

NATIONAL ENVIRONMENTAL PROTECTION STRATEGY



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NATIONAL ENVIRONMENTAL PROTECTION STRATEGY

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In the environmental sector, there has been an essential need for setting out long-term guidelines for the environmental protection policy. The longer the term of those guidelines, the more efficient, targeted and sustainable solutions could be sought out for solving the environmental challenges, while, at the same time, addressing social well-being and the country's progress.

The National environmental protection strategy up to 2030 highlights the four long-term priority areas of the environmental protection policy: sustainable use of natural resources and waste management, improvement of the quality of the environment, maintenance of ecosystem stability, climate change mitigation and adaptation. Achieving the objectives for 2030 in these areas requires our joint efforts in responsible and sustainable production and consumption, waste management, protection of our nature, fostering and preservation of environment.

I cordially invite everyone to contribute actively in attaining a healthy, clean and safe Lithuanian environment, which is our greatest treasure, essential both for our and future generations.

Kęstutis Trečiokas

Minister of Environment of the Republic of Lithuania



SEIMAS OF THE REPUBLIC OF LITHUANIA

RESOLUTION ON THE APPROVAL OF THE NATIONAL ENVIRONMENTAL PROTECTION STRATEGY

16 April 2015 No XII-1626
Vilnius

Pursuant to Article 5(2) of the Law of the Republic of Lithuania on Environmental Protection, the Seimas of the Republic of Lithuania hereby **r e s o l v e s**:

Article 1.

To approve the National Environmental Protection Strategy (appended).

Article 2.

To repeal Resolution No I-1550 of the Seimas of the Republic of Lithuania of 25 September 1996 on the Approval of the State Environmental Protection Strategy.

Speaker of the Seimas

Loreta Graužinienė

CHAPTER I

C H A P T E R I

APPROVED
by Resolution No XII-1626
of the Seimas of the
Republic of Lithuania of 16 April 2015

NATIONAL ENVIRONMENTAL PROTECTION STRATEGY

C H A P T E R I

GENERAL PROVISIONS

1. The State Environmental Protection Strategy approved by Resolution No I-1500 of the Seimas of the Republic of Lithuania of 25 September 1996 on the Approval of the State Environmental Protection Strategy covered the most pertinent

environmental issues, key areas and objectives of that time and the period of implementation of the Strategy, as well as the environmental protection policy principles, processes of integration into the European Union (hereinafter ‘the EU’) and



measures for implementing the Strategy. The majority of measures provided in the Strategy have been implemented in a targeted way. During this period of time, the national geopolitical situation changed, viz. Lithuania joined the EU and became its full-fledged member shaping and implementing the EU environmental protection policy; the country also underwent demographic, economic and environmental changes, and new factors affecting the environment and natural resources management emerged. The previous environmental protection policy that dealt with individual environmental problems currently demonstrates a lack of effectiveness as the increasing global environmental pollution and the growing exploitation of natural resources have necessitated a gradual transition to a broader and more inclusive and integrated environmental protection strategy of a new quality.

Over the last eighteen years, the environmental pollution of Lithuania has been steadily decreasing, and the attention has been increasingly shifting toward the environmental quality and securing the rights of society to a safe and clean environment, viz. the public services of drinking water and wastewater treatment as well as the municipal waste management have been developing rapidly, the quality of these services has been improving, and the forest coverage of Lithuania as well as the volume of stands have been increasing consistently. In terms of heavy metal content in the soil and of the ambient air quality, Lithuania is one of

the cleanest countries in Europe. Lithuania is one of the few countries in Europe and worldwide where the population exclusively consumes groundwater.

Despite economic growth, greenhouse gas emissions have been declining over the last decade, and significant improvements have been also achieved in other environmental sectors.

Nevertheless, changes in the environmental status show that there remain a number of issues that still need to be addressed, viz. approximately 77% of municipal waste (the majority of which is suitable for recycling or energy production) is still being disposed in landfills, while the Curonian Lagoon (transitional waters), the Baltic Sea coastal zone, approximately 2/3 of Lithuanian rivers and approximately 1/3 of lakes still do not meet the good water status requirements. In major cities of Lithuania (Vilnius, Kaunas, Klaipėda, Šiauliai and Panevėžys), the threshold values of particulate matter (PM₁₀) in ambient air are often exceeded, while the threshold values of benzo(a)pyrene in ambient air are constantly exceeded. Sub-optimal structure of land use, self-contained renaturalisation of landscape, uncontrolled urban sprawl, etc. have led to the degradation of landscape, deterioration of soil quality and decline of biodiversity and ecosystems in several regions of the country. Furthermore, the cumulative impact of anthropogenic activities on ecosystems, the benefits of anthropogenically non-affected ecosystems and the cost of future losses have not been duly assessed yet.

Urbanisation processes in Lithuania are still not fully compliant with the principles of sustainable development. The growth of Lithuanian economy, increased consumption along with the depletion of natural (non-renewable) resources and the tightening of international and EU requirements to limit and/or reduce environmental pollution create the need for taking innovative and efficient environmental measures, especially in the most urbanised areas, and improving energy efficiency, in particular in multi-apartment buildings and public premises.

2. The National Environmental Protection Strategy (hereinafter ‘the Strategy’) has been drawn up in order to define the priority areas of the environmental protection policy, long-term objectives up to 2030 and a vision for the Lithuanian environment up to 2050. The Republic of Lithuania has adopted strategic documents of different levels and nature, which lay down environmental objectives, targets and implementing measures in certain sectors; therefore, one of the aims for drawing up the Strategy was to establish horizontal long-term environmental objectives that would help the politicians, government and business representatives, social partners and society to choose a more precise line of action. For the purposes of this Strategy, the underlying environmental policy objective is to attain a healthy, clean and safe environment in Lithuanian, which would address the needs of society, environmental protection and the economy in a sustainable way.

3. The Strategy will contribute to the

development of the green economy in Lithuania and the implementation of the goals of the 2012 United Nations Conference on Sustainable Development (Rio+20) and a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’, while at the same time retaining the key long-term goals of the Lithuanian environmental protection policy, and will serve as the basis for the environmental pillar of Lithuania’s sustainable development that helps to integrate the long-term environmental protection objectives into other policy areas.

4. The Strategy covers four priority areas of the environmental protection policy, viz. the sustainable use of natural resources and waste management, improvement of the quality of the environment, maintenance of ecosystem stability, mitigation of climate change and adaptation to environmental changes caused by climate change. Pursuant to Article 3(3) of the Law of the Republic of Lithuania on Financial Instruments for Climate Change Management, the climate change management policy shall be provided by the National Strategy for Climate Change Management Policy.

5. The Strategy consists of seven chapters, viz. ‘General Provisions’, ‘Principles of Environmental Protection Policy’, ‘Priority Areas of Environmental Protection’, ‘Lithuanian Environmental Vision’, ‘Objectives of Environmental Protection Policy’, ‘Implementing Measures of the Strategy’ and ‘Final Provisions’.

CHAPTER II

C H A P T E R II

C H A P T E R II

PRINCIPLES OF ENVIRONMENTAL PROTECTION POLICY

6. The assessment of the environmental status and challenges of Lithuania enables the key principles that form the basis of the Strategy to be established. A clean, healthy and safe environment will be achieved on the basis of sustainable development of the state, i.e. by shaping the economic and social development of Lithuania so as to ensure that meeting today's needs does not reduce the chances of future generations to meet their needs.

The legal framework and the economic system will be improved so as to avoid any conflict between the growth of Lithuanian economy and the anthropogenic load on the environment. Sustainable development will be achieved by following the key principles of the environmental protection policy:

6.1. Eco-efficiency. Efforts will be made to ensure that the use of natural resources grows at a slower rate than production or



services, i.e. to ensure that increasingly less energy or other natural resources are used to produce the same quantity of articles or provide the same number of services;

6.2. Pollution prevention. Efforts will be made to prevent environmental pollution before it even begins, as the costs of remedying environmental damage are almost always higher than those of preventing damage (pollution prevention), and sometimes it is not even possible to remedy damage and restore the environmental status. The prevention of waste generation will be promoted, and its efficient application will have an impact not only on the reduction of waste, conservation of natural resources, improvement of the quality of the environment and the use of waste as a resource but also on the increase of the efficiency of production and other waste-generating economic activities;

6.3. Responsibility ('polluter pays principle'). Efforts will be made to ensure that the costs of and responsibility for the restoration of an impoverished and polluted environment are shared not by all the citizens of the country but by those who benefit from it or are users of natural resources, i.e. the costs of pollution remedies should be paid by a respective polluter, except where such a polluter cannot be identified or where, pursuant to EU or national legislation, such a polluter cannot be held liable for pollution or be forced to pay restoration costs;

6.4. Rectification at source. Environmental damage should be rectified at source.

Efforts will be made to ensure that all possible environmental protection measures are taken as soon as possible after the manifestation of adverse consequences and as close as possible to sources of pollution causing such adverse consequences;

6.5. Integration of the environmental protection policy. To ensure sustainable development of Lithuania, environmental measures should form a part of the process of development of territories and all sectors of the national economy, and they cannot be separated from this process. This needs an integrated approach, i.e. sectors of the national economy (transport, industry, energy, construction, agriculture, housing, tourism, healthcare, etc.) should be developed so as to minimise any adverse environmental impact and maximise eco-efficiency of these sectors by including environmental measures into strategic documents for the development of these sectors. Efforts will be made to ensure close cooperation of economic sectors and coordination of activities when addressing issues such as climate change, reduction of air pollution, conservation and improvement of natural resources and the quality of the environment, waste reduction and preservation of landscape and biodiversity;

6.6. Use of the best available technologies. Efforts should be made to use the most environmentally advanced, efficient and available technology wherever possible, even if the established limits and rates are not exceeded. In order to reduce the risks to the environment and humans

and simultaneously increase production efficiency, the implementation of cleaner production principles and low-waste technology will be promoted, especially in the use of natural resources, waste management, recycling, etc., and in the process of soil remediation;

6.7. Precaution. It is often not possible to predict the effects of human activity on the environment. To protect the environment, the state, wherever possible, should apply the precautionary principle. If a risk of irreparable damage emerges, the most expensive measures to prevent deterioration of the environment are justifiable. The application of the precautionary principle should be based on the study of the area, forecasting, consistency and caution when predicting the consequences. In case of any scientific doubt, appropriate (precautionary) assessment procedures are applied and preventive actions are taken in order to avoid damage to the environment;

6.8. Substitution. Efforts will be made to ensure that substances hazardous to humans and the environment are replaced with non-hazardous substances and non-sustainable resources with clean or less polluting renewable resources, while waste generated is returned for reuse, recycling or other uses (such as power generation);

6.9. Subsidiarity. This principle means the strengthening of democracy and partnerships in decision making and implementation processes. Problems which cannot be resolved locally should be addressed at a higher level. Efforts will

be made to assist local communities with taking care of their environment, enhance the value of programmes and actions at local level and increase opportunities for the choose of actions and measures for dealing with local environmental problems. The principle of subsidiarity acknowledges that environmental problems and opportunities can be very different in each region; therefore, the environmental protection policy should take this aspect into consideration;

6.10. Partnership and shared responsibility.

The aim of sustainable development can only be achieved if all stakeholders act united and cooperate (including public authorities, international organisations, local authorities, non-governmental organisations, national economic sectors (through their associations), businesses, consumers, members of the public, etc.). Each partner shall acknowledge its responsibility for the implementation of the environmental protection objectives and shall use available measures. Building partnerships through shared responsibility is a major challenge that can only be solved by acknowledging the diversity of views and respecting different interests and reasoned group opinions;

6.11. Public participation and information.

Efforts will be made to increase public participation in decision-making, promote education and raise public awareness and expertise on environmental issues and inform the public about their environmental impact and options for more sustainable *modus operandi*.

CHAPTER III

C H A P T E R I I I

C H A P T E R I I I

PRIORITY AREAS OF ENVIRONMENTAL PROTECTION

7. The assessment of the Lithuanian environmental status and challenges allows defining four priority areas of environmental protection in Lithuania, which are interrelated but require different actions:

7.1. Sustainable use of natural resources and waste management;

7.2. Improvement of the quality of the environment;

7.3. Maintenance of ecosystem stability;

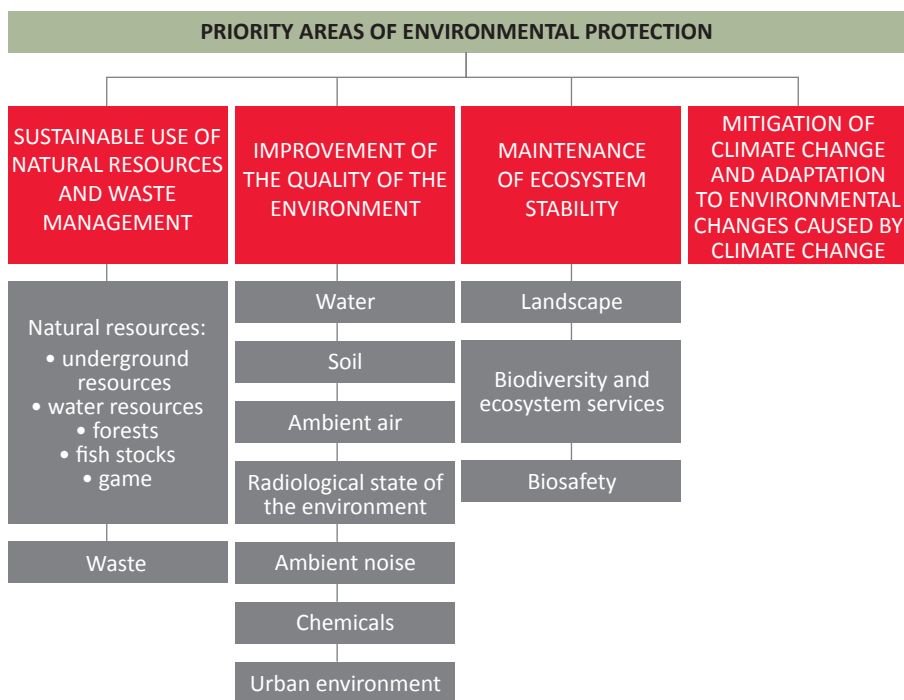
7.4. Mitigation of climate change and adaptation to environmental changes caused by climate change.

8. This Strategy will not discuss the climate change management policy as, pursuant to Article 3(3) of the Law of the Republic of Lithuania on Financial Instruments for Climate Change Management, this policy is provided for in the National Strategy for Climate Change Management Policy.

(Figure 1.).



Figure 1. Structure of priority areas of environmental protection



CHAPTER IV

CHAPTER IV

C H A P T E R IV

LITHUANIAN ENVIRONMENTAL VISION

9. In 2050, Lithuania will have:

9.1. Formed optimal use of nature in compliance with the principles of sustainable development. The Lithuanian well-being and environment are developed on the basis of the competitive green economy that rests on knowledge and innovation: the growing economy no longer has an adverse environmental impact (growth of production and services will not increase the demand for natural resources),

while the use of natural resources and the territory is rational. Populations of game and fish stocks as well as other natural systems are stable. Lithuanian forests are a natural integral part of the Lithuanian landscape, characterised by health, biodiversity, productivity and sustainability and satisfying all ecological, economic and social needs of the public based on the principles of sustainable development. Waste is managed as a resource. Total waste generated per



capita is in decline in Lithuania. The majority of waste materials are recycled. Energy recovery is limited to non-recyclable material; disposal in landfills is eliminated and high quality recycling as well as other types of use are ensured.

9.2. Achieved and maintained an environmental status that is in line with the environmental quality standards as well as international and EU commitments. Environmental pollution poses no threat to human health or the environment throughout the country. Good quality of the geological environment is maintained. The status of groundwater, inland surface water bodies, the Curonian Lagoon and the Baltic Sea is good, while point or diffuse source pollution is reduced to a minimum. The Lithuanian population is provided with high quality drinking water, and proper wastewater collection and management is ensured. Urban areas and industrial facilities are developed mostly in historically formed urban or restored territories rather than in natural forest or agricultural areas. Soil degradation and contamination is reduced; degraded soil is restored, where possible. The pollution and quality of ambient air in Lithuania is assessed in accordance with international and EU requirements, the pollution does not exceed limit values, and the quality of air is in line with the standards and poses no risk to human health or the environment. The use of hazardous chemicals and their impact are reduced (hazardous chemicals are replaced with less hazardous alternatives). The harmful effect of noise on the population and the environment is decreasing. The radiological status of the environment

is good: radiological pollution of inland water bodies and air is stable, while that of the Baltic Sea is decreasing.

9.3. Maintained ecosystem stability. Biodiversity and ecosystem services are protected, assessed (benefits of ecosystems unaffected by anthropogenic activities and the cost of future losses are established) and, where possible, duly restored. Landscape areas of various territorial levels and their geoecological potential are preserved. Viable populations of species are located in their natural habitats; the risk of extinction of endangered species is reduced. The optimum area of protected sites is reached. Conservation of genetic resources of microorganisms and wild flora and fauna, actually and potentially useful from the ecological, selection and economic point of view, is achieved. Safe performance of activities that involve the development, processing, use, transmission or release of live genetically modified organisms and microorganisms, which result from the use of modern biotechnology and can have an adverse impact on the preservation of biodiversity and its sustainable use, is ensured.

9.4. Ensured mitigation of climate change (reduction of greenhouse gas emissions). A competitive low carbon economy is developed, eco-innovation based technologies are implemented, energy is generated and used efficiently, and renewable energy resources are involved in all the sectors (energy, industry, transport, agriculture, etc.) of national economy. Ecosystems and sectors of the national economy are adapted to environmental changes caused by climate change.

CHAPTER V

CHAPTER V

C H A P T E R V

OBJECTIVES OF ENVIRONMENTAL PROTECTION POLICY

10. The strategic objective is to attain a healthy, clean and safe Lithuanian environment, which would also meet the needs of the society, environmental protection and economy

in a sustainable way. The assessment criteria provided for monitoring the implementation of the Strategy are annexed to this document.



