Investment Programme has been developed in Latvia for the purpose of raising funds for appropriate arrangement and development of economic and state infrastructure, including environmental protection infrastructure. Under the State Investment Programme different financial sources are mobilised (the basic and special state budget, foreign assistance, loans, own funds), in order to assure funds for programmes and projects in priority industries stated by the government.

The Ministry of Environment has set appropriate arrangement of the water system in towns with over 2000 inhabitants, establishment of the system of municipal and hazardous waste, as well as consolidation of environmental protection institutions as priorities in making the State Investment Programme in the sphere of environment.

International organisations and bilateral co-operation partners have assigned technical assistance to research and making environmental projects, consolidation of institutions and training, approval of standard acts, and investments to waste and water system management, improvement of radiation safety and other environmental protection measures, under respective agreements.

Especially important financial and consulting support has been rendered by bilateral co-operation partners (Denmark, Sweden, Finland, Germany, the Netherlands, Germany, the USA) in establishment of the environmental protection system of Latvia. Upon accession to the European Union the equivalence principle will be applied to co-operation in environmental protection — financial support of bilateral co-operation partners will decrease, and that of the European Union funds and programmes will increase.

Funding of large-scale projects, including environmental infrastructure projects, is based on the principle of joint funding, its integral component being the credit (loan) borrowed for implementation of a project and to be repaid to the funding lender according to specific terms stated in the agreement. Financial

institutions have similar criteria of assessment of project applications — conformity to priorities of environmental investments and of the respective credit institution, credit capacity of the project applicant, economic sustainability of the project, appropriate arrangement of legal rights and title.

The World Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Nordic Environment Finance Corporation, the Nordic Investment Bank support environmental investment projects in Latvia. The Ministry of Environment co-ordinates assignment of loans of such financial institutions to priority environmental investment projects.

In 1997 the Nordic Investment Bank opened a credit line for Latvian environmental and energetics infrastructure projects to the amount of 20 million euros. In 1999 the European Investment Bank opened a credit line to the total of 20 million euros for improvement of environmental protection infrastructure in Latvia. In its turn, the Nordic Environment Finance Corporation and the Republic of Latvia signed an agreement on the legal status of the Nordic Environment Finance Corporation in Latvia in 1998. Such agreement serves as a basis of co-operation for further years.

The Latvian Environment Investment Fund has the following priorities:

- air protection projects covering environmental friendly heating supply (transition to use of bio fuel, replacing black oil with environmental friendly fuel), as well as rational use of energy in final consumption,
- projects for appropriate arrangement of water system of small Latvian municipalities,
- cleaner production projects promoting implementation of modern production principles in Latvian production enterprises,
- waste treatment.

The Latvian Environment Investment Fund provides for establishment of a structure with municipalities making 50% of customers, and commercial companies making the other 50%.

The state guarantee is assured for the required part (loan) of the project co-funding, unless the municipality involved is entitled to borrow funds or to supply a municipal guarantee due to financial reasons, and provided the project conforms to priorities set by the state in environmental protection.

Working out the Development Plan (the programming document for receipt of the European Union structural funds for 2004 – 2006), the state support programme is envisaged for environmental protection and energy saving too.

The Development Plan provides for support of:

- improvement of commercial companies' activities in environmental protection to a greater extent than stated in standards set for environmental protection,
- investments in spheres where no standards are set for environmental protection,

- investments in energy saving in order to increase effective use of energy,
- covering of current expenses of the commercial company for energy saving purposes,
- power generation in cogeneration stations,
- power generation from renewable power sources,
- implementation of new standards set for environmental protection (for small and middle-size commercial companies only).

Standard acts of Latvia provide for the volume of indemnity for damage inflicted upon environment. The Law "On Environmental Protection" provides for indemnity for damage inflicted upon human health, environment, biological diversity and natural resources. Article 53 of the above Law states: "Total losses caused by environmental damage shall be determined according to the scope of works and expenses required for restoration of affected environmental values or creation of environmental values of similar value, unless damaged inflicted on environment may be eliminated, as well as amounts of losses calculated for remaining and secondary environmental pollution according to standard acts." Such indemnity for damage inflicted upon environment is included in the Latvian Environmental Protection Fund.