SECTION ONE

SUSTAINABLE USE OF NATURAL RESOURCES AND WASTE MANAGEMENT

11. The objective of natural resources protection is to ensure a long-term rational and sustainable use and protection of national natural resources of importance to the functioning of the state, as well as the restoration and, where possible, enhancement of renewable natural resources by providing conditions for sustainable economic development.

Underground resources (except groundwater resources)

12. In Lithuania, 17 types of mineral resources have been analysed at different levels, and 9 types of such resources (limestone, dolomite, sand, gravel, clay, chalk marl, peat, sapropel and oil) are open for exploitation. These mineral resources are mostly intended for the building material industry or road building, which are among the most important resources worldwide in terms of their volume consumed and economic value (they come second only to oil, gas and coal). The issue of depletion of limestone, dolomite, gravel, sand, clay, peat of high segmentation or sapropel resources is not very relevant in view of the decline

in their extraction as compared with the period before the restoration of Lithuania's independence; no shortage of any such mineral resources should be felt for at least several decades. However, low-decomposed peat, Devonian clay, mono-mineral silica sand and oil resources are limited; therefore, their extraction should be rational. The increasing volume of construction and road infrastructure works may lead to a shortage of building materials (such as sand and gravel) in certain areas of the country.

Lithuania has limited possibilities for the use of local underground resources, such as extracted oil or energy recovered from chemical processes, for energy needs as the studies and assessments carried out with regard to the use and environmental impact of renewable (e.g. geothermal) resources and diffused hydrocarbons (e.g. clay shale gas) are not sufficient and detailed.

The exploitation of mineral deposits has damaged about 3% of the territory of Lithuania. The majority of areas damaged by previous extraction activities is the result of the exploitation of peatlands. According to the 2012 data of the Lithuanian Geological Survey under the Ministry of Environment, some 10,600 ha of peatlands and 3,000 ha of quarries of building materials are in need of restoration. Unless managed, quarries often become a site of illegal landfills, which due to their steep slopes turn into life-threatening

areas. Failure to manage abandoned peatlands properly often leads to great fires. Furthermore, there are still some areas in Lithuania damaged by the exploitation of quarries that have not had any user for a long time. According to the data of the National Audit Office of Lithuania for 2012, illegal extraction of mineral resources amounts to 10% of legal extraction of mineral resources in Lithuania.

Over the last few decades, karst processes have become more active in Lithuania. Due to the development of karst processes in the karst region of northern Lithuania, both surface effects (with dozens of failures detected each year) and karst effects are monitored as they lead to the loss of agricultural land and economic damages caused by the deformation of structures.

Key policy implementing directions

13. Optimisation of the use of fossil underground resources and reduction of an adverse environment impact. With a view to avoiding an adverse environmental impact of the exploitation of mineral resources and ensuring the optimal utilisation of the economic potential of fossil resources, cleaner, more resource-friendly and sustainable methods of extraction, the use of secondary raw materials and the replacement of non-renewable resources with renewable ones should be promoted. A more efficient

underground resources management system should be developed for that purpose. Efforts will be made to protect unexploited mineral deposits from any development during the spatial planning process by optimising legal procedures for the expropriation of land on grounds of public interest (for exploitation of mineral resources).

14. Reduction of an adverse environmental impact of renewable (geothermal) underground resources used for energy generation. To ensure the safe use of renewable underground resources for energy needs with respect to human health and the environment and simultaneously reduce an adverse environmental impact of the energy sector, new and reliable data that enable a comprehensive assessment of Lithuania's prospects for the future with regard to such resources are required. An economically reasonable system to promote geothermal (hydrogeothermal and petrogeothermal) energy in Lithuania that meets the principles of sustainable development should be created.

15. Reduction of the area of territories damaged by the exploitation of quarries and peatlands. Once all underground resources are exhausted, efforts will be made to rehabilitate quarries and peatlands by restoring, if possible, the previous purpose of land use or upgrading them to more valuable ecosystems; damaged territories should not exceed the area pro rata to the technology and scope of extraction.

To this end, economic and other measures should be employed for the management of the rehabilitation process, more favourable conditions should be created for rehabilitating land plots damaged by the exploitation of quarries; quarries and peatlands should be rehabilitated after companies who own them go bankrupt, and the system of control and prevention of illegal excavation should be strengthened.

16. Assurance of safe exploitation of underground resources. An efficient system for the control of exploitation of underground resources and their protection from pollution should be created, the level of detail, reliability and availability of geological information required for predicting changes in the quality of the geological environment and adopting justified decisions on the extraction of resources, implementation of environmental measures or prevention of undesirable processes should be increased, and adverse geological processes and effects should be analysed and assessed in order to assure the efficient protection of the geological environment. Underground resources and their geochemical, hydrochemical, tectonic and geodynamic characteristics as well as their processes should be studied consistently and the practical application of such knowledge should be developed. Studies and forecasts of karst processes and effects should be carried out with a view to preventing any accidents and

damages caused by karst processes. The study of diffused hydrocarbons requires complex monitoring (of air, soil, groundwater and surface water, and seismological monitoring), the analysis and assessment of information on the chemicals used for hydraulic fracturing, and the promotion of the use of environmentally-friendly materials. A technology for the safe utilisation of liquid used for hydraulic fracturing but no longer suitable for future uses needs to be developed. Diffused hydrocarbons could only be extracted after having full certainty that their extraction would not cause any adverse impact on the environment or humans.

Water resources

17. Water abstraction and consumption has declined significantly in the country over the recent years. In 2012, approximately 2.92 billion m³ of water (4.58 billion m³ in 1995) was abstracted, including 4.5% (120.5 million m³) from underground sources (more than 300 million m³ in 1995). The decline has been mostly influenced by the decommissioning of the Ignalina Nuclear Power Plant.

The Kruonis Pumped Storage Plant and the Lithuanian Power Plant are the major users of surface water. Therefore, the largest volume of water is used in the energy sector. According to the 2012 data, 93.4% of the total abstracted water was used for energy needs, 1.46% for industrial needs, 3.07% for economic

and household needs and 1.91% for fish ponds. Lithuania has 94 operating hydro power plants, of which 57 have a significant impact on water bodies, as ecosystems of inland water bodies are adversely affected by frequent and sudden changes in the temperature and level of water, insufficient spillways for migratory fish and the operation of turbines that cause big damages to fish stocks. The improper use of water resources for fisheries, navigation, construction and operation of hydraulic structures, water abstraction, recreational and other purposes may have an adverse impact on water resources and ecosystems of water bodies. Pursuant to the Roadmap to a Resource Efficient Europe (COM (2011) 571 final), with due consideration to the EU practice, water efficiency could be improved by 40% through technological improvements alone. In Lithuania, a great drinking water saving potential lies in the modernisation of water supply infrastructure where, according to the data of the Ministry of Environment of the Republic of Lithuania (hereinafter 'the Ministry of Environment') for 2010–2011, the loss of water amounts to almost 30%.

Lithuania is one of the few countries in Europe and worldwide where groundwater alone is used for the preparation of drinking water. Groundwater is the main source of drinking water in Lithuania, and only small amounts of this water are used (in 2013, 12% of available resources

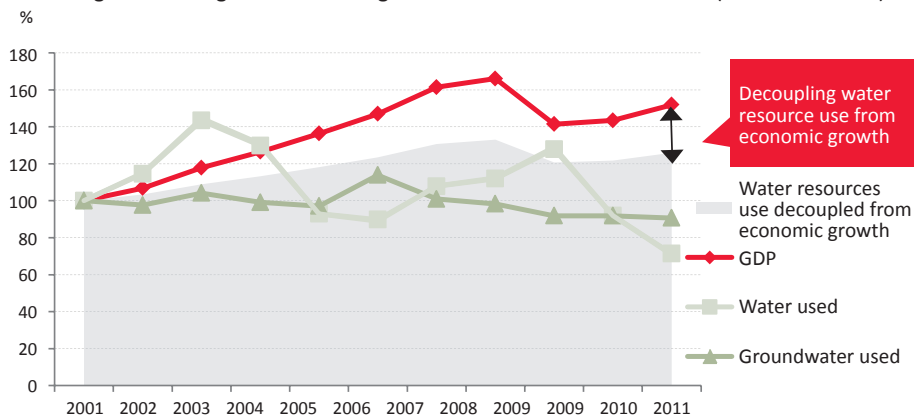
were extracted). The total groundwater resources available in the territory of the country assessed in 2007–2012 amounted to 3.72 million m³ of water per day. Lithuanian underground mineral resources (the mineral content of which is more varied than that of the usual fresh water and/or which has a certain physiological effect) have been studied only in the major resorts; however, the potential of use of such underground mineral resources in other areas of the country has not been investigated yet. Economically relevant underground industrial water resources (consisting of salt water and mineralized water), from which chemical elements or their compounds can potentially be extracted, have not been investigated in Lithuania either.

Key policy implementing directions

18. Promotion of a rational use of water resources. The growth rate of the use of water resources that is twice slower than that of production or services should be ensured by promoting cleaner, more resource-friendly and sustainable methods of extraction, recycling of water, and by establishing economic measures that support a rational use of water resources. The major water saving potential lies in the energy, industrial, agricultural and household sectors (*Figure 2*).

19. Conservation of groundwater resources. In order to conserve all

Figure 2. Changes in economic growth and water use in Lithuania (Index 2001=100)



Source: Statistics Lithuania.

types of groundwater resources, their research, assessment, approval and accounting should be improved, sources of groundwater pollution should be registered, and the monitoring, exploitation and pollution prevention control system for these resources should be improved.

Forests

20. The forest coverage of Lithuania is increased with consistency. In 2012, forests covered 33.3% of the territory of the country, which was slightly higher than the European average. For ensuring better ecosystem stability, the national forest coverage should be at least 35%. The active farming of fertile land in certain regions and restrictions applicable to the afforestation of fertile land have led to an uneven territorial

distribution of forests in Lithuania (e.g. the forest cover of Varėna region exceeds 66%, while that of Vilkaiviškis region is 9.1%).

Over the last decade the percentage of coniferous woods in the forests of Lithuania has declined by 3.6% and the share of deciduous trees has shrunk by 0.8%. Even though 20% of Lithuanian forests are suitable for oak woods, oak trees make up a mere 2% of the forest area. Over the last decade the average volume of timber in Lithuanian forests has increased from 224 m³/ha to 237 m³/ha; however, the intermediate use declined from 32% to 28% of the total volume increment, while the unused part from natural losses increased from 16% to 19%. Due to the low volume of harvesting of overmature stands in commercial forests, a part of timber suitable for

use remains unused, the quality of timber is declining, the forest cultivation losses are growing, and the conditions for efficient future exploitation of forest resources are deteriorating. No economic and commercial activities are performed in forests reserved for the restitution of property rights; the timber potential accumulated in such forests is essentially not used; therefore, the use of national forest resources is not rational.

The increasing areas of private forests result in the growing importance of sustainable management of such forests. Small holdings (the average of 3.3 ha) of private forests owned by a large number (of approximately 244,000) of owners who are usually engaged in individual activities (in Lithuania, a mere 2% of all forest owners are members of organisations that unite and represent forest owners) prevail. In many cases a small forest holding is a secondary source of income for the owner; therefore, forest owners often have insufficient motivation for logging and supplying timber to the market. In particular, they are not keen on investing into the activities (reafforestation, maintenance of trees and shrubs, forest cultivation, development or maintenance of forest road infrastructure, etc.) that yield low profits and pose a higher risk of financial loss. Lithuania practically has no system for uniting holdings of private forest owners or an incentive scheme for their cooperation, which

would create favourable conditions for the improvement of private forest infrastructure, the formation of economically more valuable stands or the increase of timber supply from private forests.

Key policy implementing directions

21. *Conservation and increase of forests and forest resources.* Efforts will be made to increase the forest coverage to 35% of the territory of the country by 2030. This will help to ensure the ecological balance of the country, protect the habitat of forest fauna and flora species, stop soil erosion, purify the air, reduce greenhouse gas emissions in the atmosphere and protect underground and surface water. To increase the forest coverage, the potential of lands not used or not suitable for farming should be utilised (according to the data of the Land Fund of the Republic of Lithuania, there were 149,400 ha of such land in the country as of 1 January 2014), the land reform should be completed, EU financial incentives for afforestation should be used rationally, a smooth transfer of free state land of the Land Fund to managers of state forests for the purpose of afforestation should be ensured, and legal restrictions on the afforestation of fertile land should be dealt with in a rational way, thereby providing preconditions for increasing the eco-stability of regions with lower forest coverage. In order to conserve

and increase forest resources in Lithuania, reforestation on the genetic and ecological basis using quality forest reproductive material valuable in terms of selection should be developed, the cultivation of forest reproductive material should be optimised with a view to supplying the market with quality forest planting stock in the long term, and proper protection of forests from the spread of diseases, pests or fires should be ensured.

22. Conservation and formation of sustainable forest ecosystems. For the forest to provide comprehensive benefit to society, forest biodiversity should be preserved, landscape stability should be increased, the quality of the environment should be improved and the sustainability of forest ecosystems should be enhanced. For this purpose, additional forestry measures that are close to nature should be applied, non-clearcutting should be promoted, and the regulation of the implementation of forestry measures in separate forest groups and protected areas should be improved.

23. Assurance of rational exploitation of forest resources. All forest cutting should ensure that the quantities of timber harvested do not exceed its increment in all forests of Lithuania; the extent of intermediate, sanitary and final fellings should be coordinated, the scale of the use of small unmerchantable wood and timber offcut for the production of biofuel should be increased, economic and commercial activities should be

renewed in all forests reserved for the restitution of property rights, and measures to increase the economic efficiency and competitiveness of private forests should be promoted. The balanced development of the wood industry based on national forest resources, the balanced development of renewable energy and the use of wood raw material resources for the production of items with the highest value added should be encouraged.

Fish stocks

24. Fish stocks form an important part of the Lithuanian biodiversity, recreational and food resources. In Lithuania, much attention is paid to restocking fish and replenishing fish stocks. Each year, plans (programmes) for fish stocking in non-leased state water bodies are drawn up, 50 to 200 million of larvae and juvenile fish of various valuable and endangered species are released into inland water bodies. Fish should also be stocked by users of fishing areas, and works to improve the conditions for migratory fish should be performed. The status of fish colonies is improving; however, it is still not satisfactory: last year, the salmon stock increased ten times, yet it is still 50% below the potential river efficiency, similarly to the sea-trout. The greatest damage to the stocks of salmon sea-trout and other protected species came from the dam of the Kaunas Hydroelectric Plant, which completely blocked the passage for fish to the

spawning grounds located in the upper reaches of the Nemunas in 1959. Before commencing the construction of the Kaunas Hydroelectric Plant, no less than a half of all salmon and sea-trout arriving to Lithuanian rivers used to spawn in the upper reaches of the Nemunas. The Atlantic sturgeon that disappeared at the beginning of the 20th c. has not been restocked; the eel and nase are disappearing rapidly, the number of carnivorous species is declining, while the amount of the cyprinid family and low value undersized fish is growing in lakes; the by-catch of protected species amounts to 13% of the catch weight. The status of fish stocks in inland water bodies should be assessed as being average (according to the data of the Ministry of Environment, the fish stock sustainability index is about 0.5). Commercial fishing is intensive in the coastal zone of the Baltic Sea and in the Curonian Lagoon. Commercial fishing in lakes is quite restricted, while in rivers it is limited only to the specialised fishing of eels, lampreys and smelts. Recreational fishing is a prevailing method of using fish stocks in many inland water bodies, and its importance is growing in environmental, economic and social terms. Fish stocks suffer damage from illegal fishing, fishing gear without tools for deterring birds and mammals, and fish-eating birds, viz. great cormorants which, according to scientists, consume more than 500 t of fish each year.

Key policy implementing directions

25. Assurance of the sustainable use of fish stocks. Efforts will be made to ensure the sustainable use of fish stocks, required for the sustainable functioning of ecosystems of inland water bodies. For this purpose, the control of the use of fish stocks should be strengthened, fishing methods and gear should be improved, detrimental fishing methods should be abandoned, rational fish stocking in inland water bodies should be ensured, and the population and habitats of the great cormorants should be controlled efficiently.

26. Improvement of the status of fish colonies in inland water bodies. Lithuania will make efforts to increase the relative abundance of carnivorous fish species and reduce the relative biomass of low value fish so that good status of fish stocks in inland water bodies is achieved 2030 (the fish stock sustainability index should be at least 0.64). For this purpose, additional restrictions should be applied to fishing areas, time and gear, and fishing control should be enhanced.

27. Restocking and/or increase of valuable fish stocks. Efforts will be shown to increase salmon and sea-trout stocks from 50% to 70% of the potential river efficiency, Atlantic sturgeon and nase stocks from 0% to 1-5%, and the stocks of silver eels that have migrated to the sea from the Lithuanian waters from 5 t to 20 t, by 2030. Most attention

should be devoted to the protection of fish migration routes and spawning grounds, the installation of fish migration routes from the coastal zone of the Baltic Sea to the upper reaches of rivers, the proper regulation of fishing and the efficient stocking of valuable fish in inland water bodies.

Game

28. In Lithuania, some 26 to 30 species of animals, including 14 species of mammals, the most important of them being the moose, red deer, roe, wild boar, beaver, wolf, fox and European hare, have been targets of constant hunting over the last decade. Assuring the viability of the game population is important from the social and economic aspects. The status and distribution of the game population is greatly influenced by the regulation of hunting and various anthropogenic effects, such as agricultural intensity, forestry instruments, fragmentation of habitats, destruction of seasonal migration routes, direct disturbance in exceptional seasons (e.g. breeding, extreme winter periods).

Especially abundant populations of hoofed animals that existed three decades ago had a disproportionately high adverse impact on agriculture and forestry. Due to the adopted radical decisions on the control of populations and the unfavourable social and economic changes in rural areas, subsequently such populations

significantly declined. In recent years, the roe and red deer population has become stable and more abundant; however, the moose population is still very scarce, unstable and is growing very slowly.

The current wolf population in Lithuania is optimal and amounts to approximately 250 animals; therefore, wolves do not face extinction. However, wolves are either extinct or scarce in many European countries lying west of Lithuania, and they are under rigorous protection there.

The abundance of the wild boar population has been fluctuating over the recent decades. In 2013, there were 61,800 wild boars; however, according to the data of 2014, the wild boar population was reduced to 22,300 through intense hunting due to the threat of African swine fever. The abundance of wild boars depends on the agricultural intensity in the country and individual regions. Too many wild boars may lead to the spread of dangerous diseases and have an unacceptably adverse impact on certain protected flora and fauna species (e.g. ground-nesting forest gallinaceous birds) or natural habitats.

The current European beaver population in Lithuania is extremely abundant and will probably continue growing in the future due to the capacity of this species to expand by occupying new habitats. The impact of beavers on ecosystems is ambiguous: by settling on agricultural land in use and in forests, beavers

undermine the economic interests of users of such agricultural land and forest, and they sometimes damage protected natural habitats; however, the positive impact of beavers is seen in the restoration of destroyed habitats of water-related species in reclaimed land and forests, the regulation of surface runoff and the improvement of the quality of groundwater, as well as the reduction of floods in the downstream parts of rivers. Therefore, the beaver population should be regulated with consideration.

The populations of fox, marten and other small rapacious game (including invasive alien species, such as raccoons or American mink) have grown in abundance greatly over the last decade. These species boast good adaptation to the changing environment; however, their rapid increase has also resulted from the decline in their hunting due to the fall of prices in the global fur market. These species cause great damage to hunted and protected ground-nesting bird species and European hares. The number of European hares has significantly declined in certain areas due to the abundance of rapacious game, agricultural changes and insufficiently efficient planning of hunting.

Key policy implementing directions

29. Preservation of the optimal density of the cervidae population. Lithuania

will make efforts to increase the density of the moose population to 1-4 units per 1,000 ha of forest area (by the prevailing forest type). To increase the moose population, the prevention of illegal hunting should be ensured and better principles for establishing bag limits for these animals should be applied (especially the principles of planning the hunting by areas inhabited by basic populations). The density of the red deer population at 6–15 units per 1,000 ha of forest and that of the roe at 15–55 units per 1,000 ha of forest (differentiated by the type of forest) should be preserved. The hunting of the majority of the cervidae animals should be further limited.

30. Preservation of the long-term viability of the wolf population. Even though wolves are currently not an endangered species in Lithuania, the hunting of wolves should still be strictly controlled (the size of the population should be considered and the optimal bag limit should be set) so as to ensure the long-term viability of the population (150-250 wolves in the territory of the country).

31. Optimisation of the use of the populations of wild boars, beavers, other small rapacious game (fox, marten, raccoons, American mink, etc.) and European hares. Legal instruments (establishing an obligation for users of game to compensate damage caused by hoofed animals and beavers) or economic measures (developing instruments to help regulate the

abundance of a population) should be employed with a view to preserving the optimal populations of wild boars, beavers and other small rapacious game that cause great damage to forest and agriculture or protected species and habitats, with due consideration given to the need for minimising the adverse impact of these species and at the same time ensuring their survival in the future. The population of invasive game species (such as racoons and American minks) should be reduced or, if possible, exterminated. Measures for the protection of the European hare population should be implemented in order to achieve its optimal density (10–60 units per 1,000 ha, with due consideration to the biotope quality), and the planning of European hare hunting should be improved.

Waste

32. The objective in the field of waste management shall be to reduce the generation of waste, ensure waste management that is safe for human health and the environment and the rational use of material and energy resources of waste, thereby reducing the use of natural and other resources and the disposal of waste in landfills.

Approximately 5.5 million t of waste is generated in Lithuania annually, of which some 4.1 million t is industrial waste (including about 139,000 t of hazardous waste). Of the 1.4 million t of municipal waste generated annually,

about 50% is biodegradable waste. From 2000 to 2011, the volume of production waste and waste generated by other economic activities increased almost twice, viz. from 2 to 4.1 million t. Half of such waste is disposed in landfills (with 2.1 million t being phosphogypsum waste, which should be subject exclusively to the disposal in a special landfill). In the period of 2000 to 2010, the rate of generation of production waste was slower than the production growth rate only in 2004–2007.

For Lithuania to ensure that the largest possible quantity of municipal waste is recycled or used for energy recovery and that the lowest possible amount of this waste is disposed in landfills, 10 regional waste management systems have been established, and a regional waste management infrastructure (mechanical and mechanical-biological waste treatment facilities, bulky waste sites, green composting sites, etc.) is currently being developed. However, the percentage of recycled or otherwise used municipal waste is growing slowly as a result of inadequate selective waste collection. According to the data of 2011, approximately 77% of municipal waste is still disposed in landfills. The rate of development of municipal waste management systems and collection of recyclable secondary raw materials is insufficient, i.e. duties associated with the organisation of municipal waste management and selective waste collection are basically

not carried out, while the set targets are performed improperly. Therefore, public awareness raising is not developed and people are not keen on collecting or sorting waste as there is a shortage of sorting facilities. Moreover, no incentives are provided to persons who sort their waste and the fact of sorting is not recorded either. Disposal of the majority of waste in landfills still remains the cheapest method of waste management. The greater part of biodegradable waste suitable for recycling or energy recovery is still disposed in landfills. The 'polluter pays' principle and the principle of producer's responsibility are inadequately applied to waste management, which threaten the efficient functioning of the waste management system and the implementation of EU targets.

Key policy implementing directions

33. *Promotion of waste prevention*, with a focus on the prevention of the generation of production waste and waste generated by other economic activities, especially hazardous waste (implementation of an integrated (coherent) product policy; promotion of the implementation of cleaner production and low-waste technology; minimisation of the use of harmful substances in production; promotion of the production of long-life and readily recyclable articles; promotion of voluntary environmental audit;

implementation of environmental management systems; application of the life cycle principle to the manufacture of products; use of preventive measures for the reduction of municipal waste), with a view to preventing the growth of production waste and waste generated by other economic activities, or at least making such growth significantly slower than that of production.

34. *Increase of the preparation of household waste for reuse and recycling.*

For the purpose of the implementation of EU obligations, to achieve that 50% of household waste (paper, plastic, metal, glass) are prepared for reuse or recycling in 2020 (21% was prepared in 2011), and this percentage should be increased further each following year, with a focus on the following:

34.1. Development of the waste sorting infrastructure by implementing the principle of producer's responsibility.

The implementation of the selective waste collection and waste sorting on a large scale would result in increased recyclability of local secondary raw materials and a reduction of waste disposed in landfills;

34.2. Development of the capacity to recycle secondary raw materials;

34.3. Implementation of the certification system for articles and materials resulting from the recycling of waste;

34.4. Education of society about the sorting and recycling of waste and their importance.

35. *Increase of the use of waste for energy recovery with due*

consideration to the potential impact on environmental components, and discontinuation of disposal of waste with energy density in landfills by 2030, i.e. the development of facilities for the use of non-recyclable waste, which remains after the sorting procedure and has energy density, for energy recovery.

36. *Reduction of biodegradable municipal waste disposed in landfills.*

For the purpose of the implementation of EU obligations, to achieve that biodegradable municipal waste disposed in landfills declines from 505,000 t in 2011 to 268,100 t in 2020, and that the disposal of biodegradable municipal waste in landfills is discontinued by 2030, with a focus on the promotion of the composting of biodegradable waste at source; development of biodegradable waste treatment facilities; education of society about the importance of biodegradable waste sorting and composting.

SECTION TWO

IMPROVEMENT OF THE QUALITY OF THE ENVIRONMENT

Water

37. The objective in the field of water protection shall be to ensure a good status of groundwater, inland surface water bodies, the Curonian Lagoon

and the Baltic Sea; also, to ensure that surface water bodies meet recreational needs, while each and every resident of the country has access to drinking water that meets safety and quality requirements.

The Curonian Lagoon (transitional waters), the coastal zone of the Baltic Sea, approximately 2/3 of Lithuanian rivers and about 1/3 of lakes do not meet the good water status requirements. The key factors of human economic activities affecting the status of surface water bodies are point or diffuse source pollution, land reclamation and straightening of rivers, hydroelectric plants and the transboundary pollution load transferred from the neighbouring states. Diffuse pollution, including agricultural pollution, is one of the key factors having an adverse impact on the ecological status of water bodies due to their contamination with nutrients (nitrogen and phosphorus). In the case of point source pollution, the pollution with hazardous substances still remains one of the most important problems, as the volume and sources of such releases into water bodies as well as the status of water bodies with regard to such pollution have not been sufficiently analysed. The pollution of the Baltic Sea is caused not only by pollutants released directly into the Baltic Sea but also by pollutants from river basins. All Lithuanian river basins are transboundary and border on Lithuania's neighbouring states;

therefore, Lithuania finds it difficult to ensure the good status of national water bodies without close cooperation with these states in the field of water protection.

The Baltic Sea is considered one of the world areas with the heaviest marine traffic. Maritime transport (ships and the port) has an impact on all environmental components of the Baltic Sea. The main threat of pollution posed by the traffic includes illegal and accidental discharge of oil, hazardous substances and other waste, and introduction of alien organisms via ballast water. Also, maritime transport significantly contributes to a physical disturbance of the sea environment, underwater noise and marine litter. The threat of pollution also comes from the exploration, extraction and transportation of oil and other hydrocarbons conducted by the neighbouring states in the Baltic Sea. Run-off rain water collected from urban and other polluted areas and released into surface water bodies also has an adverse impact on water bodies. Presently, a mere 1/10 of the collected run-off rain water is treated, of which the greater part is treated to reach the established standards. The majority of run-off rain water collection systems are outdated. Due to the expansion of urban areas and growth in the volume of collected run-off rain water, the capacity of the available collection systems is inadequate which leads to flooding in some of the urban areas from heavy rains.

Pursuant to the applicable requirements, 97% of collected domestic and municipal wastewater and industrial effluent was treated in 2012. Wastewater collected in townships and villages, which makes up a small share of all collected wastewater, is either insufficiently treated or not treated at all. However, due to a large number of objects, addressing this problem would involve much higher costs in these areas than in major cities. According to the data of the Environmental Protection Agency, in 2012 Lithuania had 1,071 operating wastewater treatment plants (726 for the treatment of municipal and domestic wastewater and industrial effluent, and 345 for run-off rain water). Information of the National Commission for Energy Control and Prices shows wastewater management services being available to 68% of the population in Lithuania.

Groundwater is the main source of drinking water in Lithuania. Deep layers of water bodies are used for the extraction of drinking water; however, protection of groundwater against anthropogenic impacts is inadequate. In Lithuania, the status of most groundwater basins is good, with the exception of four basins that face the risk of mineralised water inflow: the chloride and sulphate levels exceed the limit values permissible for drinking water. The data currently available is insufficient to explicitly establish whether the human activity (the extraction of groundwater) has any

impact on the increase in the levels of these components. According to the 2012 data of the National Audit Office of Lithuania, the absolute majority of drinking groundwater extracting sites are operated in Lithuania under conditions that are not fully compliant with the environmental protection and healthcare requirements. Presently, the major potential polluters of groundwater bodies are sources of diffuse pollution (such as plant production, intensive livestock, poultry farms, etc.). Furthermore, the intensive use of water bodies may increase the concentration of some chemicals to such levels that water may become unsuitable for use in certain regions of the country. The quality of groundwater is especially relevant in rural areas that use water wells. According to the data of the State Food and Veterinary Service for 2012, approximately 640,000 of residents who take personal care of the drinking water supply (from dug shaft-wells or shallow bored wells). In 2012-2013, the water of 1/3 of dug shaft-wells was contaminated with nitrites and/or nitrates and non-compliant with the drinking water safety and quality requirements. About 76% of Lithuanian residents have access to the public drinking water supply.

Key policy implementing directions

38. Reduction of point or diffuse source pollution of surface water.

The protection of surface water will be tightened, the implementation of environmentally-friendly high technology will be promoted, and public awareness and understanding of the aquatic environmental impact of pollutants will be raised.

39. Management of dangerous chemicals in water bodies. It should be ensured that dangerous chemicals do not exceed the maximum permissible concentration in water bodies; also, efforts should be made to reduce and/or discontinue water pollution with environmentally hazardous substances. The use of plant protection substances containing biocides, pesticides, fungicides or other chemicals or chemical products should be well-balanced and innovative plant protection technologies should be promoted.

40. Preservation of the natural structure of the hydrographical network by halting the change of this structure and conserving or, if possible, restoring natural surface water bodies.

41. Reduction of pollution in the Baltic Sea. To implement the objective of the European Union Strategy for the Baltic Sea Region of saving the sea, the focus will be on the implementation of the policy for the integrated management of the Baltic Sea and inland water bodies. Lithuania will make efforts to ensure that navigation and other economic activities (exploration, extraction and transportation of oil and other hydrocarbons carried out by the

neighbouring states) in the Baltic Sea are conducted in an environmentally-friendly way. Closer international cooperation with the neighbouring states and other countries of the Baltic Sea region on coordinated pollution prevention and reduction measures and the implementation of joint management plans for river basin districts in the Baltic Sea region will be ensured. Public awareness should be raised by promoting a responsible approach to the Baltic Sea pollution issue, and efforts should be made to ensure that the levels of hazardous substances in the Baltic Sea cause no polluting impacts or adverse changes of eco-systems. To this end, new technologies with less adverse impact on the marine environment, cleaner production principles and management systems will be implemented.

42. Reduction of environmental pollution with run-off rain water. To protect urban areas from the threat posed by surplus water and prevent the release of pollutants into surface water bodies.

43. Environmental protection from the harmful effect of released wastewater. To raise public awareness about the aquatic environmental impact of wastewater; ensure that enterprises control priority hazardous substances that may be released into wastewater and that all generated wastewater is collected and managed in conformity with the established requirements; ensure the development and modernisation of wastewater

management infrastructure through the efficient use of EU financial instruments.

44. Protection of groundwater from pollution. To ensure that future generations use safe drinking water. To aim at analysing and approving groundwater resources and protecting groundwater resources by providing buffer strips that restrict economic activities. To raise public awareness and understanding of the potentially adverse impact of human activities on groundwater resources.

45. Improvement of the quality and availability of water supply and wastewater management services. To seek that consumers and customers have access to publicly supplied drinking water and wastewater management services under optimal conditions and for optimal prices or that they have an opportunity to supply themselves with drinking water and wastewater management services, and improve the quality and availability of such services.

Soil

46. The objective in the field of soil protection shall be the protection and sustainable use of soil.

As soil formation is an extremely slow process, soil is considered a non-renewable resource. Soil provides us with food, biomass and raw materials. It serves as a platform for human activities and landscape and a store of heritage, and plays a central role as a habitat and gene pool. Soil degradation

has a direct impact on the quality of water and air, biodiversity and climate change. In Lithuania, the quality of soil is declining as a result of natural processes or natural processes induced by economic activities, and the increased anthropogenic physical or chemical contamination of soil. The key issues to be addressed are the decline of soil organic matter, the diffuse soil contamination, soil sealing, erosion and loss of soil on slopes and areas with the developing surface karst processes, and the increasing soil acidity.

According to the data of the Geochemical Atlas of Europe, Lithuania should be classified as one of the cleanest countries in Europe in terms of the heavy metal content in soil.

The general geo-hygienic status of natural soils of Lithuania is good, with a deficiency of biologically significant elements observed in some regions. However, contaminant levels in the top layer of soil in cities (Vilnius, Alytus, Šiauliai, Panevėžys) and areas of individual enterprises in these cities, landfills and pesticide storage facilities and along motorways often exceed the maximum permissible values, which threatens the quality of soil and groundwater.

Various factors (contamination, unbalanced fertilisation, etc.) result in the increase of soil acidity. Approximately 18.7% of Lithuanian agricultural areas are acid, and almost one million hectares are prone to acidification. The public (including

farmers) have poor information on the principles of sustainable use of soil and land. Lithuanian soil with increased acidity may become less fertile as its capacity to preserve nutrients decreases. In order to increase soil fertility, farmers may begin using more fertilisers, which may in turn lead to higher soil and water contamination. Both natural and anthropogenic factors lead to the erosion and loss of soil on slopes and areas with the developing surface karst processes. Due to the intensive promotion of agriculture in the Soviet times and for the purpose of enlarging agricultural areas, land drainage involved the elimination of perennial vegetation and the reduction of wetland areas. Even though the productivity of the drained land went up by 12-16 points, large areas of farmland increased the risk of soil erosion. According to the 2003 data of the State Enterprise State Land Fund, the total land area affected by soil erosion in the Republic of Lithuania is about 730,900 ha (11.2% of the total area of the Republic of Lithuania). The largest share (66%) of land affected by erosion is arable land.

Almost 3.3% of the Lithuanian territory (214,000 ha) is covered with buildings of different purpose and used for infrastructure, transportation, mining and other needs. Approximately one half of soil of that area is completely covered. The growing area of artificial territories, including built-up areas, reduces water-retention capacity,

thereby increasing the threat of floods and erosion and decreasing the farming potential of soil.

An inventory of 11,136 potentially contaminated sites was established by 2012 which, based on a preliminary assessment, measured 2,500 ha. The contamination of about 49% of the affected sites attributed to the group of extremely dangerous areas and of some 41% of the sites attributed to the group of dangerous areas exceeds the permissible values. In technical terms it is difficult to rectify sites contaminated with chemicals as it requires big investments, while legislation fails to provide any obligation that persons who intend to sell and/or acquire sites with dangerous chemicals previously used there assess the environmental pollution and, where the level of contamination is dangerous to human health and the environment, restore the site in a safe way.