The natural resources tax is applied in Latvia for pollution reduction and rational use of natural resources, being regulated by the Law "On the Natural Resources Tax". National resources tax is applied to the following objects:

- acquisition and use of natural resources,
- pollution of air, waters, soil, ground and the bed of water reservoirs, storage of waste in dumps and landfills, incineration of hazardous waste,
- import or sale of environmentally hazardous goods and products,
- packaging of goods or products and disposable tableware and accessories,
- import of radioactive substances.

The National Environmental Policy Plan provides for more extensive use of the principle "the polluter pays" in all industries of national economy.

All receipts from natural resources tax payments are to be used only for funding of measures and projects that are directly related to environmental protection, remediation, utilisation or recycling of waste that is hazardous for environment and human health, incineration of hazardous waste, storage of radioactive waste, research or restoration of natural resources.

Discounts for national resources tax are granted to tax payers, who fund projects aimed at decrease of environmental contamination or use of natural resources, for contribution to environmental protection. Such discounts are meant for enterprises implementing voluntary programmes in management of used packaging too. Partial refund is envisaged for recycling and utilisation of environmentally hazardous waste of goods and products.

Excise tax on oil products, fuel and cars is used as an economic method in environmental protection too. Although all receipts from such tax fail to be

assigned to environmental protection, differentiated tax rates on fuel encourage use of fuel of better quality, which is more environmentally friendly.

Additional financial resources may be raised for implementation of environmentally friendly projects in commercial companies and municipalities, using the UN Framework Convention on Climate Change Kyoto Protocol flexible mechanisms (jointly implemented projects and emissions trading). Such mechanisms open up new opportunities for promotion of wider use of cleaner production principles, better engineering methods, as well as other environmentally friendly technologies. Latvia already participates in jointly implemented projects carried out by the Carbon Reduction Fund. The project provides for sale of generated emissions reduction units to investors.

In order to raise private funds for implementation of environmental prevention measures in the public sector (water system, waste management, power supply), legal pre-conditions have been established for co-operation of public and private business as the Concession Law was adopted in Latvia.

In attracting money of the European Union funds, it is to be taken into account that the European Commission supports co-operation forms of the private and public sector established in conformity with requirements of the European Union standard acts, mainly in relation to purchase procedures. The most effective co-operation of the private and public sector is envisaged in implementation of waste management and power supply projects.

Most economic measures refer to environmental institutions. The following measures are applicable to nature conservation, retaining of biological diversity, assuring protection of protected species and biotopes, establishment of the network of specially protected nature territories, assuring of fish reproduction and protection measures:

- reimbursement for losses sustained due to observance of regulations of protection and use of specially protected nature territories,
- reimbursement for damage inflicted by animals of specially protected non-hunted species and migrating species,
- granting subsidies in biological agriculture,
- funding of measures for fish reproduction and protection,
- reduction of the cadastre value and the real estate tax,
- exchange for land of the similar value,
- redemption of land in order to protect areas liable to protection.

Apart from the state budget funds, other sources of funding nature conservation measures are used too: the Rural Development Programme, the European Union Special Assistance Programme for Agricultural and Rural Development “Improvement of Environment”. It will be possible to raise private funds within forestries certification and in part biological agriculture. Funds meant for implementation of the Rural Development Programme will be available for promotion of management of specially protected nature territories from 2004.

During implementation of the National Environmental Policy Plan the link of fulfilment of planned and priority tasks with financial resources for the following period will be specified. In the long-term prospective the natural resources tax will be revised, and a new system of forming financial resources and cost planning will be worked out for the needs of environmental protection.

In order to succeed in implementation of the National Environmental Policy Plan, considerable funds are envisaged. Projection of their amounts is shown in Table 4.1. However it is to be taken into account that funding of measures of the European Development Fund of 2007 and 2008 is included in the Table as an indication, because the European Union structural funds are normally planned for three years only.