Key policy implementing directions

47. Mitigation of soil degradation and protection of soil functions, mostly focusing on the following:

- 47.1. Mitigation of soil fertilisation with surplus organic and mineral fertilisers as well as contamination with oil products, heavy metals and other chemicals, especially in cities, industrial areas, landfills, areas of pesticide storage facilities and along motorways;
- 47.2. Implementation of the

requirements for the good status of agrarian and environmental protection and raising public awareness in the field of soil protection;

47.3. Reduction of erosion and loss of soil on slopes and areas with the developing surface karst processes, with the exception of areas where efforts are made to preserve natural geodynamic processes;

47.4. Promotion of the redevelopment of urban areas and industrial facilities in historically formed urban or rehabilitated areas rather than in natural forest or agricultural areas.

48. Rehabilitation of degraded soil, mostly focusing on the management of brownfields and contaminated sites, with due consideration to the current and expected needs of land use and soil restoration costs.

Ambient air

49. The objective in the field of protection of air quality shall be to ensure that air pollution emissions in Lithuania do not exceed the volumes defined in international and EU legislation and that air pollution levels do not exceed the ambient air pollution level safe for human health and the environment.

With due consideration to the air basin pollution transported from other regions, Lithuania does not exceed emissions of ambient air pollutants (sulphur dioxide, non-methane volatile organic compounds, ammonia, nitrogen

oxides) established for Lithuania for 2010 onwards by international and EU legislation. As compared to 2005, in 2012 ambient air emissions contained less sulphur dioxide, non-methane volatile organic compounds and nitrogen oxides, the ammonia content stayed almost the same, while the content of particular matters slightly increased. Even though Lithuania should be classified as one of the cleanest countries in Europe in terms of the quality of ambient air, the status of ambient air and its changes show that there are some relevant issues that need to be addressed on the national, municipal and local levels, viz. emissions from local air pollution sources (transport and associated pollution, industrial and energy facilities, including household fuel incinerators) in cities, the growth of pollution from thermal power plants following the decommissioning of the State Enterprise Ignalina Nuclear Power Plant, and pollution caused by agricultural (animal husbandry) activities. Concentrations of sulphur dioxide emissions from energy facilities and nitrogen dioxide from vehicles are on the rise in major cities. In 2000-2012, sulphur dioxide emissions amounted to between 27,040 t and 53,700 t per year. In 2012, sulphur dioxide emissions were approximately 25% of the ceiling established for Lithuania for that year. The energy sector is the source of approximately 1/3 and households of about 1/10 of all sulphur dioxide emissions. Despite

the use of better quality fuel and the fact that the reduced fuel consumption in the energy sector has resulted in the decline in sulphur dioxide emissions over the recent years, the targets to reduce ambient air pollution set for the countries on the international and EU level are ambitious and difficult to implement.

In 2000-2012, nitrogen oxides emissions fluctuated from 53,500 t to 69,300 t per year. In 2012, nitrogen oxides emissions accounted for approximately 52% of the emission ceiling established for Lithuania. The key source of these emissions is the road transport sector, which accounted for 47% of all nitrogen oxides emissions in 2012. The growth of the Lithuanian vehicle fleet coupled with its ageing (as of 1 January 2011, the average age of vehicles registered in Lithuania was 18.3 years) leads to the increase in the share of nitrogen oxides emissions as compared to the total emissions. This issue is especially relevant in major cities where the public transport system is inadequately developed. Polluting car traffic may keep increasing, which would extremely deteriorate the ambient air quality in Lithuanian cities.

In major cities of Lithuania (Vilnius, Kaunas, Klaipėda, Šiauliai and Panevėžys), daily limits of particulate matter (PM₁₀) are increasingly exceeded, and the average annual levels of this pollutant and of particulate matter (PM_{2.5}) that is still smaller and more hazardous to human health are

growing. The problem is especially relevant during the cold season of the year as thermal energy production intensifies and more emissions are released from energy facilities, including household fuel (also solid biofuel and even waste) incinerators that are essentially not subject to any control, and in spring when dirt accumulated in streets after the winter season and not been removed efficiently or in due time is raised by vehicles or stronger winds into the ambient air in areas, especially urban areas, near roads or streets that are neither paved nor have any other equivalent surface.

In 2000-2012, non-methane volatile organic compound emissions in Lithuania ranged between 58,800 t and 76,770 t per year. In 2012, these emissions made up approximately 64% of the emission ceiling established for Lithuania. Approximately 1/5 of this pollutant is released into ambient air as a result of the use of solvents and other products containing volatile organic compounds. Other key sources of this pollution are passenger transport and households.

The animal husbandry sector is the key source of ammonia emissions. In 2006-2011, livestock in Lithuania declined by about 16% (three-fold during the last 20 years) and new manure and slurry management technologies were implemented, which resulted in reduced ambient air pollution with ammonia by 23% from 2005 to 2011; in 2012, ammonia emissions were approximately

45% of the emission ceiling established for Lithuania. However, the expected development of the livestock sector may increase ambient air pollution with ammonia and the degradation of the ambient air quality in rural areas, unless technologies limiting the formation and/or release of ammonia are implemented.

A comparison with the 2005 emissions shows that more copper (about 17%), benzo(a)pyrene (about 10%), arsenic (about 9%) and zinc (about 5%) and less nickel (about 43%), mercury (26%), selenium (18%), chromium (4%) and cadmium (4%) were released into the ambient air in 2012. The level of ambient air pollution with heavy metals, such as arsenic, cadmium and nickel, is fluctuating, but does not exceed the established ceilings. All air quality research facilities in Vilnius, Kaunas, Klaipėda and Šiauliai register constant increases in the average annual concentration of benzo(a)pyrene, a carcinogen of the group of polycyclic aromatic hydrocarbons, that exceeded the ambient air quality standard (applicable as of 2013) in Kaunas in 2009, in Kaunas (Petrašiūnai district), Vilnius (Žirmūnai district) and Šiauliai in 2010 and 2011, and in Klaipėda (city centre) in 2012. This air pollutant results from incomplete fuel incineration. As is the case with other particulate matter, the concentration of benzo(a)pyrene in the ambient air especially increases during the cold season due to the operation of energy

facilities, in particular household fuel (including solid biofuel and even waste) incinerators that are essentially under no control. The burning of uncropped, unraked or otherwise unpicked vegetation (or its parts) or waste of such vegetation (or its parts) or other wastes in the fields also exerts an adverse impact on the level of ambient air pollution with benzo(a) pyrene and particulate matter. The due assessment and efficient management of pollution with heavy metals and polycyclic aromatic hydrocarbons will provide preconditions for ensuring ambient air pollution levels that meet the established requirements, and conditions for preserving a clean environment that is safe for people to live in.

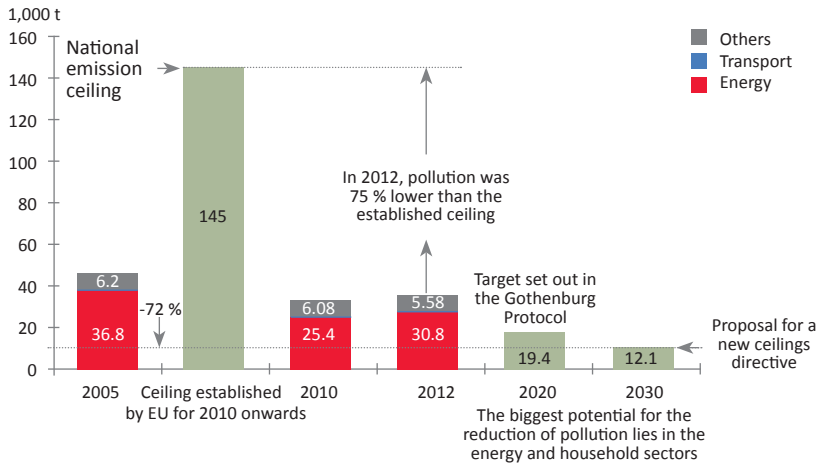
Being a member state of the European Union and international organisations, Lithuania has undertook to assess and manage (limit) total emissions in the ambient air, viz. nitrogen oxides, sulphur dioxide, volatile organic compounds and ammonia, to comply with the established requirements and manage ambient air emissions released by certain facilities, and ensure that ambient air is safe for human health and the environment. The emission ceilings established for Lithuania were not exceeded before 2012, ambient air emissions from certain facilities have been managed in compliance with the applicable requirements, and the ambient air pollution levels have not exceeded the ambient air

quality standards in line with the EU requirements. However, efficient ambient air pollution and quality management should be ensured in order to implement the increasing international requirements of the protocols to the Convention on Long Range Transboundary Air Pollution and other conventions on the regulation of emissions in ambient air, and the targets for air quality and the reduction of air pollution by 2020 as provided in EU legislation and the objectives set for 2030 should be achieved.

Key policy implementing directions

50. Reduction of ambient air pollution with sulphur dioxide. For the purpose of implementation of the aims for the reduction of emissions of the key pollutants set out in the EU Thematic Strategy on air pollution, the revised Gothenburg Protocol to the 2012 Convention on Long Range Transboundary Air Pollution (hereinafter 'the Gothenburg Protocol') and the Proposal of 18 December 2013 of the Commission for a Directive of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants and amending Directive 2003/35/EC (hereinafter 'the proposal for a new ceilings directive'), to reduce the pollution of ambient air with sulphur dioxide in Lithuania by at least 55% (as compared to the 2005

Figure 3. Reduction of sulphur dioxide emissions in Lithuania



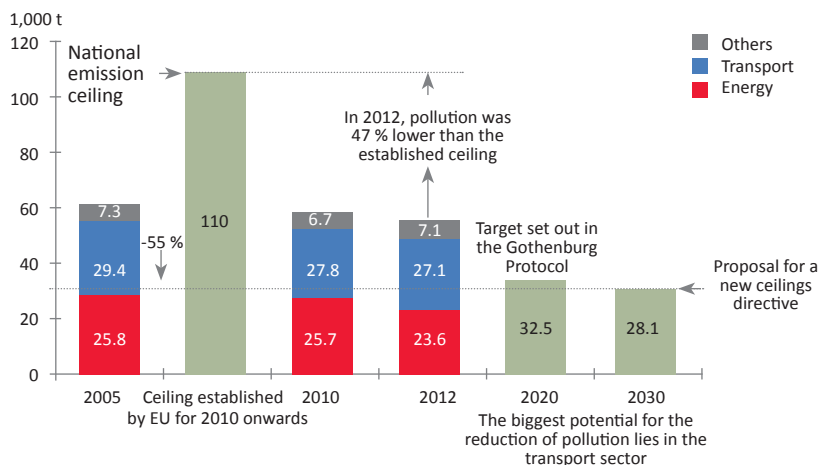
Source: Environmental Protection Agency, Lithuania's report for 2005-2012 prepared for submission to the United Nations and the European Commission in accordance with the Convention on Long Range Transboundary Air Pollution (February 2014).

emissions) by 2020. The focus should be on the reduction of pollution from the transport and energy sectors through the use of pollution reduction measures, such as fuel with low sulphur content (0.6%), for heat generation in households, the commercial, agricultural and industrial sectors and in thermal power plants, and the application of the best available technology (production methods), especially in the field of cement, glass and limestone production and oil refining. The improvement of energy efficiency will allow reducing the volume of fuel used for energy production. In 2020-2030, additional measures will have to be taken in order to reduce sulphur dioxide pollution for achieving

the target on the reduction of pollution set out for 2030 in the proposal for a new ceilings directive, viz. 72%, as compared to the emissions in 2005 (Figure 3).

51. *Reduction of ambient air pollution with nitrogen oxides.* For the purpose of implementation of the targets for the reduction of emissions of the key pollutants set out in the EU Thematic Strategy on air pollution, the Gothenburg Protocol and the proposal for a new ceilings directive, to reduce the pollution of ambient air with nitrogen oxides in Lithuania by at least 48% (as compared to the 2005 emissions) by 2020, mostly through the focus on the reduction of pollution from the road transport sector (development

Figure 4. Reduction of nitrogen oxides emissions in Lithuania

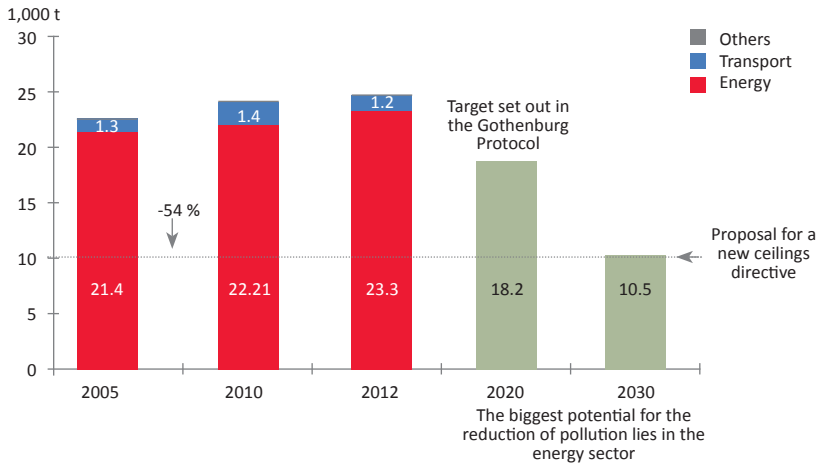


Source: Environmental Protection Agency, Lithuania's report for 2005-2012 prepared for submission to the United Nations and the European Commission in accordance with the Convention on Long Range Transboundary Air Pollution (February 2014).

of public transport, promotion of the use of less polluting and green vehicles) and the heat and power generation sector (modification of the incineration process, installation of the selective catalytic and non-catalytic reduction in incinerators, tightening of limit values for nitrogen oxides originating from small and medium-sized fuel incinerators (including biofuel incinerators)), and on the improvement of energy efficiency, which will allow reducing the volume of fuel used for energy production. In 2020-2030, additional measures will have to be taken in order to reduce the nitrogen oxides pollution for achieving the target on the reduction of pollution set out for 2030 in the proposal for a new ceilings

directive, viz. 55%, as compared to the 2005 emissions (Figure 4).

52. *Reduction of ambient air pollution with particulate matters.* For the purpose of implementation of the targets for the reduction of emissions of the key pollutants set out in the Gothenburg Protocol and the proposal for a new ceilings directive, to reduce the pollution of ambient air with particulate matter (PM_{2.5}) in Lithuania by at least 20% (as compared to the 2005 emissions) by 2020, mostly through the focus on the reduction of pollution from the thermal energy production sector (development of a system for promoting the use of green and eco-labelled sources of heating in private housing, the use of high-performance

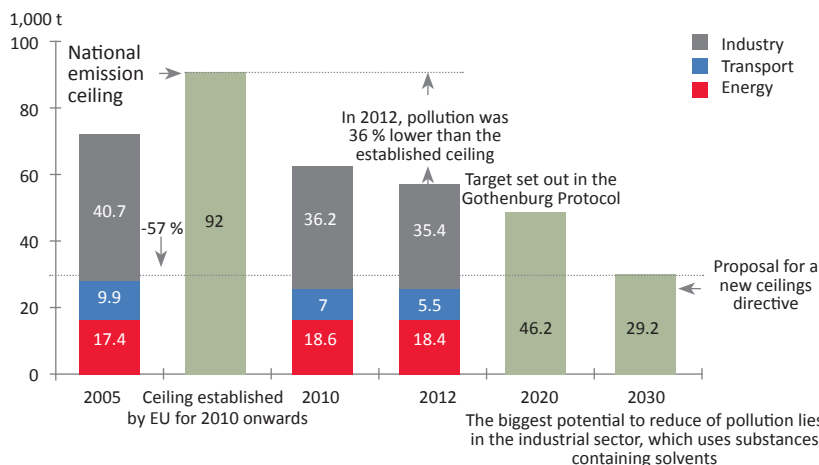
Figure 5. Reduction of particulate matter (PM_{2.5}) emissions in Lithuania

Source: Environmental Protection Agency, Lithuania's report for 2005-2012 prepared for submission to the United Nations and the European Commission in accordance with the Convention on Long Range Transboundary Air Pollution (February 2014).

particulate matter collection filters in incinerators and the application of good practices of maintenance of this equipment, tightening of limit values for particulate matter originating from small and medium-sized boilers (including solid biofuel incinerators)) and the transport sector (promoting the use of less polluting and green vehicles and modernising the passenger and heavy-duty vehicle fleet), on the tightening of control of the burning of uncropped, unraked or otherwise unpicked vegetation (or its parts) or waste of such vegetation (or its parts) or other wastes in the fields, and on the improvement of energy efficiency, which will allow reducing the volume of fuel used for energy production. In 2020-2030,

additional measures will have to be taken in order to reduce the pollution with particulate matter for achieving the target on the reduction of pollution set out for 2030 in the proposal for a new ceilings directive, viz. 54%, as compared to the 2005 emissions (*Figure 5*). 53. *Reduction of ambient air pollution with non-methane volatile organic compounds.* For the purpose of implementation of the targets for the reduction of emissions of the key pollutants set out in the EU Thematic Strategy on air pollution, the Gothenburg Protocol and the proposal for a new ceilings directive, to reduce the pollution of ambient air with non-methane volatile organic compounds in Lithuania by at least 32% (as compared

Figure 6. Reduction of non-methane volatile organic compounds emissions in Lithuania



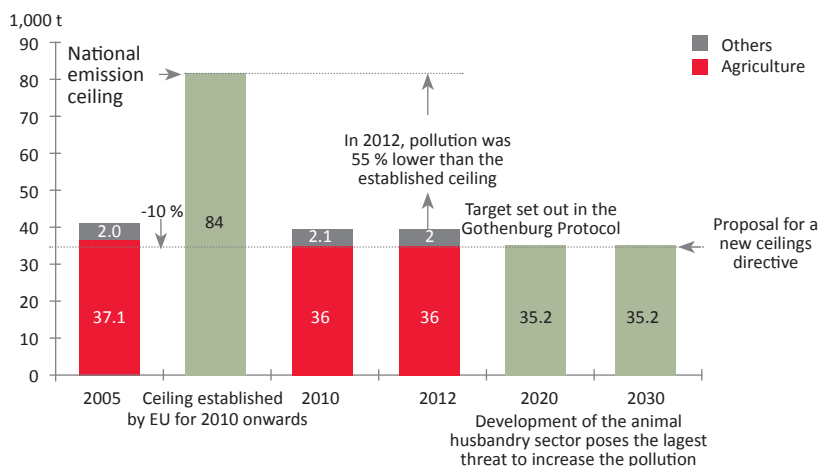
Source: Environmental Protection Agency, Lithuania's report for 2005-2012 prepared for submission to the United Nations and the European Commission in accordance with the Convention on Long Range Transboundary Air Pollution (February 2014).

to the 2005 emissions) by 2020, mostly through the focus on the reduction of pollution from industry that uses substances containing solvents (for the application of better surface treatment technologies), on the promotion of the use of less polluting heat generation equipment in households, and on the application of programmes on the detection and control of the leakage of volatile organic compounds in the refining industry. In 2020–2030, additional measures will have to be taken in order to reduce the pollution with non-methane volatile organic compounds for achieving the target on the reduction of pollution set out for 2030 in the proposal for a new ceilings directive, viz. 57%, as compared to the

2005 emissions (Figure 6).