***Table 4.1. Funding for development of the environmental protection infrastructure**, million lats.*

	2004.	**2005.**	**2006.**	**2007.**	**2008.**
Water system – investments in infrastructure					
European Union funding	16.674	21.090	103.437	85.379	59.228
State budget	0.749	11.343	7.391	—	2.870
Own funds	9.231	12.294	10.646	15.225	11.057
Total	**26.654**	**44.726**	**121.474**	**100.604**	**73.155**
Waste management - investments in infrastructure					
European Union funding	6.228	6.080	6.863	7.368	3.924
State budget	2.581	1.358	1.348	—	—
Own funds	2.850	1.998	2.291	1.081	1.340
Total	**11.659**	**9.436**	**10.502**	**8.449**	**5.263**

Expenses of measures co-funded by the European regional Development Fund are not shown in the Table, because currently only funding available for the measure „Environmental Quality and Infrastructure Improvement" is known.

According to the basic scenario of macroeconomic development, funding of environmental sector programmes and projects might increase up to approximately 100 million lats over the period from 2004 to 2008.

Latvia has already received considerable assistance from the European Union funds and programmes [funds of the European Union Structural Policy for Pre-Accession, funds for support of environmental protection and nature conservation projects (LIFE, PHARE)] in implementation of the Environment Policy — appropriate arrangement of the environmental protection infrastructure, environmental protection, radiation safety and higher power effectiveness projects, raising capacities of environmental protection institutions and other environmental protection projects. After its accession to the European Union, Latvia will have access to funds of the Cohesion Fund and the European Regional Development Fund for appropriate arrangement of its environmental protection infrastructure. It will be possible to use funds the European Regional

Development Fund for development of programmes for polluted sites remediation too, as well as for extension of specially protected territories.

Table 4.2. Funds available to Latvia from the European Union Funds for funding of environmental protection measures, million lats.

Fund	2004.	2005.	2006.
Cohesion fund	65.0	54.0	54.0
European Regional Development Fund *	10.3	14.4	15.3

*Total for the measure „Environmental Quality and Infrastructure Improvement".

In Latvia the natural resources tax is applied, and receipts from its payments are used for funding of measures directly related to environmental protection, utilisation or treatment of waste hazardous to environment and human health, radioactive waste disposal, research or recovery of natural resources.

It will be possible to rely upon approximately 12 million lats for implementation of measures of the National Environmental Policy Plan annually.

Table 4.3. Projected natural resources tax, million lats (without taking into account additional objects, on which the national resources tax may be levied).

	2004.	2005.	2006.	2007.	2008.
State budget	9.61	9.75	9.87	9.97	10.06
Municipal budget	2.00	2.00	2.00	2.00	2.00

4.25. Institutions for implementation of environmental measures

4.25.1. Environmental protection institutions

Over the last few years considerable funds have been invested in improvement of the Latvian Environment Agency and the Environmental State Inspectorate, as well as in establishment of the State Bureau for Environmental Impact Assessment. The structure development process is implemented horizontally too: by consolidating eight Regional Environmental Boards and the Marine Environmental Board, as well as by raising administrative capacities and scientific potential of stated protected territories.

The network of the Latvian Hydrometeorological Agency and Radiation Safety Centre units covers the entire country. Owing to this it is possible to implement the National Environmental Monitoring Programme and to acquire precise information on key parameters of environmental situation. Unfortunately, methodical difficulties of obtaining correct results have not been overcome, and the competence of personnel involved is insufficient. Eliminating

such shortages, will be possible to interpret data obtained adequately and to prepare them for decision-making purposes or informing the international public of fulfilment of Latvia's liabilities in environmental quality improvement.

With establishment of the new administrative territorial system of Latvia, the structure of the Ministry of Environment will have to be changed accordingly, especially at the level of Regional Environmental Boards and the Environmental State Inspectorate.

8 Regional Environmental Boards are subordinated to the Ministry of Environment — Daugavpils (Daugavpils, Kraslava, Preili, Jekabpils District), Jelgava (Jelgava, Bauska, Dobele District), Greater Riga (Riga, Ogre District), Liepaja (Liepaja, Kuldiga, Saldus District), Madona (Madona, Gulbene, Aluksne, Aizkraukle District), Rezekne (Rezekne, Balvi, Ludza District), Valmiera (Valmiera, Cesis, Limbazi, Valka District) and Ventspils (Ventspils, Talsi, Tukums District) Regional Environmental Board.

The main functions of Regional Environmental Boards are as follows:

- issuing administrative acts in environmental protection issues to individuals and corporate persons,
- supervision over observance of standard acts in environmental protection and nature conservation,
- collection, processing and transfer of environmental data and information for storage in centralised databases, as well as supply of information.

The Marine Environmental Board implements the state policy in marine environmental protection, sea coast development and use of sea natural resources. The economic zone, territorial sea continental shelf, port aquatoria of the Republic of Latvia, as well as vessels and other sailing means, artificial islands, plants and other edifices in sea waters of the Republic of Latvia are under supervision of the Marine Environmental Board.

The Environmental State Inspectorate supervises observance of requirements of standard acts in the sphere of environment and nature across Latvia, as well as carries out methodological management of Regional Environmental Boards.

The State Geology Service assures sustainable use and protection of resources of bowels of the earth. The main lines of its activities are: research of resources of bowels of the earth and their peculiarities, preparing basic geological information, assessment of the quality of geological processes and bowels of the earth, assuring storage and use of geological information, rendering services of geological nature.

After the Water Management Law entered into effect, the State Geology Service prepares and updates draft river basin management plans and programmes of measures, develops economic analysis of use of water resources, assures participation of society in preparing and updating of management plans and programmes of measures, as well as informs municipalities of administrative territories involved of such plans and programmes, and co-ordinates implementation of programmes of measures.

The Latvian Environmental Agency establishes a united information system of the Ministry of Environment, as well as develops the national environmental monitoring system and co-ordinates its functioning, makes registers of environmental loads, natural resources, environment quality, circulation of chemical substances and products, assures free access of the public to environmental information within the Agency's competence, as well as co-ordinates information circulation within the international environmental information system. The Latvian Environmental Agency performs the functions of the national co-ordinator and reference centre in the European Environmental Information and Observation Network (EIONET) of the European Environmental Agency, performs the functions of the national co-ordinator of the information circulation system of the Helsinki Convention Baltic Sea Area Environmental Protection and the UN Environmental Programme.

The Latvian Hydrometeorological Agency carries out practical hydrometeorological, oceanographical, geophysical and agrometeorological research and assures observation of environmental quality. The Latvian Hydrometeorological Agency supplies the state and municipal institutions, mass media, as well as individuals and corporate persons with general meteorological, hydrological and environmental quality information, forecasts, warnings of dangerous and elemental natural phenomena. Apart from that, it is to assure functioning of the specialised global telecommunication network in Latvia according to international requirements.

The State Bureau for Environmental Impact Assessment makes assessment of environmental impact of envisaged activities, evaluation of risks of industrial accidents and measures for their reduction, fulfils assignments set by the Law "On Pollution". The State Bureau for Environmental Impact Assessment establishes and maintains a publicly accessible information system of environmental impact assessment, permissions issued according the Law "On Pollution", as well as of programmes for prevention of industrial accidents and safety reports. The Bureau makes an information system of the best available technical methods too. It is planned that the State Bureau for Environmental Impact Assessment will be involved in the process implementation of the environmental management and audit system and strategic assessment of environmental impact with time.

The Radiation Safety Centre is a state supervision and control institution in the sphere of radiation and nuclear safety. The main function of the Radiation Safety Centre is to make it possible to safely use sources of ionising radiation and to protect the public and environment against possible hazardous impact, assuring the maximum benefit from use of radiation sources for the public at the same time. Tasks of the Radiation Safety Centre include preparing draft standard acts, implementation of the quality system, as well as registration of all radiation sources and their users, and licensing of respective activities, inspections of use of radiation sources and environmental control (measurements of the radiation dose output and contamination).

In specially protected nature territories, the Environmental Policy is implemented by territory administrations. Administrations of specially protected nature territories have been established for Kemeri National Park, Teici State Strict Nature Reserve (managing Krustkalnu and Teici Strict Nature Reserves), Slitere National Park (managing Moricsala and Grini Strict Nature Reserves too), Gauja National Park and the North Vidzeme Biosphere Reserve.