54. *Reduction of ambient air pollution with ammonia.* For the purpose of implementation of the targets for the reduction of emissions of the key pollutants set out in the EU Thematic Strategy on air pollution, the Gothenburg Protocol and the proposal for a new ceilings directive, to reduce the pollution of ambient air with ammonia in Lithuania by at least 10% (as compared to the 2005 emissions) by 2020, mostly through the focus on the implementation of pollution prevention technologies, the reduction of pollution in the livestock sector and of pollution caused by the use of inorganic fertilisers. The proposal for a new ceilings directive provide for no further reduction of

Figure 7. Limitation of ammonia emissions in Lithuania



Source: Environmental Protection Agency, Lithuania's report for 2005–2012 prepared for submission to the United Nations and the European Commission in accordance with the Convention on Long Range Transboundary Air Pollution (February 2014).

the ammonia pollution in 2020–2030; however, much attention should be paid at least to the implementation of the good agricultural practice (Figure 7).

55. *Reduction of ambient air pollution with heavy metals and polycyclic aromatic hydrocarbons.* For the purpose of implementation of the target of the EU Thematic Strategy on air pollution, to reduce emissions of heavy metals and polycyclic aromatic hydrocarbons regulated by international and EU legislation and ensure that the quality of the ambient air is compliant with EU requirements. The sustainable development of activities that produce these emissions, which are extremely hazardous to human health and the environment, and lead to exceeding

or potential exceeding of the limits for these pollutants in the ambient air should be ensured, mostly through the focus on the reduction of pollution in the road transport and thermal energy production sectors, including heat generation in households, the tightening of control on the burning of uncropped, unraked or otherwise unpicked vegetation (or its parts) or waste of such vegetation (or its parts) or other wastes in the fields, which will allow reducing the volume of fuel used for energy production.

56. *Improvement of the national ambient air pollution and quality management system in Lithuania.* For the purpose of implementation of the targets of the EU Thematic Strategy

on air pollution, in accordance with international and EU legislation to assess national emissions of pollutants, including heavy metals and polycyclic aromatic hydrocarbons, regulated by international and EU legislation (to develop and continuously improve the national system of accounting for air pollutants and greenhouse gas emissions) and the level of ambient air pollution with these pollutants (the quality of air), control the emissions and the quality of ambient air in compliance with EU requirements, ensure the quality of ambient air that poses no threat to human health and the environment, meets EU requirements and complies with the levels recommended by the World Health Organisation, and publish information about the quality and pollution of ambient air and ways to reduce such pollution. The sustainable development of the activities that produce emissions hazardous to human health and the environment should be ensured, mostly through the focus on the reduction of pollution in the road transport, agricultural and thermal energy production sectors, including thermal energy production in households. Furthermore, the sustainable development of activities that may involve functions to upgrade, maintain and control facilities related to the reduction of ambient air pollution (e.g. the strengthening of fire safety of heat generation equipment, especially in households; upgrading of city street

maintenance technologies, etc.) should be achieved.

Radiological status of the environment

57. The objective in the field of the radiological status of the environment shall be to achieve the good radiological environmental status in Lithuania, the volume activity concentration of radionuclide Cs-137 in the Baltic Sea water (Lithuania's economic zone) should decrease from 35 Bq/m³ to 14.6 Bq/m³ in 2020, while the radiological pollution of air and inland water bodies should not increase.

Nuclear projects implemented in the region (the nuclear power plants to be built in Lithuania, the Kaliningrad Region of the Russian Federation and Belarus, and the planned and implemented radioactive waste management projects related to the Ignalina Nuclear Power Plant) may cause an ecological imbalance and threaten the safety of the population due to potential radiological pollution. Following the accident at the Chernobyl Nuclear Power Plant, the Baltic Sea has become and still is a sea polluted with long-lived radionuclide Cs-137 the most in the world, while Lake Drūkšiai has been affected by anthropogenic pollution caused by the Chernobyl accident and radionuclide emissions from the Ignalina Nuclear Power Plant during the latter's regular operations. Furthermore, radionuclide emissions from nuclear power plants

to be built in the neighbouring states (the Kaliningrad Region of the Russian Federation and Belarus) will have an impact on Lithuania's major rivers, viz. the Nemunas and the Neris.

Key policy implementing directions

58. Strengthening of radiological pollution prevention and reduction of radiological pollution:

58.1. To strengthen the efficient monitoring, control and assessment of the impact from the transfer of radionuclides on the quality of ambient air and water and on the natural background radiation in Lithuania, and the environment of nuclear facilities. For this purpose, the existing network of automatic radiation air monitoring stations should undergo modernisation and new automatic radiation air and water monitoring stations should be installed. To continue the assessment of thermal and radiological impact on Lake Drūkšiai as part of the plan to build a new nuclear power plant in Lithuania. To expand the environmental radiological monitoring programme in Lithuanian areas bordering on the neighbouring states where nuclear power plants are to be built, especially with a focus on the radiological monitoring of the Neris and the Nemunas;

58.2. In order to ensure that the development and operation of nuclear power plants to be built in the neighbouring states comply with the highest international nuclear standards, active involvement in

the implementation of international treaties, conventions and initiatives that restrict or ban the distribution of nuclear materials is required, and a great deal of attention should be paid to addressing nuclear safety issues. To achieve that the neighbouring states, which have plans to build nuclear power plants, carry out a comprehensive environmental impact assessment;

58.3. To seek the use of hi-tech solutions in the nuclear energy sector to minimise the emissions of radioactive substances.

59. Raising public awareness on issues of the radiological environmental status. Information about the radiological pollution and threat should be made available in order to ensure that the public gains the knowledge and ability of protecting themselves in case of any emergency in a nuclear power plant.

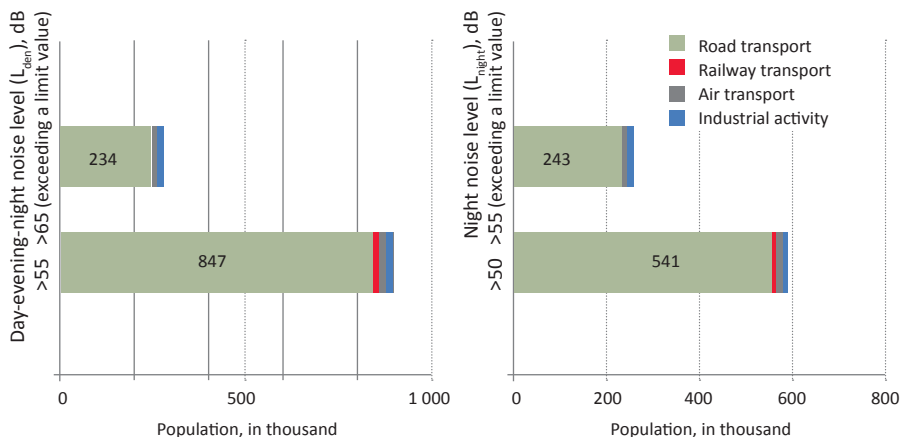
Ambient noise

60. The objective in the field of noise management shall be to protect the population from the harmful effect of ambient noise.

Among other environmental health risk factors, ambient noise causes a burden of disease in Europe of a scale second to air pollution. According to the data of the World Health Organisation for 2011, at least one million healthy life years are lost every year in EU and other western European countries due to health effects arising from noise exposure to traffic (*Figure 8*).

In Lithuania, the main sources of ambient noise are road, railway and air traffic

Figure 8. Number of persons exposed to noise (emitted by road, railway and air transport and industrial activity) in Lithuanian agglomerations



Source: European Environment Agency, Strategic noise mapping data of 2012 for Vilnius, Kaunas, Klaipėda, Šiauliai and Panevėžys agglomerations, <<http://noise.eionet.europa.eu/>>[consulted on 28 April 2014].

as well as industrial activity. The largest number of people is exposed to road traffic noise. According to the strategic noise mapping data of 2012, more than 78,000 residents of Vilnius (approx. 14%), more than 80,000 residents of Kaunas (approx. 26%), 55,000 residents of Klaipėda (approx. 34%), 19,000 residents of Šiauliai (approx. 19%) and about 1,000 residents of Panevėžys live in buildings exposed to road traffic noise levels exceeding the limit value (65 dBA) of the day-evening-night noise indicator (L_{den}). More than 67,000 residents of Vilnius (approx. 12%), more than 100,000 residents of Kaunas (approx. 33%), 48,000 residents of Klaipėda (approx. 30%), 22,000 residents of Šiauliai (approx. 18%) and about 1,000 residents of Panevėžys

live in buildings exposed to road traffic noise levels exceeding the limit value (55 dBA) of the night noise indicator (L_{night}). According to the audit data of the National Audit Office of Lithuania for 2001-2012, not all municipalities provide conditions for the protection of public health from the adverse noise exposure, e.g. 57 municipalities (out of 60) have failed to approve noise prevention zones, i.e. areas where noise exposure exceeds limit values and noise reduction measures have to be implemented; some municipalities have failed to install compensatory measures near schools and hospitals where the maximum permissible noise level is exceeded; not all municipalities have designated quiet areas free of noise

from traffic, industry or commercial activities, which could eliminate places for residents to hide from all noise in the city; half of the municipalities in Lithuania have failed to draw up and approve noise prevention action plans for the management of noise-related problems, even though they had to do that under the Law of the Republic of Lithuania on Noise Management, effective as of 31 December 2004.

According to the data of the European Union statistical office (Eurostat), in 2012 approximately 13.3% of the population in Lithuania stated during surveys that they were affected by noise from neighbours or from the outside. A comparison with other European countries shows that the population of the following countries had fewer complaints about noise than that of Lithuania: Croatia (9.8%), Hungary (10.2%), Norway (10.8%), Iceland (11.1%), Belgium (11.5%), Bulgaria (12%), Estonia (12.8%) and Sweden (12.9%). According to Eurostat, in 2012 the average population complaining about noise in the Member States (EU-28) was 18.8%. Approximately 14.6% of the population in Lithuania complained about air or other pollution in 2012 (the average of EU-28 was 14.1%).

Key policy implementing directions

61. *Reduction of the number of persons exposed to high levels of road traffic noise in agglomerations*, with a particular focus on the following:

61.1. Improvement of the assessment of ambient noise (strengthening of

capacities of specialists in ambient noise assessment, implementation of internationally accepted ambient noise assessment methods and methodologies);

61.2. Improvement of the management of ambient noise (improvement of the legal framework of noise management, strengthening of capacities of noise management specialists);

61.3. Assessment of ambient noise by noise mapping;

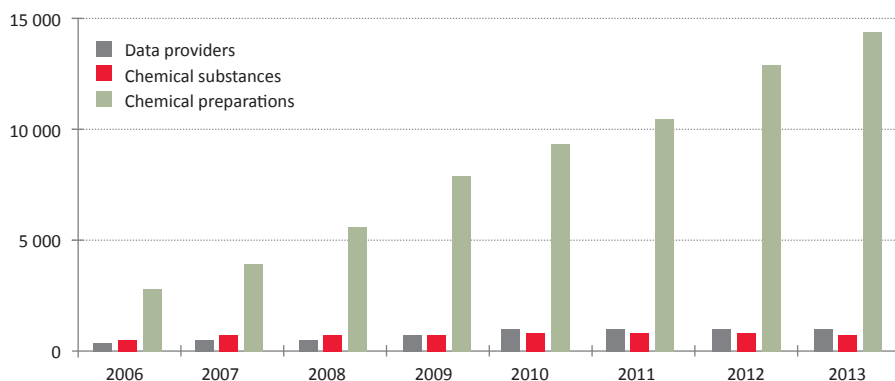
61.4. Integration of noise management aspects into spatial planning and construction processes by considering landscape characteristics, implementation of noise-abatement measures in areas with high levels of noise exposure, and strengthening of the monitoring and control of noise sources. Specific noise-abatement measures should be selected and distributed with due consideration to the key principles of landscape, territorial and spatial planning.

62. *Prevention of noise from domestic activities* with a view to reducing the percentage of the population complaining about noise from neighbours or from the outside. Public awareness should be raised in order to prevent any breach of the peace.

Chemicals

63. **The objective in the field of chemicals management shall be to reduce the use of hazardous chemical substances and mixtures as well as their adverse impact on human health and the environment.**

Figure 9. Number of chemical substances and mixtures registered in Lithuania*



* Only part of the chemical substances and mixtures are registered in the database of chemicals; therefore, it can be assumed that only part (even though a large one) of all chemical substances and mixtures used are registered.

Source: Environmental Protection Agency, data of the Chemical Substances and Preparations Subsystem, Integrated Computer System of Environmental Information Management.

According to the data of the Eurobarometer sociological surveys of 2011 and 2014, the health impact of chemicals used in everyday products was one of the greatest environmental concerns for the Lithuanian population (Figure 9).

In 2013, over 14,000 chemical mixtures and more than one thousand of substances were registered in the national database of chemicals. The majority of these substances are hazardous to human health and the environment, and their number is increasing steadily. Protecting the environment from this quantity of substances is complicated and expensive.

The shortage of toxicological data on many chemicals that may be released into the environment and on the potential adverse impact of chemicals on human health and the environment is a matter of great concern. Some chemical substances have a carcinogenic, mutagenic or cumulative effect, and very low levels of such chemicals may be sufficient to cause this effect.

Although Lithuania has a legal framework and institutional infrastructure to help implement the EU and international requirements that sets national requirements, and although operating authorities that carry out the state control and supervision of the handling of chemical substances and

mixtures are in place, a responsibility for the violation of legal provisions is provided and various campaigns are conducted to raise industrial and public awareness. However, the cooperation and coordination of activities among the authorities engaged in the state control and supervision of the handling of chemical substances and mixtures and other public and municipal authorities is still inadequate, and many violations of legal provisions are committed. The chemicals management is insufficiently integrated into the strategic planning documents for long-term sustainable development and national economic development.

Key policy implementing directions

64. Reduction of the risk posed by chemical substances to human health and the environment. To reduce the risk posed by chemical substances to human health and the environment by performing the risk assessment of chemicals and providing for their risk reduction, raising public awareness on environmental issues and corporate social responsibility in the field of chemical safety, and improving the quality and communication of information about the risk from chemicals on the market and ways to manage such risk.

65. Improvement of the safety of products and articles containing

chemicals. Efforts will be made to ensure that by 2020 chemicals are produced and used with a minimal impact on human health and the environment. For this purpose, the system of state control and supervision of the handling of chemical substances and mixtures should be improved, the cooperation among supervisory authorities and the coordination of their activities should be strengthened, and SMEs should be assisted with the implementation of the requirements for the handling of chemicals.

66. Substitution of hazardous chemicals. To promote the substitution of chemicals hazardous to human health and the environment with safer substances or alternative technologies, including non-chemical alternatives. In close and active cooperation with economic operators and national and EU institutions, to promote the assessment and implementation of less-hazardous alternative substances.

67. Promotion of the prevention of chemical pollution. To reduce the use of substances that are a matter of great concern, improve the reuse of materials, encourage the development and implementation of production technologies and use of chemicals that generate minimal waste, and promote the best available technologies and production methods. The supervision and state control of the placement on the market and use of hazardous chemical products should be intensified. This will lead to lower quantities of less

hazardous waste, increased consumer protection and improved working conditions of employees.

68. More efficient implementation of the chemicals management policy. To improve the management of chemicals by applying smart management principles. The safe management of chemical substances will reduce their hazardous effects, prevent the unnecessary costs for counter-measures and bring economic benefit at the same time. The acknowledgment of chemicals playing a significant role in the development of society and having links with almost all socio-economic sectors calls for an integrated approach to their management, which requires:

68.1. To integrate chemicals management into the strategic planning documents for long-term sustainable development and national economic development; to involve all sectors, including the private sector, non-governmental organisations, the civil society and various social groups into the process of chemicals management, and to ensure efficient coordination of activities among various players in this field. This will enable finding sustainable solutions to health and environmental protection problems, as addressing problems in one sector will not jeopardise the situation in the other sector;

68.2. To strengthen and carry out efficient state control of the handling of chemical substances and mixtures;

68.3. To ensure better quality and availability of data on chemicals

available on the market, their characteristics, effect and protective measures; to ensure that information on chemical substances and mixtures is provided throughout their supply chain and used to protect human health and the environment. This will raise the awareness of persons who use chemicals and improve the level of protection of human health and the environment.

Urban environment

69. The objective in the field of the urban environment shall be to achieve a good quality of urban environment and simultaneously ensure sustainable development of the areas in the country as well as favourable conditions for the socio-economic development of urban areas.

Two out of three Lithuanian residents live in urban areas and their quality of life is directly influenced by the status of the urban environment. Lithuanian urban and other residential areas are evenly distributed throughout the territory of the country and are easily accessible; however, the development of Lithuanian regions is uneven, and human well-being differs from region to region. The shuttle migration of residents from provincial areas to major cities with the key growth potential, innovations and jobs increases transport demand, ambient air pollution and levels of greenhouse gas emissions. Cities are faced with major specific environmental problems, such as the poor quality of air, noise, greenhouse gas emissions, generation of waste and

wastewater, traffic jams or derelict urban areas with engineering networks and other technical infrastructure, which impede the efficient urban functioning and management (unpopulated/unused or barely populated/used areas have to be crossed or bypassed and illuminated at night). They boost the maintenance costs of urban infrastructure and increase urban pollution. The causes of environmental problems in cities are also closely related to socio-economic aspects; therefore, local initiatives for solving one problem can lead to new problems.