The Ministry of Environment Nature Protection Board assures implementation of the united nature protection and natural resources use in Latvia. The task of the Nature Protection Board is also to assure initiation, preparing and co-ordination of projects related to nature protection, including investment projects, as well as implementation of international projects.

The Latvian Environmental Protection Fund manages receipts from the natural resources tax on instruction of the Ministry of Environment. Penalties and fines collected according to the Law „The Natural Resources Tax", penalties and indemnities for environmental damage stated in other standard acts form assets of the Fund too. Funds of the Latvian Environmental Protection Fund may only be used for direct funding of and crediting of environmental protection measures, funding of environmental research and assessment programmes and projects, training of specialists and improvement of their qualification in environmental protection, and for other environmental protection purposes stated in the Fund's regulations. The amount of tax collected for consumption of environmentally hazardous goods and products may be refunded to enterprises, which utilise or recycle such goods or products.

The Commission for jointly implemented projects is a state consulting institution, its aim being to prepare and submit propositions and recommendations for implementation of the strategy of realisation of jointly implemented projects stated in the UN Framework Convention on Climate Change Kyoto Protocol (for 2002 - 2012). The Commission assesses international treaties with investor countries on the UN Framework Convention on Climate Change Kyoto Protocol flexible mechanisms, evaluates projects submitted to the Commission.

The goal of the Environmental Advisory Council is to promote co-operation and information exchange in environmental protection between public organisations, state institutions and municipalities, as well as to encourage propositions in issues related to working out environmental policy and preparing standard acts.

4.25.2. Municipalities

Standard acts provide for many functions of municipalities to be related to organisation of and supervision over environmental protection measures.

The Law "On Environmental Protection" states that the Ministry of Environment in co-operation with municipalities implements the united policy

of environmental protection, preservation and rational use of natural resources in this country.

Apart from that municipalities carry out the following activities in their administrative territories:

- supervise environmental protection and rational use of natural resources,
- initiate that state authorities should limit, suspend or terminate business activities or construction, reconstruction and extension of projects in cases when infringements of standard acts in environmental protection are allowed,
- organise development of district, town, town district and area environmental protection programmes, construction, reconstruction and extension of environmental protection projects,
- grant and cancel rights to use land and other natural resources, settle disputes between users of land and other natural resources within competence stated by the law,
- look after environmental quality improvement in their administrative territories.

State authorities, municipalities and society mutually co-operate in assuring decision-making, reconciling rights and interests of individuals with public rights and interests in the sphere of environmental protection.

Municipalities inform society of its rights and possibilities of receiving environmental information and participating in making decisions related to environmental protection, establish and update publicly accessible free databases, registers and INTERNET home pages, as well as prepare and publish reports on environmental situation, plans and programmes of the environmental policy.

Municipalities have the following responsibilities within their competence:

- to consider applications and propositions of every person concerning environmental protection and use of natural resources, and to inform persons of decisions made,
- to involve society in settlement of environmental protection issues, and to establish circumstances for participation of the public and public organisations in improvement of environment quality and environmental protection with their work or funds,
- in case of menacing hazard to human health or environment, to immediately distribute available information, provided the same may allow society, which is or may be affected, to act accordingly, in order to reduce hazardous impact or consequences of such menace, or prevent the same.

According to the Law “On Municipalities” municipalities:

- organise public communal services – water supply and sewerage, heating supply, communal waste management, collection, withdrawal and purification of waste waters,

- look after improvement and sanitation cleanness of their administrative territories (construction, reconstruction and maintenance of streets, roads and squares, lighting of streets, squares and other territories meant for public use, arrangement and maintenance of parks, squares and green zones, supervision over industrial waste collection and withdrawal, antiflood measures, establishment and maintenance of cemeteries and burial sites for dead animals),
- determine procedures of use of publicly used forests and waters.

According to the Law "On Pollution" municipalities implement necessary caution measures for prevention or, if impossible, reduction of environmental pollution or its risk, as well as accident risk.

The Cabinet Regulations "Procedures of Exploration and Registration of Polluted and Potentially Polluted Sites" provide for municipalities to submit the programme for exploration of polluted and potentially polluted sites, including objects to be explored, methods and terms of exploration, work expenses, and stating registration procedures of polluted sites, to the regional environmental administration for approval. Municipalities provide their funding from available receipts of the natural resources tax, or submit an application for necessary funding to the Environmental Protection Fund.

According to the Law "On Bowels of the Earth" area and city municipalities issue permissions for use of frequently found mineral deposits within annual quotas and limits, and supervise recovery of mineral deposits within the scope stated by the Ministry of Environment in their administrative territories. Expenses for fulfilment of functions imposed upon municipalities are covered from the fees received for permissions for use of bowels of the earth. Upon approval by the Ministry of Environment, district, city and area municipalities may implement local measures for protection and supervision over use of bowels of the earth.

The Law "On the Natural Resources Tax" provides for tax receipts to be included in special municipal budgets for environmental protection. 60% of tax payments for acquisition of natural resources or environmental pollution and 100% thereof in case of hazardous waste incineration are included in special budgets for environmental protection of area or city municipalities, in whose territory respective activities are carried out.

Planning documents related to use of the European Union co-funding, as well as amendments to planning documents worked out or adopted by a municipality require strategic assessment of the environmental impact. The Law "On Assessment of the Environmental Impact" provides for the applicant to submit a final conclusion and a report of the authorised institution on such final conclusion together with documents stated in other standard documents, to the respective state institution or municipality in order to receive the permission for starting up activities envisaged. The municipality makes comprehensive assessment of the final conclusion and the report of the authorised institution, as well as takes into account the opinion of state authorities concerned and the public, and makes a decision on acceptance or refusal of activities envisaged.

The local municipality puts it up in the local municipality building and in other public places, as well as publishes the same in one of the local newspapers within two weeks upon making such decision at the latest.

In order to improve air quality at sites where the pollution level exceeds the established air quality standards, the local municipality may work out and implement a short-term agenda for reduction of air pollution (the Cabinet Regulations „On the Air Quality"). The local municipality in co-operation with the Ministry of Environment works out and implements such agenda within two years after the limit values have been exceeded at the latest. Municipalities supply the public and the Latvian Environmental Agency with information on agendas, as well as short-term programmes worked out by municipalities, and their implementation, putting up such programmes and information on their implementation in the municipality home page in INTERNET too.

According to the Waste Management Law, area and city municipalities perform the following activities in their administrative territories:

- organise municipal waste management and working out respective plans,
- make decisions on placement of new municipal waste treatment objects and landfills,
- issue statutory regulations of municipal waste management, as well as procedures of making payments for such waste management.

The Law on Protected Belts provides for all types of protected belts to be stated in territory planning of local municipalities in keeping with requirements of standard acts. Borders of protected belts are to be marked in land plot plans and entered in the Land Registry. General limitations in protected belts are stated by standard acts, however the same may also be stated by binding municipal regulations issued within their competence.

According to the Territory Planning Law, territory planning of district municipalities refers to the entire territory of the district municipality. The same is worked out according to:

1) the development programme and territory planning of the planning region of the respective municipality,

2) the policy planning documents and territory planning of the district municipalities bordering on the respective district municipality,

3) the policy planning documents of the respective district municipality.

Territory planning of the local municipality refers to the entire territory of the local municipality. The same is worked out according to:

1) the policy planning documents and territory planning of the district municipality of the respective municipality,

2) the policy planning documents and territory planning of the local municipalities bordering on the respective local municipality,

3) the policy planning documents of the respective local municipality.

Detailed planning of the local municipality refers to the planning territory stated in the decision of such local municipality, the same being worked out

according to the territory planning of the local municipality or as a basis of amendments to the territory planning of the local municipality.