Integrated methods of spatial planning, which also include environmental protection issues, are essential for territorial planning as they allow ensuring that urban environment becomes a sustainable, efficient and safe place to live and work. The most successful municipalities apply integrated methods of spatial planning for the management of urban environment (they draw up and approve long-term and strategic action plans that thoroughly analyse the relationship among various policy areas and responsibilities, including all administrative levels). The development of long-term territorial planning documents that would also cover environmental protection issues is currently inadequate in Lithuania. Some municipalities have no territorial master plans of municipal centres drawn up or revised, viz. plans of towns, townships and other urban units (administrative centres of rural elderships (settlements)) that would provide for further

development of the area. Municipalities lack funds for the development of master, special and detailed plans, management of public spaces and blocks of multi-apartment buildings, improvement of communication and engineering infrastructure, or for taking care of derelict urban areas that require a change in their use. The absence of the requisite territorial planning documents leads to an erratic socio-economic development, complicates investment and also intensifies the uneven development of areas and environmental protection problems. This situation fails to provide any efficient conditions for sustainable development of the urban environment.

Developing master and detailed plans for towns and townships, establishing their development perspectives, envisaging areas for development, the quality of works and planning of such areas, and improving the urban structure are extremely important for the future environmental status of these residential areas and for the urban, architectural, functional, ecological and aesthetical quality of residential areas under design. The history of development of territorial planning documents shows that territorial planning documents produced differ in their quality, content and degree of detail.

Key policy implementing directions

70. Promotion of sustainable planning of cities and peri-urban territories.

With a view to achieving the urban, architectural, functional, ecological and aesthetical quality, improving territorial cohesion, a sustainable, consistent, even and viable urban development and coherence of urban planning and investments and reducing territorial differences in the quality of life, the shuttle migration of the population to major cities, the need for transport and the required infrastructure as well as the resulting environmental pollution and climate change, Lithuania will seek to ensure that all towns and townships, settlements or administrative centres of rural elderships have revised territorial planning documents in place and that development plans of urban centres (including development plans for the municipal heat sector) are drawn up by planning the area so as to prevent the accumulation of pollutants hazardous to human health and the environment. Such an integrated approach to sustainable territorial planning at local level and to transport, heat production and supply in particular, based on effective consultations of all stakeholders, is critical for the successful implementation of environmental protection legislation and for achieving excellent long lasting improvements in the quality of the environment.

71. Promotion of the development and implementation of sustainable urban transport communication plans for the purpose of reducing an adverse impact on human health and the environment (air pollution, noise, traffic jams and greenhouse gas emissions). Effective transport communication planning

involves the preparation of a long-term vision to plan municipal financial requirements for infrastructure and vehicles and design incentive schemes to promote high quality public transport, safe cycling and pedestrian traffic. Municipalities will seek to develop and implement strategic plans for sustainable urban mobility, taking account of safety and security, air pollution, noise, greenhouse gas emissions, energy consumption and land use. The policy and measures set out in sustainable urban mobility plans will cover all types and forms of transport in the entire urban agglomeration, such as private and public, passenger and goods, motor and non-motorised vehicles, their operation and maintenance. Solutions of each municipality will be tailor-made with due consideration to the local situation and be based on broad consultations with the public and other stakeholders.

The developed sustainable urban mobility plans will improve the efficiency in solving environmental problems related to urban transport. This human-oriented planning of sustainable urban mobility will optimise population mobility, facilitate access to various urban spaces and services, and concurrently improve the quality of air, reduce noise, mitigate climate change and contribute to a positive impact on human health.

72. Development and use of research, innovation and solutions on urban issues. Efforts will be made to create innovative methods for the development and modernisation of

cities based on research, examples of complex urban modernisation solutions covering issues of water management, clean public and residential environment, sustainable transport systems, green energy and sustainable use of natural resources in construction. Also, Lithuania will seek to produce examples of the adaptation of former large-scale industrial complexes to integrated activities (for cultural, service, residential, recreational or commercial purposes), which may serve as guidelines for the management of such areas. Actions aimed at sustainable urban development and the planning and expansion of urban areas should ensure the protection of architectural and urban heritage, its rehabilitation and use for the full improvement of the quality of life of the population and for educational and cultural tourism needs.

SECTION THREE

MAINTENANCE OF ECOSYSTEM STABILITY

Landscape, biodiversity and ecosystem services

73. The objective in the field of landscape protection shall be to protect landscape areas of various territorial levels and their geoeological potential by ensuring their proper maintenance, use, planning and sustainable development.

In terms of the nature of landscape use, cultivated agrarian landscape currently prevails in Lithuania (approx. 51%), mixed-type wooded and slightly cultivated landscape amounts to 22.5%, natural wooded landscape is approximately 19.5%, partially urbanised agrarian landscape is almost 4%, while urban (urbanised) and technogenic landscapes cover more than 3% of the country's territory. The most ecologically favourable (most stable) landscape is in the south-eastern, north-eastern and south-western parts, while the majority of heavily bare (agrarian) landscape areas is found in the northern and central parts of the country (in the Žiemgala and Šešupė plains and their river valleys).

After the restoration of Lithuania's independence, the landscape structure was mostly affected by land restitution and development of market economy, adaptation of the national road network to the European transport infrastructure requirements, intensive urban sprawl in major cities and rapid densification of built-up urban areas (decrease of green areas), intensification of forest use and growth of forest coverage, development of an alternative energy sector, and rapid spread and construction of low value architecture and structures. At the same time, legal grounds for the territorial protection of landscape and biodiversity were laid down, viz. the system of protected areas was developed and a system of the natural frame was formed that was integrated

in master plans of the state and its regions, districts and cities approved between 2002 and 2010.

In Lithuania, the status of landscape remains stable; however, separate types of landscape are changing due to the effects from climate change and uncontrolled urban sprawl. According to the data of CORINE Land Cover project, 1.53% of Lithuania's territory changed from 2000 to 2006. Of these changes, as many as 78% were related to wooded areas and 18% to agricultural areas. It was stated in 2005 that land use and land management in Lithuania were rapidly shrinking in scale, the increasing area of abandoned land was causing the disintegration of land reclamation systems, meadows and pastures were becoming overgrown with shrubs, and the self-renaturalisation of landscape had started, especially in south-eastern Lithuania, Medininkai upland and the central part of Žemaičiai upland. In 2000-2006, the area of built-up territories and related properties (gardens, ponds, streets and roads) more than doubled in size, viz. from 1.2% to 2.8%. The most significant changes are related to urban sprawl on the outskirts of major cities where former agricultural land plots and areas previously reserved for ecological needs as well as exceptional and eco-sensitive areas near water bodies are increasingly used for recreation and the construction of residential buildings. The development of internal urban areas is also growing more intensive, and there remain increasingly fewer

areas with no buildings or technogenic surface covers; therefore, the area of natural and semi-natural territories is shrinking, eco-systems are undergoing fragmentation, natural landscape is degrading and its structure is changing. Changes of the Baltic Sea coast are influenced by climate change and anthropogenic activities, viz. Klaipėda State Seaport reconstruction and the dredging of the port entrance have caused intensive coast erosion in the port's northern section. The forecasted effect on the coasts is related to the reconstruction of Šventoji Port as well as to the expected construction of a deepwater seaport. Other construction activities coincidental with the decline in the amount of deposits in the coastal zone (the submarine slope) and extreme storms have increased the abrasion of the seacoast. There is a threat that the growing number of extreme climatic phenomena will require a more intensive use of expensive coast protection measures, which can also affect the seacoast landscape as well as the landscape of river valleys in western Lithuania. Climate change will impact the activity of karst effects (gypsum leaching) in the karst region in northern Lithuania. Climate change will also affect the landscape, eco-systems and biodiversity in other regions. The development of renewable energy will influence both the aesthetics (engineering installations) and the structure (plantations of biofuel crops) of landscape.

74. The objective in the field of conservation of biodiversity and ecosystem services shall be to halt the loss of biodiversity and the degradation of ecosystems and their services and, where possible, to restore them.

The decrease of biodiversity, representing the viable part of ecosystems, is a huge loss as it disturbs ecosystem functions on which the well-being of our society and economy depend. Unchanged or slightly changed ecosystems occupy over 1/3 of Lithuania's territory. The greatest variety of wild nature is found in forests and wetlands. Presently, approximately 20,500 fauna species, 1,800 flora species and 6,100 fungi species can be found in Lithuania; of these numbers, 767 species are protected (501 protected species in 1992), 53 types of vegetation are either on the verge of extinction or extremely rare or rapidly becoming endangered in the country. Furthermore, Lithuania and its sea areas contain 54 natural habitat types of Community interest and 101 flora and fauna species of Community interest, of which 49 species require the designation of areas important for the conservation of habitats.

The key problems of biodiversity conservation are as follows:

74.1. Disappearance of habitats of species and their deterioration, especially due to the increased use of forest, change of land and forestry technologies (intensified activities, use of chemicals, development of

single crop farming, replacement of meadows and pastures with arable land or discontinuation of the traditional extensive use of land, abandoned or afforested land lots, especially valuable natural meadows, pastures, wetlands and forest glades), disturbance of the natural hydrological regime in forests and wetlands, rapid development of construction, industry and infrastructure, developments on the shores of water bodies, environmental pollution and irrational exploitation of natural resources;

74.2. Disappearance of populations of species due to disturbance of their individuals, unintentional eradication or irrational use of their resources, destruction of migration routes of migratory animals or decline in the migration conditions. Changes in the methods of use of areas and the hydrological regime lead to the increased fragmentation of natural habitats and local populations of species, the decline in the migration conditions for species and the conditions for genetic exchange of isolated local populations; therefore, their survival is threatened. For example, the European bison is one of the most strictly protected fauna species not only in Lithuania but also in Europe. The first European bison in Lithuania were placed in enclosures at a bison breeding centre established in 1969 in Pašiliai forest, Panevėžys district. The European bison population remained stable for over several decades and amounted to 30-

40 animals. Over the last decade, the population has been annually increasing by 10 to 18 animals, and currently about 100 European bison live in freedom in the territory that is not suitable for this species to continue its natural expansion due to small fragmented forests, intense farming and damage caused by European bison to crops (damage caused by European bison to crops increased from LTL 41,600 (EUR 12,000) in 2007 to LTL 415,000 (EUR 120,000) in 2013).

74.3. Spread of invasive alien flora and fauna species which overtake the habitats of local species or destroy the ecosystem balance. Many new flora and fauna species have spread or are actively spreading in Lithuania, of which 39 species have been assessed as being extremely dangerous invasive alien species due to their rapid spread and ability to occupy new habitats and their extremely adverse impact on ecosystems and local species. Furthermore, some invasive alien species also threaten public health and cause great damage to the economy, and large expenses are required to control or exterminate these new species. Climate change and the growth of industry and tourism can aggravate the problem of invasive alien species unless the proper legal regulation and education of the public are in place;

74.4. Absence of a single authority with national responsibility for the continuous collection and analysis of biodiversity data and the development

and support of information systems for the collection of data on natural habitats and protected species; therefore, devoting the required attention to the conservation of biodiversity and drawing up and coordinating economic plans and projects are impossible, and assessing the status of biodiversity and planning environmental actions are more difficult;

74.5. The system of monitoring and assessment of the biodiversity status has not been developed. The monitoring system of the status of protected areas should be improved. The lack of reliable data on the status of protected values, the spread of invasive species, the abundance of their populations and damage caused by them to local species makes it difficult to assess the information on undesirable trends in due time and take timely measures needed to improve the situation and avoid losses. Only the continuous monitoring of landscape and biodiversity (also in protected areas) can help prevent potential losses.

74.6. Consumer-oriented approach of society to nature and land. Due to the insufficient awareness about the cumulative impact of human activities on ecosystems, benefits provided by undamaged ecosystems and the cost of future loss, the public appreciates biodiversity inadequately. It is estimated that, with the current trends prevailing, the global extinction of biodiversity of terrestrial ecosystems alone will cause a 7% loss of the GDP by 2050.

74.7. The traditional method of biodiversity conservation, viz. to protect individual species or individual areas that are valuable for their biodiversity, is insufficiently effective. Efforts are made in Europe and worldwide to protect valuable national landscapes, habitats and other important elements of biodiversity, and to account, preserve and restore destroyed or weakened functions of ecosystems. Lithuania has legally and spatially formalised the natural frame system; however, any further development of this system or strengthening and restoration of its ecological functions may be limited due to the insufficient scientific knowledge of biodiversity and ecosystem functions. In this respect it is important to provide an ecosystems inventory and assess the quality of their functions, and develop and support the system of collection and updating of scientific information on important biodiversity objects and functions of ecosystems;

74.8. Climate change threatens the landscape stability, ecosystem functions and biodiversity. Establishing the impact of climate change is made difficult as research on the impact on landscape, ecosystems and biodiversity, especially studies based on long-term observations, carried out in Lithuania is clearly inadequate. The seasonal changes in the migration times and directions and the abundance of populations of individual animal species observed over the last few decades can be associated with climate change. As

a result, research and conservation of biodiversity, flora and fauna, designation of protected areas and especially their maintenance are sometimes performed in Lithuania without due consideration to natural processes and climate change. A comprehensive study on biodiversity has not been conducted in Lithuania yet; therefore, it is difficult to answer the question of how climate change does or will affect biodiversity in our country in future.

The system of protected areas developed for the conservation of landscape and biodiversity covers 15.71% of Lithuania's land area (5% in 1990), and most of these areas are incorporated in the European ecological network Natura 2000 as areas important for the conservation of birds and habitats. The national protected areas and areas of the European ecological network Natura 2000 jointly amount to approximately 17% of the country's territory. The status of protected areas is mostly affected by the development of construction and infrastructure required for intensive recreation, the disappearance of the traditional extensive farming and the increased use of private forests. Merely designating protected areas is not sufficient; the necessary legal, administrative, planning, information, education and other preconditions for achieving the targets for protected areas should be provided, specific conservation and maintenance measures should be implemented, damaged complexes

and sites should be restored, regular maintenance of protected sites open to the public should be ensured, the traditional land use in protected areas should be promoted, and the population in protected areas should be more actively involved in their conservation and maintenance. The use of genetic resources (wild flora and fauna, and microorganisms) for scientific and commercial purposes has a significant impact on biodiversity conservation; therefore, the conservation of genetic resources (wild flora and fauna, and microorganisms), environmentally-friendly uses of genetic resources as well as an honest and fair sharing of benefits from the use of genetic resources should be encouraged. Lithuania is rich in natural plant species and engineered plant varieties; currently, Lithuania has more than 4,000 objects identified that are included on the lists of national plant genetic resources. The conservation of national genetic resources, the use of imported genetic resources and the sharing of received benefits should be properly regulated, as these are important for the restoration of genetic resources and biodiversity conservation.

Key policy implementing directions

75. Optimisation of natural, agrarian and urbanised areas with a view to preserving the distinctiveness of the country, landscape and biodiversity and ensuring ecosystem viability.

Lithuania should give increasingly more efforts to the spatial coordination of development and conservation objectives and the implementation of ideas on sustainable development. To ensure the socio-economic and ecological functions of the formation of the Lithuanian landscape, the formation of landscape should be based on the knowledge of the territorial spatial structure, morphological processes, historical development and values, good practice of landscape formation in other countries and within the feasibility limits of strategic and territorial planning documents.

76. Promotion of sustainable development of urbanised areas. To achieve that the developed cultural landscape is biologically complete, informative, aesthetical, socially acceptable, convenient and economical, due consideration should be given to its nature, values, functions and development characteristics. The quality of territorial planning solutions should be improved, the reuse of areas for construction (conversion) should be encouraged, natural and semi-natural areas should be conserved and adapted to visitors, and conservation of cultural landscape, planting of green areas of separate and common use and maintenance of green areas and green plantations should be ensured, and public awareness of landscape as one of the key factors shaping the residential environment should be raised. The territory should be used in a rational way: the economic development should involve only areas that are needed,

and a ratio of anthropogenic, agrarian and natural areas and the spatial structure of the natural frame should be maintained so as to preserve and support ecosystem functions, landscape and biodiversity.

77. Restoration of damaged landscape areas. To ensure the continuity in eliminating reasons for disturbing the hydrological regime of water bodies and the rehabilitation of their status and the elimination of pollution from industrial, storage, quarry and other damaged areas; also to ensure the removal of abandoned and unused derelict structures and industrial facilities and rectification of their area, as well as the renaturalisation of damaged areas. The rehabilitation of damaged landscape areas will reduce the visual landscape pollution and increase the recreational potential of rectified areas and local development opportunities.

78. Optimisation of land use and the territorial structure of landholdings, and the promotion of traditional special planning and management activities. To ensure that the spatial organisation of human activities is performed in line with solutions of territorial planning documents of various levels and types, and that sustainable landscape is created, maintained and preserved with due consideration to social, economic and ecological public interests and in coordination of such interests.

79. Conservation, proper restoration and sustainable use of the Baltic Sea coastal area by ensuring the balance

among the interests of the use and conservation of this coastal area. To stabilise the coastal strip extending from the sea to the protective dune ridge on the beach that was only 50–70 m wide in 2011. Lithuania's seacoast stretches for a mere 90.66 km; therefore, priority in using the coastal area should be given to recreational targets and targets for the conservation of seacoast landscape and biodiversity. Engineering measures for coastal area management should be used only in case of any extreme threat to human safety.