4.25.3. Other institutions

Structural units of responsible ministries, as well as scientific institutions and higher educational establishments, professional and public organisations, commercial enterprises and public sector authorities will be involved in fulfilment of specific tasks on a wider scale. Co-operation with the following institutions is of special importance:

- the Ministry of Foreign Affairs performing activities within its competence for the UN conventions and other international treaties to enter into effect in the territory of this country, as well as co-ordinating elaboration of the country's stand and information circulation in issues of the European Union,
- the Ministry of Economics for coordination of new state and branch development programmes and plans with the National Environmental Policy Plan,
- the Ministry of Health in order to find correlation between environment and health resulting in possible reduction of environmental risk factors, limitation of occupational diseases and increase of life duration,
- the Ministry of Regional Development and Local Governments for requirements of environmental standard acts to be adequately included in planning, and for the state environmental policy to be implemented at the local level,
- the Ministry of Agriculture for requirements of environmental protection to be included in standard acts of the rural development and agricultural industry,
- the Ministry of Transport and Communications for coordination of branch development programmes and plans with the National Environmental Policy Plan.

The following measures will be implemented at the inter-ministry level and the level of other institutions:

- to establish pre-conditions for ministries, whose activities are related to environmental impact, to add environmental protection or sustainable development units to their institutions,
- to promote establishment of inter-ministry work groups or permanent commissions competent to resolve topical environmental protection issues and to approve long-term strategic documents,
- to assure that annual reports of environmental condition should be submitted to ministries and central state authorities with respective recommendations for working out further draft decisions,

- to recommend that state planning regions and municipalities should take into account reports on results of analysis of environmental condition in their work.

4.25.4. Voluntary methods for environmental protection

The alternative to administrative measures is establishment of a system of voluntary preventive measures in each institution, organisation or enterprise, whose activities are related to the impact on environment.

Creative and systemic approach of enterprises to settlement of environmental issues according to requirements of standard acts establishes a basis for preventive actions aimed at decrease of environmental risk. Currently enterprises mainly fulfil requirements stated in standard acts passively, by paying taxes stated in standard acts for contamination caused or use of natural resources, within terms specified.

It is better for the society to support enterprises, which carefully work out plans for decrease of environmental damage over a longer period of time and implement them on a regular basis, and apart from that have declared their intentions officially, undertaking responsibility for their implementation too. Such approach is more concessive with regard to the polluter, measures are implemented on a voluntary basis, and results are generally much better.

The National Environmental Development Plan supports wider use of the precautionary principle in environmental protection. Without doubt, this will be related to improvement of supervision over the declared measures, as well as to legal acceptance of such measures in standard acts.

Every form of commercial activities and individual activity may have an impact on environment. The number of enterprises choosing voluntary means of environmental policy (environmental management and audit systems, ecological marking, analysis of products circulation and manufacturing of environmentally friendly products and rendering services) increases fast. Until 2002 28 enterprises in Latvia received ISO 14 001 certificate of the environmental management standard, and 233 enterprises received ISO 9001:2000 Certificate of the quality control system over the period from 1995 to 2002. Until 2002 forest properties of the area 17 thousand hectares were certified according to the European Forest Certification System (EMSS), and seven enterprises received timber supply certificates according to the European Forest Certification System. Certification of state-owned commercial forest areas will be finished soon. In the future increase of certified forest areas will depend mainly on the scope of certification of private forest management.

In Latvia generally manufacturing of biological agricultural produce develops, a total of over 200 farms being involved in such manufacturing, making approximately 0.2% of the total number of farms and covering 0.6 % of the agriculturally usable area.

The National Environmental Policy Plan supports implementation of such voluntary and preventive environmental protection measures. Over validity of the National Environmental Policy Plan:

- experience of voluntary measures will be analysed in the European Union countries,
- conformity of their competence to general environmental protection standard acts and possibilities of voluntary methods application will be discussed with entrepreneurs,
- additional work will be implemented with enterprises of higher environmental risk (manufacturing or use of hazardous chemical compounds),
- co-operation of local manufacturers and service vendors with certification organisations will be promoted (Environment Management and Audit System, ISO 14000, ecomarking commissions or councils).

V. REPORTING AND ASSESSMENT PROCEDURES

The Ministry of Environment co-ordinates implementation of the National Environmental Policy Plan for 2004 – 2008.