80. Strengthening of the natural frame and ecosystem functions and services by preserving and enhancing the integrity of the network of the natural frame areas, maintaining the general forest coverage of the country, supporting traditional extensive farming methods, providing conditions (using conservation and restoration measures) for the natural formation of vegetation types and animal populations and their migration routes, conservation of streams and natural waterways or restoration of damaged streams or natural waterways, also by regulating the urbanisation level in areas with a preserved high degree of naturalness, promoting the planting and conservation of green areas of separate and common use and, in agrarian areas, encouraging organic farming and the use of agrarian environmental protection measures. The formation of the natural frame and the ecological network should be

defined in documents on integrated territorial planning at all levels; also, plans for the maintenance of separate areas of the natural frame and/or the ecological network should be drawn up and implemented, and these plans should provide for specific measures to preserve the landscape structure, strengthen ecosystem functions and services, conserve species and communities and improve conditions for their existence.

81. *Development of research on landscape and biodiversity and ecosystems* by providing conditions for adopting decisions on economic development with no damage to landscape, biodiversity and ecosystem functions and genetic resources of wild flora and fauna and microorganisms. The knowledge of landscape in terms of morphology, process, perception, resources and projects should be intensified, and the development of respective studies (especially on picturesque and eco-sensitive areas) should be encouraged. Landscape monitoring should be developed and performed systematically at the national, regional or local level, proper management and convenient presentation of such data as well as free customer access to these data should be ensured, and guarantees should be provided that such data are used for territorial and strategic planning. The system of collection and updating of scientific information on genetic resources of wild flora and fauna and microorganisms, biodiversity objects

and ecosystem functions and services should be developed and supported, and the practical use of this knowledge in decision-making processes should be improved.

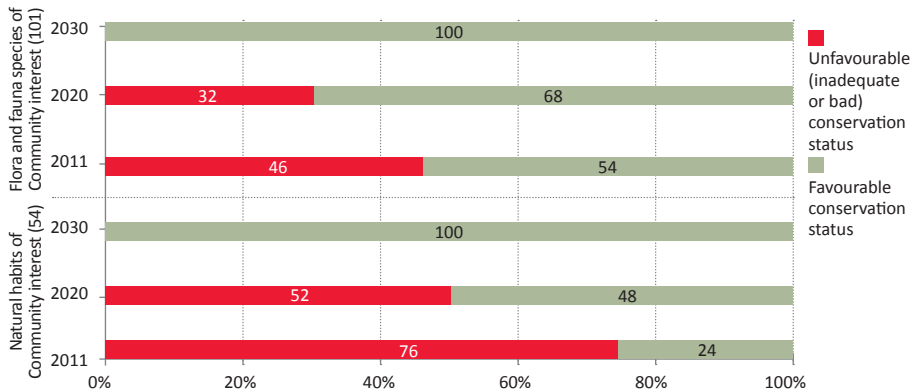
82. *Designation, provision of legal protection and maintenance of areas featuring most valuable landscapes and a major accumulation of biodiversity values.* To designate areas of extreme natural value that lack due protection and hence are vulnerable, and provide them with due protection by 2020.

83. *Conservation of protected flora and fauna species and habitats.* To achieve the favourable conservation status of flora and fauna species and habitats of Community interest located in Lithuania by 2030. Much attention should be paid to the conservation and increase of the European bison population in Lithuania by minimising the agricultural impact. For this purpose, areas more suited for conserving a viable European bison population should be selected and equipped with adaptation enclosures designed to prepare European bison for life in freedom (*Figure 10*).

84. *Adaptation of landscape, ecosystems and biodiversity to climate change.*

To assess the sensitivity of landscape, ecosystems and biodiversity, especially in the fisheries, forestry and tourism sectors, to climate change, the threat of climate change to these sectors and their capacity for adaptation. Drawing on the experience of the European Environment Agency, EU and/or other countries and on the analysis and the assessment and conclusions

Figure 10. Conservation status of flora and fauna species and habitats of Community interest in Lithuania



Source: Ministry of Environment.

of comparative studies available, to provide for the most efficient measures for adaptation to climate change and a system for assessing progress.

85. *Extermination of invasive alien flora and fauna species* through the use of various extermination measures and methods, *and halting of their spread* by strengthening control, analysing methods of spreading, raising public awareness and improving the legal framework.

86. *Reduction of direct threats to biodiversity*, including the discontinuation of support measures with an adverse impact on biodiversity. To achieve that bird populations in agrarian landscape become stable by 2020 and increase in 2020–2030.

87. *Preservation of genetic resources*

of wild flora and fauna and microorganisms. Lithuania will seek to develop an efficient management system for genetic resources of wild flora and fauna and microorganisms, which would provide for the conservation of such resources, their sustainable use, measures protecting them from degradation, decline or total destruction, thereby ensuring their identity and integrity and the conservation of biodiversity.

Biosafety

88. **The objective in the field of biosafety shall be to ensure safe performance of activities that involve the development, handling, use, transfer or release of living modified organisms**

(genetically modified organisms and microorganisms) (hereinafter 'GMOs') resulting from modern biotechnology, which may have adverse effects on the conservation and sustainable use of biological diversity.

Irrespective of whether they are released in large or small quantities for experimental purposes or as commercial products, GMOs can multiply in the environment and cross state borders, thus affecting other countries as well. The impact on human health and the environment from such releases can be irreversible. Due to the lack of research, assessments of GMO threats in Lithuania are incomplete and fail to consider their socio-economic impact.

Genetically modified plants are not cultivated in Lithuania; however, a spontaneous risk of GMO spread is possible. According to the control data available, no GMOs were detected and no cases of GMO spread in the environment were identified before 2014; however, people may bring GMOs from abroad, multiply and spread them without even knowing it. GMO risk monitoring and control carried out in Lithuania are inadequate. In view of the rapid global development of new methods for genetic modification and GMOs with more than one gene modified, the GMO risk monitoring and control system should be strengthened.

The development and efficient implementation of this policy are influenced not only by coordinated activities of public authorities based on the precautionary principle, but also by

public information and participation in the decision-making process regarding the use of GMOs. The public activity is determined by the perception of the importance of biosafety, objective knowledge and detailed and intelligible information. According to the data from surveys commissioned by the Ministry of Environment, the Lithuanian public lacks information on GMOs, viz. in 2007, 44% of the respondents stated that their information on GMOs was not sufficient; in 2009 the number of such respondents stood at 43%, in 2010 at 50% and in 2012 at 56.3%.

Key policy implementing directions

89. Improvement of the system for the GMO identification and risk management. The focus should be on ensuring the research-supported assessment of the GMO threat to human health and the environment and the integration of socio-economic aspects into the research-based assessment of the GMO impact.

90. Improvement of the GMO monitoring and control system. The focus should be on enhancing the GMO monitoring methods and GMO control measures.

91. Promotion of public participation in decision making on the use of GMOs. The focus should be on raising the awareness of the Lithuanian public on biosafety issues by improving public education and information about GMOs.

CHAPTER VI

C H A P T E R VI

C H A P T E R VI

STRATEGY IMPLEMENTATION MEASURES

92. Legal regulation of environmental protection. With a view to developing available, controllable and more stable legal measures to ensure the efficient prevention of environmental protection violations, elimination of violations and their consequences and the protection of public interest, the drafting of new laws and regulations or the improvement of existing legal acts should devote more attention to the implementation

mechanism. Amendments to the adopted provisions should be as rare as possible, and the requirements should focus on long-term implementation objectives. New legislation should also be drafted considering its intended level in the hierarchy of legal acts. A possibility for adopting decisions at the lowest institutional level based on the competence in the legislative process should also be assessed. This would



simplify coordination procedures and ensure efficient decision-making. In the field of environmental protection it is important to formalise and ensure the application of all legal measures, such as bans, fees, economic sanctions, administrative and other penalties, and to properly regulate their implementation mechanisms. It is critical to ensure that legal liability is provided and applied both to natural persons and legal entities and that criteria for the qualification of infringements and/or irregularities and criminal offenses are explicit, specific and reasonable, with due consideration to the circumstances of committed violations and/or offences or crimes, damage caused to the environment, the extent of such damage, conditions for the restoration of the environment, etc. All this should be regulated in legal acts with a view to stating explicitly what legal measures should be used to eliminate violations and their consequences.

Legal measures applied in the field of environmental protection should have a positive impact on human and public awareness and the behaviour of the public and individuals, and promote sustainable use of natural resources. They should be preventive, viz. they should prevent new violations. Much attention should be paid to the assurance of public interest through the application of legal measures. Legal measures should be ensured along the following lines:

92.1. Establishing responsibility for both natural persons and legal entities

and mechanisms for invoking such responsibility in general and special laws;

92.2. Establishing a more detailed mechanism of preventive measures and ensuring its application;

92.3. Establishing rules of environmental law to protect and ensure public interest;

92.4. Ensuring the compatibility of the rules of law establishing administrative, criminal and civil liability and other rules in order to avoid conflict;

92.5. Harmonising the principles of application of legal measures with the principles set out in EU legislation.

93. Environmental standards and regulations. The drafting and application of environmental standards and normative documents that provide for environmental regulations are among the most important tasks in the implementation of environmental protection policy. In the development of a national system of environmental quality standards and regulations, the EU standards are taken into consideration using data from systems of environmental monitoring and control of pollution sources and from industrial and agricultural pollution inventories, and assessing considering the possibility to implement best technology and analysis methods for ensuring compliance with the environmental quality standards. Much attention should be paid to ensure compliance with the strict safety and quality standards and regulations for publicly supplied drinking water and ambient air quality, mitigation of

ambient air pollution, treatment of collected wastewater and increase of wastewater collection, decrease of diffuse agricultural pollution, use of more resource-friendly fishing gear and methods, and reduction of soil contamination with hazardous substances.

94. Economic measures shall include economic and financial measures intended to affect the behaviour and decision-making of economic operators related to environmental protection, reduction of environmental pollution and efficient exploitation of resources. With a view to implementing long-term environmental objectives, economic measures will be used as incentives for a transition from the consumer-oriented to the green economy (low carbon economy with no adverse impact on climate change, marked by sustainable use of resources):

94.1. Environmental taxes and use of revenues. An effective tax system is under development, which would be more favourable to environmental protection and economic growth, encourage the redistribution of the tax burden through higher environmental taxes and reduced taxation of the workforce. The aim is to establish a reasonable tax rate that would include all environmental protection costs and promote the implementation of environmental measures and environmentally-friendlier technologies, but that would neither suppress the economic development nor cause any

undesirable structural changes in the economy. To achieve that environmental tax funds are used as financial incentives for encouraging economic operators to efficiently comply with the established environmental protection requirements, seek optimal environmental measures and implement low-waste and low carbon technologies;

94.2. Environmentally harmful subsidies.

A transition from environmentally harmful subsidies (subsidies provided by the state that create conditions (preconditions) for consumers or producers to increase income or reduce costs, which the result in the degradation of the environmental status) to subsidies promoting sustainable development is encouraged. Environmentally harmful subsidies do not promote the search for ways to reduce the generation of waste and emissions, to preserve natural resources and to reduce environmental damage. These subsidies enable companies to apply inefficient production methods and do not motivate them to invest into green technology;

94.3. Emission allowances. Emissions trading encourages companies participating in the emissions trading scheme to invest in environmentally-friendly technologies or acquire emission allowances at an auction, if the quotas allocated for them are exceeded. Funds received from the auctioning of emission allowances are used to promote the use of renewable energy resources, install environmentally-

friendly technologies and implement projects that increase energy production and consumption efficiency;

94.4. Deposit scheme. To achieve the set targets for the recycling or other uses of waste, the packaging deposit scheme is being improved with including more diverse types of packaging (e.g. glass, tin, etc.);

94.5. Green public procurement. The development of the green public procurement scheme is promoted. To achieve that the green procurement criteria apply to public procurement of supplies, services and works having a substantial environmental impact. This will encourage the sustainable use of natural resources, reuse and recycling of products, increased use of renewable energy resources and development of environmental technologies, and will increase the supply of environmentally-friendly goods, services and works;

94.6. Financial support. Lithuania seeks to allocate EU and other support to the fields with the highest demand for the development of new basic infrastructure and the best potential for addressing environmental protection problems effectively, through priority given to the funding of projects marked by a high level of environmental protection;

94.7. Loans. Once the required basic infrastructure is in place in income-generating sectors (i.e. waste management, water supply and wastewater management), companies operating in these sectors should begin pursuing economic viability. Any further

development of these sectors requires the use of financial engineering, viz. a method to use funds not as a one-off non-repayable subsidy, but rather to lend these funds by investing them into the corporate capital and receiving return on investment;

94.8. Guarantee scheme. State guarantees enable the borrower to obtain a loan under financial conditions that are more favourable than the usual financial market conditions.

On receiving a state guarantee, the borrower can usually benefit from a loan under preferential conditions, which shall apply to interest or the deposit amount. The benefit provided by a state guarantee is that the state assumes the risk related to the guarantee. With a view to implementing environmental protection objectives, this financial instrument is used within the framework of the programme for renovation (modernisation) of multi-apartment buildings.

95. Environmental monitoring.

To ensure that the environmental monitoring data on the environmental status and its changes caused by anthropogenic impact are reliable and sufficient, the environmental monitoring scheme should be improved by:

95.1. Strengthening the coordination of activities among authorities engaged in the state environmental monitoring in order to exchange information more efficiently and ensure greater opportunities for using the data for management decisions;

95.2. Improving and supporting

the scheme of monitoring and assessment of the status of biodiversity components, with a particular focus on research of protected species and their habitats, natural habitats and invasive species, studies related to the assessment of the impact of ambient air pollution on natural and semi-natural ecosystems, with a view to complying with EU requirements, international obligations and societal needs;

95.3. Ensuring funds sufficient to implement measures of the state environmental monitoring that meets international and national needs, enhancing the capacity of environmental research laboratories, providing timely support and upgrading of laboratory equipment, and developing the accreditation of environmental research laboratories in order to fulfil obligations to the EU and other international environmental protection organisations on time and with quality;

95.4. Improving and supporting the scheme of the national and municipal air monitoring, with a larger focus on the development of monitoring of persistent organic pollutants in order to ensure the assessment of ambient air quality and the improvement of the national system of accounting for air pollutants in compliance with EU requirements, international obligations and societal needs;

95.5. Improving and supporting the scheme of the state monitoring of water and the assessment of water status, especially through the focus on research

of hazardous and other controlled substances, as well as research related to the assessment of the impact of ambient air pollution on freshwater ecosystems, with a view to complying with EU requirements, international obligations and societal needs;

95.6. Developing the intensive monitoring network of forest ecosystems, with a focus on the recording of indicators of changes caused by climate change and their impact on forest ecosystems (currently there is no continuous monitoring of metrological effects in forest ecosystems), and on research related to the assessment of impacts from ambient air pollution;

95.7. Improving the system of monitoring and forecasting the soil status and the development of undesirable geological effects on slopes and karst land, by developing a state monitoring scheme for monitoring the soil status and its changes caused by ambient air pollution, ensuring the comparability of results at EU and international level and renewing laboratory soil research equipment and software.

96. State control of environmental protection. An efficient scheme of state control of environmental protection should be in place, with a view to ensuring legality, law and order in the field of environmental protection and utilisation of natural resources. For this purpose, it is necessary to:

96.1. Lay down explicit legal requirements regulating utilisation of

natural resources and environmental protection, and simple and explicit state control procedures for environmental protection that would be equally comprehensible to both the economic operator and the official conducting state control of environmental protection;

96.2. Develop an effectively operating system of authorities engaged in state control of environmental protection, which would be capable of responding to new environmental protection needs in an expedient and efficient way and would closely cooperate with other supervisory public authorities;

96.3. Direct the activities of state control of environmental protection towards the inspection of economic operators posing the highest risk, with a focus on cooperation with economic operators, their information and consultation, and implementation of other preventive measures that help economic operators to comply with legal provisions;

96.4. Encourage environmental protection inspectors working part-time to provide full assistance to authorities and officials conducting state control of environmental protection;

96.5. Enable the public to receive information on completed inspections and their results, sanctions imposed on persons who have violated legal acts on environmental protection and utilisation of natural resources;

96.6. Improve the competence and skills of officials involved in state control of environmental protection, provide the

required conditions for the effective performance of control and develop an efficient incentive scheme for such officials.

97. Sustainable territorial planning.

The territorial planning system, the assessment of environmental requirements and their integration into solutions while drawing up complex and special planning documents will be improved with a view to ensuring the ecological balance in the country and the efficient national management and implementation of the state and regional environmental policy. To this end, electronic services for drawing up and registering documents and monitoring the implementation of solutions in the field of territorial planning should be set up and developed, and the information system of drawing up documents on territorial planning and state supervision of territorial planning, the register of territorial planning documents, the information system of monitoring of territorial planning and the information system of building permits and state supervision of construction should be developed or modernised. This will allow better managing the territorial planning process and monitoring the implementation of territorial planning and the master plan of the territory of the Republic of Lithuania.

98. Strategic assessment of effects

on the environment. A full and efficient strategic assessment of the effects of plans and programmes on

the environment should be applied in order to identify potentially significant effects on the environment caused by the implementation of plans and programmes.

99. Environmental impact assessment.

With a view to improving the effectiveness of environmental impact assessment and avoiding any significant adverse environmental impact of the proposed economic activity, it is necessary to:

99.1. Seek proper regulation in this field (activities subject to environmental impact assessment should be identified explicitly, the possibility for public participation in decision-making should be improved and the requirements for drawing up environmental impact assessment documents should be clearly defined);

99.2. Ensure efficient transboundary environmental impact assessment in order to identify any significant adverse impact of the proposed economic activity not only on Lithuania's environment but also on that of the neighbouring countries. Ensure that the neighbouring countries provide reliable, detailed and expedient information about any significant adverse impact of planned economic operations on the environment of Lithuania.

100. Environmental labelling represents an environmental preventive measure to promote sustainable consumption by informing the consumer about the environmental impact of services or products. For promoting sustainable

consumption, it is necessary to:

100.1. Promote the use of eco-labels and other forms and labelling of eco-information, which would enable

consumers to compare environmental characteristics of competing products; 100.2. Promote the application of reliable environmental requirements published by consumers themselves and prevent any misleading requirements.