Starting from 2004, responsible ministries shall submit reports on achievement of goals stated in and implementation of measures of the National Environmental Policy Plan to the Ministry of Environment until 1 October on an annual basis.

The link of fulfilment of priority tasks with funds for the following period shall be specified together with making the draft budget over implementation of the National Environmental Policy Plan, however at least once a year.

APPENDICES

Abbreviations

AIM –the Ministry of Defence
ANO – the United Nations Organisation
ĀM – the Ministry of Foreign Affairs
BO VAS – the Non-Profit Organisation State Joint Stock Company
BO VSIA – the Non-Profit Organisation Limited Liability Company
DAD - the Ministry of Environment Department of Nature Protection
DAP – the Ministry of Environment Nature Protection Board
EM – the Ministry of Economics
ERAF – the European Regional Development Fund
ES – the European Union
FM – the Ministry of Finance
HELKOM –the Helsinki Convention - Baltic Marine Environment Protection Helsinki Convention Commission (HELCOM – Helsinki Commission)
ĪADT –specially protected nature territories
IEM –the Ministry of the Interior
IVNVB – the State Environmental Impact Assessment Bureau
IZM – the Ministry of Education and Science
JVP – the Ministry of Environment Marine Environmental Board
ĶNP - Kemeri National Park
ĶVRNA –REACH – Registration, evaluation, authorization of chemicals
LHMA – the Latvian Hydrometeorological Agency
LIFE – the financial instrument for the environment and nature protection project support
LLAP – SAPARD - the European Union Special Assistance Programme for Agricultural and Rural Development
LLU – the Latvia University of Agriculture
LM – the Welfare Ministry
LPC – the Latvian Food Centre
LU – the University of Latvia
LVA – the Latvian Environment Agency
LVM – the State Joint Stock Company "Latvijas Valsts meži" [Latvian State Forests]
LZA – the Latvian Academy of Sciences
LZPI – the Latvian Fisheries Research Institute
MMB – the Hunters and Fishermen Union
NBS – the National Armed Forces
P - municipalities
PHARE – the name of the programme comes from names of two countries – Poland and Hungary Action for the Restructuring of the Economy
PLO – the United Nations Food and Agriculture Organisation – FAO

PVF – the Global Environment Fund - GEF
RAPLM – the Ministry of Regional Development and Local Governments
RDC – the Ministry of Environment Radiation Safety Centre
RTU – Riga Technical University
RVP – the Ministry of Environment Regional Environmental Boards
SJPP - the International Marine Research Council
SM – the Ministry of Transport and Communications
SO – public organisations
SPBS – PPP - Public Private Partnership
SPPFI – the European Union Instruments for Structural Policy for Pre-Accession - ISPA
SPR – public service regulators
SSO 9000 – the International Standardization organization – ISO – quality standard series
SSO 14000 – the International Standardization organization – ISO – environment quality standard series
SVA – the Public Health Agency
TAVA – the Latvian Tourism Development Agency
TC SIC – the Toxicology Centre Poisoning Information Centre
TM – the Ministry of Justice
UBP – the State Geology Service River Basin Department
VAAD – the State Plant Protection Service
VAK – the Environment Protection Club
VDI – the State Labour Inspection
VĢD – the State Geology Service
VIDM – the Ministry of Environment
VIP – the State Investment Programme
VM – the Ministry of Health
VMD – the State Forest Service
VPAS – the Environment management and audit scheme – EMAS
VR – the State Border Guard
VSI – the State Sanitation Inspection
VUGD – the State Firefighting and Rescue Service
VVI – the Environmental State Inspectorate
VZP – the State Fishery Department
ZBR – the North Vidzeme Biosphere Reserve
ZM – the Ministry of Agriculture

Vides ministrs	Valsts sekretārs	Juridiskā departamenta direktors	Par kontroli atbildīgā amatpersona	Atbildīgā amatpersona	Par politikas plānošanu un koordināciju atbildīgās ministrijas struktūrvienības vadītājs
R. Vējonis	G. Puķītis	E. Puriņš	K. Šlesere	J. Zaļoksnis	M. Klismets

02.02.2004. 13:20
287 641

Janis.Zaloksnis@vidm.gov.lv

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