101. Environmental management

and audit systems allow continuously improving environmental protection efficiency for authorities of all types (developing environmentally-friendly corporate or other culture) and expanding the green market and increasing the social responsibility of entities and active cooperation with partners in the field of environmental protection. Therefore, the business community and the public should be introduced to advanced businesses and other authorities that have the lowest environmental impact, as well as to other measures for publicising and promoting the implementation of environmental management and audit systems.

102. Integrated pollution prevention and control system.

To reduce the hazardous (adverse) environmental impact of pollution from stationary economic facilities and avoid any transfer of pollutants across different environmental media, an integrated pollution prevention and control system that includes water, air and soil

protection and waste management measures should be implemented efficiently.

103. Environmental research. With a view to ensuring that adopted decisions are based on the latest scientific knowledge, long-term applied scientific programmes should be developed and promoted, which would contribute to the implementation of the Strategy, and improved coordination of environmental research should be ensured in order to use its results in a better way. Therefore, efforts will be made to:

103.1. Develop research on the reduction of environmental pollution and the improvement of quality, as well as on sustainable use, conservation, restoration and enhancement of natural resources by ensuring that economic development decisions are taken without causing any harm to the environment;

103.2. Improve coordination of activities and cooperation among science, studies, business and public and private sectors.

104. Data and information management. The availability of comprehensive, reliable and relevant information and data on the environmental status, the key trends of its changes and the anthropogenic impact on the environment, as well as the comparability of such information and data with those from other countries are among the key factors that provide reliable grounds for making justified and efficient decisions to shape

and improve the implementation of the environmental protection policy and also, in proposing economic activities, create conditions for avoiding any long-term adverse effects and increasing the citizens' role in the field of environmental protection. Therefore, the principal aim is to maintain and improve the quality and availability of information required for the environmental policy and to reduce the related administrative burden. To this end, efforts will be made to:

104.1. Ensure the availability of reliable and most recent data and information for all stakeholders (government politicians, state and municipal authorities and institutions, entrepreneurs and public at large) in a convenient form (enlarge the capacity of the Integrated Computer System of Environmental Information Management that comprises water, radiological, chemical, water and air pollution data and data from other environmental sector registers and cadastres, and improve the accessibility and usability of the State Geological Information System);

104.2. Unify the data format for accumulating, verifying, storing and transmitting information on the environmental status, utilisation of natural resources, landscape and biodiversity and further environmental protection information to EU institutions;

104.3. Establish or upgrade information society services for the population or

business, or business infrastructure by providing all businesses with equal opportunities to use this infrastructure (the electronic System of Environmental Permits and the Information System of Territorial Planning Process Control have been developed and installed, and the Register of Territorial Planning Documents has been modernised);

104.4. Applying the most up-to-date information technologies, geographic information systems (GIS), global positioning systems (GPS) and technologies of common usage of computer resources (GRID), design and develop smart management systems in the field of geodesy (horizontal and vertical management) and the environment (environmental monitoring, territorial planning and environmental quality management) at national and municipal level;

104.5. Improve the collection and presentation of information and data in line with the principle 'do once, use many times', i.e. enable the use of common information resources (install electronic spatial environmental data collection and monitoring tools for sectors to exchange and share coordinated spatial data at EU and transboundary level). Higher quality information at national, regional or local level would help to identify the key problems and the most suitable and efficient solutions;

104.6. Implement information systems related to the provision of environmental information to persons

using the one-stop shop solution;

104.7. Develop the system of economic environmental accounts that would allow to monitor the environmental impact of the economy and analyse ways to reduce it;

104.8. Reinforce the development and application of Earth observation technologies (e.g. satellite) and measures that help to shape and implement the environmental protection policy.

105. Public participation, information and education on environmental protection issues. Public participation is one of the key factors for the successful implementation of the Strategy.

Therefore, efforts will be made to:

105.1. Achieve that the public have access to information on environmental issues, are informed about environmental problems and show an interest in addressing them. Competent authorities should provide the public with more information on environmental protection requirements adopted and should raise public awareness;

105.2. Achieve that the public have an opportunity to participate in decision-making on environmental issues;

105.3. Achieve that the public have an opportunity to use efficient legal measures in defending legitimate environmental interests and implementing the requirements of legal acts;

105.4. Achieve that the public have the knowledge, skills and experience

required for the implementation of environmental protection targets;

105.5. Disseminate information to the public on their rights in the environmental field and provide related information, thereby encouraging the public to participate in decision-making on environmental issues;

105.6. Inform the public about national and international solutions and agreements, policy guidelines and other important documents, the environmental status and activities that have or might have an impact on the environment;

105.7. Increase public environmental awareness and activity and foster environmental competencies through continuous public information and education on their environmental impact and possibilities for choosing more environmentally-friendly ways of action or solutions;

105.8. Pursue the targets set forth in the Strategy by including environmental protection and sustainable development themes into various formal and non-formal education programmes;

105.9. Promote closer cooperation with environmental community-based organisations.

106. **International cooperation.** Close and active international cooperation will

be promoted in order to successfully solve transboundary environmental problems (protection, use and pollution of Baltic Sea water, other surface water and groundwater, maritime spatial planning, river basin management, strategic assessment of environmental impacts and the proposed economic activity, climate change, air pollution, conservation of biodiversity, etc.) and improve the transboundary prevention of environmental pollution, by giving priority to close cooperation with Latvia, Estonia and other countries in the Baltic Sea region. In a joint effort to solve regional and global ecological problems, Lithuania will promote the development of economic, scientific and technical relations, the solution of regional environmental in a bilateral and multilateral context, the cross-sectoral solution of environmental problems by integrating environmental aspects into various fields of economic development, and increased effectiveness of national and international measures intended for environmental protection. Efforts will be made to ensure that countries regularly exchange relevant information on the environmental status and any environmental emergency, and promptly take joint action in emergency response.

CHAPTER VII

C H A P T E R VII

C H A P T E R VII

FINAL PROVISIONS

107. With a view to implementing the Strategy provisions, it is important to integrate the environmental protection policy into other sectors, especially the agricultural, energy and transport sectors; therefore, the implementation of the Strategy involves the ministries, public and municipal authorities, non-governmental organisations and other social partners.

108. The implementation of the Strategy is coordinated by the Ministry of Environment.

109. The implementation of the Strategy is regulated by the following national planning documents for the environmental and economic sectors: the National Progress Programme for the period 2014–2020 approved by Resolution No 1482 of the Government



of the Republic of Lithuania of 28 November 2012 on the approval of the National Progress Programme for the period 2014–2020; the National Sustainable Development Strategy approved by Resolution No 1160 of the Government of the Republic of Lithuania of 11 September 2003 on the approval and implementation of the National Sustainable Development Strategy; the National Forestry Sector Development Programme for 2012–2020 approved by Resolution No 569 of the Government of the Republic of Lithuania of 23 May 2012 on the approval of the National Forestry Sector Development Programme for 2012–2020; the National Waste Management Plan for the period 2014–2020 approved by Resolution No 519 of the Government of the Republic of Lithuania of 12 April 2012 on the approval of the National Waste Management Plan for the period 2014–2020; the Baltic Sea Environmental Protection Strategy approved by Resolution No 1264 of the Government of the Republic of Lithuania of 25 August 2010 on the approval of the Baltic Sea Environmental Protection Strategy; the Drinking Water Supply and Wastewater Management Development Strategy for the period 2008–2015 approved by Resolution No 832 of the Government of the Republic of Lithuania of 27 August 2008 on the approval of the Drinking Water Supply and Wastewater Management Development Strategy for the period 2008–2015; the National Strategic Noise

Mapping Programme approved by Resolution No 581 of the Government of the Republic of Lithuania of 14 June 2006 on the approval of the National Strategic Noise Mapping Programme; the Lithuanian Health Programme 2014–2025 approved by Resolution No XII-964 of the Seimas of the Republic of Lithuania of 26 June 2014 on the approval of the Lithuanian Health Programme 2014–2025; the Landscape Policy Directions of the Republic of Lithuania approved by Resolution No 1526 of the Government of the Republic of Lithuania of 1 December 2004 on the approval of the Landscape Policy Directions of the Republic of Lithuania; the National Strategy for Climate Change Management Policy approved by Resolution No XI-2375 of the Seimas of the Republic of Lithuania of 6 November 2012 on the approval of the National Strategy for Climate Change Management Policy; the State Environmental Monitoring Programme for 2011–2017 approved by Resolution No 315 of the Government of the Republic of Lithuania of 2 March 2011 on the approval of the State Environmental Monitoring Programme, and other strategic planning documents contributing to the development of a healthy, clean and safe environment that meets the needs of the society, environmental protection and economy in a sustainable way.

110. The implementation of the Strategy will be assessed on an annual basis by monitoring compliance with the

values of the assessment criteria; also, in 2020, an interim assessment of the implementation of the Strategy will be carried out, and the final assessment of the implementation of the Strategy will be performed in 2030.

111. The Ministry of Environment shall

provide annual information on the implementation of the Strategy in its annual operating report submitted to the Government of the Republic, and the interim and final reports on the assessment of the implementation of the Strategy shall be published.

ANNEX

ANNEX

**ANNEX 1 TO
THE NATIONAL ENVIRONMENTAL PROTECTION STRATEGY**

**THE ASSESSMENT CRITERIA AND THEIR PURSUED
VALUES FOR THE NATIONAL ENVIRONMENTAL
PROTECTION STRATEGY**



No.	Objective	Assessment criteria	Values of assessment criteria		
The strategic objective is to attain a healthy, clean and safe Lithuanian environment, which would also meet the needs of the society, environmental protection and economy in a sustainable way.					
1.		Environmental performance index, points	61	70	80
SUSTAINABLE USE OF NATURAL RESOURCES AND WASTE MANAGEMENT					
2.	To ensure a long-term rational and sustainable use and protection of national natural resources of importance to the functioning of the state, as well as the restoration and, where possible, enhancement of renewable natural resources by providing conditions for sustainable economic development.	Forest coverage (ratio of forest land area to total land area of the Republic of Lithuania), percent	33.3 (2013)	34.2	35
3.		Ratio of forest fellings to increment, percent	43	50	50
4.		Fish stock sustainability index (values: stock status is good (< 0.35), poor (0.35–0.44) moderate (0.45–0.54), good to moderate (0.55–0.64) or good (> 0.64)	0.5	0.6	0.64
5.		Share of areas restored and adapted to recreational or other needs, previously damaged by mining operations, percent	70	95	100
6.		Share of the country area where spatial geological mapping at a scale of 1:50 000 was performed, percent	48	56	80
7.		Moose population density (individuals per 1,000 ha of forest) (by the prevailing forest type)	1–4	1–4	1–4
8.		Red deer population density (individuals per 1,000 ha of forest (by the prevailing forest type)	6–15	6–15	6–15
9.		Roe population density (individuals per 1,000 ha of forest (by the prevailing forest type)	15–55	15–55	15–55
10.		Annual number of wolves (individuals)	250	250	250
11.		Ratio of the number of hunted beavers to the estimated beaver population, percent	2.5	3–5	3–5
12.		Drinking water loss in networks, percent	30 (2011)	25	18

No.	Objective	Assessment criteria	Values of assessment criteria		
			2012	2020	2030
13.	To reduce the generation of waste, ensure waste management that is safe for human health and the environment and the rational use of material and energy resources of waste, thereby reducing the use of natural and other resources and the disposal of waste in landfills.	Share of total industrial and other economic activity waste (except phosphogypsum waste) recycled or otherwise reused, percent	90	No less than 92	*
14.		Share of municipal waste disposed in landfills of total annual municipal waste generated, percent	85	35	*
IMPROVEMENT OF THE ENVIRONMENT QUALITY					
15.	To ensure a good status of groundwater, inland surface water bodies, the Curonian Lagoon and the Baltic Sea; also, to ensure that surface water bodies meet recreational needs, while each and every resident of the country has access to drinking water that meets safety and quality requirements	Share of water bodies with good status, percent	54 (2011)	72	100
16.		Share of dwellings connected to the drinking water supply system, percent	76	83	100
17.		Share of dwellings connected to the sewage system, percent	67	81	100
18.	Protection and sustainable use of soil.	Total organic matter of soil, percent	3 (2010)	3	No less than 3

No.	Objective	Assessment criteria	Values of assessment criteria		
			2012	2020	2030
19.	To ensure that air pollution emissions in Lithuania do not exceed the volumes defined in international and EU legislation and that air pollution levels do not exceed the ambient air pollution level safe for human health and the environment.	Change in sulphur dioxide emissions compared to 2005 emissions, percent***	-15.5	-55**	-72**
20.		Change in nitrogen oxides emissions compared to 2005 emissions, percent***	-7.5	-48**	-55**
21.		Change in particulate matter emissions (PM _{2.5}) compared to 2005 emissions, percentage***	+7.89	-20**	-54**
22.		Change in emissions of non-methane volatile organic compounds compared to 2005 emissions, percent***	-12.7	-32**	-57**
23.		Change in ammonia emissions compared to 2005 emissions, percent***	-3	-10**	-10**
24.		Number of air monitoring stations where the estimated annual average concentration of particulate matter (PM ₁₀) in ambient air exceeded the limit value, units	0	0	0
25.		Number of air monitoring stations where the concentration of particulate matter (PM ₁₀) in ambient air exceeded the 24-hour limit value, units	3 (2013)	0	0
26.		Number of air monitoring stations where the concentration of particulate matter (PM _{2.5}) in ambient air exceeded the annual average target value, units	0	0	0
27.		Number of air monitoring stations where the concentration of benzo(a)pyrene in ambient air exceeded the annual average target value, units	4 (2013)	0	0

No.	Objective	Assessment criteria	Values of assessment criteria		
			2012	2020	2030
28.	To achieve the good radiological environmental status in Lithuania, the volume activity concentration of radionuclide Cs-137 in the Baltic Sea water (Lithuania's economic zone) should decrease from 35 Bq/m ³ to 14.6 Bq/m ³ in 2020, while the radiological pollution of air and inland water bodies should not increase.	Activity concentration of radionuclide ¹³⁷ Cs in the Baltic Sea water, Lithuania's economic zone, Bq/m ³	35	14.6	14.6
29.		Radiological pollution of air: average value of total beta activity in atmospheric depositions, Bq/m ² per day	0.1	< 2.5	< 2.5
30.	To protect the population from the harmful effect of ambient noise.	Share of people within agglomerations exposed to high-level (above 65 dBA L _{den} ¹) road traffic noise, percent	19	17	14
31.		Proportion of the population living in households considering that they suffer from noise, percent	13.3	12.6	11.4
32.	To reduce the use of hazardous chemical substances and mixtures as well as their adverse impact on human health and the environment.	The assessment criterion for monitoring the implementation of this objective will be set by the Ministry of Environment when the indicators for the monitoring progress towards meeting chemical policy targets of the 7 th Environment Action Programme (EAP) are agreed at EU level			
33.	To achieve a good quality of urban environment and simultaneously ensure sustainable development of the areas in the country as well as favourable conditions for the socio-economic development of urban areas.	The assessment criterion for monitoring the implementation of this objective will be set by the Ministry of Environment when the indicators for the monitoring progress towards meeting urban environment targets of the 7 th Environment Action Programme (EAP) are agreed at EU level			

¹ L_{den} – day-evening-night noise indicator

No.	Objective	Assessment criteria	Values of assessment criteria		
			2012	2020	2030
MAINTENANCE OF THE STABILITY OF ECOSYSTEMS					
34.	To protect landscape areas of various territorial levels and their geoeological potential by ensuring their proper maintenance, use, planning and sustainable development.	Ratio of the natural frame area (natural or semi-natural territories – forests, other plantations, marshes, waters, natural meadows, pastures and unused land) to the total land area of the Republic of Lithuania, percent	49.2 (01.01.2014)	60	60
35.		Improvement in the status of degraded ecosystems and their functions, percent	0****	15	
36.		Share of wild fauna and flora species of Community interest in Lithuania with favourable conservation status, percent	54 (2011)	68	100
37.	To halt the loss of biodiversity and the degradation of ecosystems and their services and, where possible, to restore them.	Share of natural habitats of Community interest in Lithuania with favourable conservation status, percent	24 (2011)	48	100
38.		Share of terrestrial area of Lithuania designated as protected areas and/or areas of Natura 2000 network, percent	15.7 (2013)	17	17
39.		Share of marine waters of Lithuania designated as protected areas and/or areas of Natura 2000 network, percent	2.4	10	10
40.	To ensure safe performance of activities that involve the development, handling, use, transfer or release of living modified organisms (genetically modified organisms and microorganisms) resulting from modern biotechnology, which may have adverse effects on the conservation and sustainable use of biological diversity.	Number of cases of unintentional placing on the market of genetically modified organisms and their spread in the environment	0	0	0

*The values will be determined after the European Parliament and the Council adopt a Directive of the European Parliament and the of Council amending Directive 2008/98/EC on waste, Directive 94/62/EB on packaging and packaging waste, Directive 1999/31/EC on the landfill of waste, Directive 2000/53/EC on end-of life vehicles, Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators and Directive 2012/19/EU on waste electrical and electronic equipment.

**The specified targets for the reduction of national emissions of pollutants are preliminary: the targets for the year 2020 are presented in the revised Gothenburg Protocol to the 2012 Convention on Long Range Transboundary Air Pollution and in the Proposal of the Council of 18 December 2013 for a Directive of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants and amending Directive 2003/35/EC. The targets for the year 2030 are presented in the Proposal of the Council of 18 December 2013 for a Directive of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants and amending Directive 2003/35/EC.

***The symbols '+' and '-' indicate an increase or decrease, respectively.

****The assessment will start in 2015 after the Ministry of Environment develops a methodology for assessment and conducts an inventory of the ecosystem status.

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The National Environmental Protection Strategy has been drawn up in order to define the priority areas of the environmental protection policy, long-term objectives up to 2030 and a vision for the Lithuanian environment up to 2050.

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