FOURTH NATIONAL REPORT OF THE REPUBLIC OF LITHUANIA TO THE CONVENTION ON BIOLOGICAL DIVERSITY

The Ministry of the Environment
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EXECUTIVE SUMMARY

Lithuanian ecosystems include natural and semi-natural (forests, bogs, wetlands, meadows), and anthropogenic (agrarian and urban) ecosystems. The most valuable Lithuanian ecosystems are: Lithuania‘s major oak-woods (their distribution is uneven, the most valuable of them have survived in the Central Plain of Lithuania (Naujamiestis oak-wood) Dzūkai (Punia wood) and Sūduva (Drausgiris) highlands, and in Kaunas city); hornbeam forests (at the edge of their range are unstable). Mature stands have remained only in protected areas. As regards to habitats of river valleys, out of 63700 km of natural rivers, only 13000 km have not been straightened, rivers in plains having suffered most. Small forest streams are centers of biodiversity; and valleys of big rivers typically a rich variety of habitats. They represent an important element of the Nature Frame (the Neris and Minija river-valleys). The most valuables bog and wetland habitats are a complex which includes wetlands in the Nemunas River delta, reeds and complex of flooded meadows and forests; large bogs - Čepkeliai, Kamanos, Artoji; shallow eutrophic lakes – Žuvintas and fishery ponds; wet and swampy forests - Rūdninkai and Žalioji woods. Speaking about coastal and marine habitats, the Lithuanian coast is 98 km long, with the coastal dunes, the Curonian Spit and former military training grounds as habitats of the greatest value. Natural meadow habitats include flooded meadows and continental meadows. In Lithuania, agricultural landscape with inclusions of natural components occupies ca. 60 percent of the country‘s territory. Utilized agricultural land makes ca. 54 % of the country‘s territory (6530 thou. ha), 70.5 % of them is arable land, 27.5 % - meadows and pastures. The rest is occupied by orchards and other land. Urban ecosystems occupy nearly 5% of Lithuania, of which 2.7% are built-up areas, the rest are roads. Built-up areas occupy an area of approximately 180 thousand hectares, are constantly increasing. During 2004-2008 there was a noticeable trend of expansion of built-up areas at the expense of parks and other urban plantations. This way biodiversity in cities is decreasing.

The status of biological diversity and biological resources in Lithuania is mainly influenced by the following processes: essential changes in the geo - ecological conditions due to land drainage in the Soviet period; intensive forest felling, destruction of small forests; damage of forest ecosystems as a result of natural disasters (droughts, pests, etc.) and pollution; changes in the ecological conditions of meadows due to a decline of economic activities there; intense use of chemicals in farming; increase fisheries and illegal fishing; sea pollution with industrial and municipal waste waters; uncontrolled growth of recreation activities in natural environment; destruction and decrease of natural landscape islands in urbanized environment; and development of road network, their load intensification, soaring numbers of motor vehicles.

Lithuanian biodiversity represents three large biogeographic units: Eastern Baltic, Central European and the marine province of the Baltic Sea. In broader biogeographic context, Lithuania belongs to the mixed broad-leaved spruce forest zone and is situated near its southern boundary. Borders of large phytogeographic units go across Lithuania: the north boundary of hornbeam (*Carpinus betulus*) separates the northern and southern broad-leaved - coniferous forests. Lithuanian biodiversity comprises over 20 000 animal, over 6500 fungi, and approximately 1800 plant species.

Like in other European countries, number of invasive alien species in Lithuania is rapidly increasing. Only 16 alien animal and plant species are declared alien and in need of

elimination, because they cause great damage to biodiversity, agriculture, industry and society. Approximately 548 of alien plants are known in Lithuania to this date, 46 of them are invasive, and another 60 – potentially invasive, as they might cause serious ecological problems in future.

Lithuanian biodiversity in natural and anthropogenic ecosystems and natural biological resources are affected by the following factors: habitat loss and their fragmentation (intensive felling, destroying of small woodlands and bushes, industrial forestry, when of only few productive tree species are grown, change of ecological conditions due to draining of big areas, changes of water temperature regime and migration routes due to damming small streams); increased recreational intensity in nature; development of road network and intensification of transport; excessive use of natural resources; soil, water and air pollution; introduction of alien and new species; global climate change; industrialization of agriculture and forestry.

In general it could be said that the National Biodiversity Conservation Strategy and Action Plan of the Republic of Lithuania (NBCSAP) is a rather comprehensive document and more or less covers the Convention on Biological Diversity Thematic Programmes and cross-cutting issues. However, as it was approved in 1998 and never updated since (even though it was prepared for a 20 year period and its revision was foreseen every 5 years), it is not surprising that some measures are out-of-date and several CBD targets/measures or Thematic Programmes are not addressed at all. For example, targets of the Global Strategy for Plant Conservation are not addressed in the NBCSAP; and of course, some issues that are not applicable for Lithuania (e.g. mountain biodiversity, coral reefs, island biodiversity, desertification, etc.), and therefore not addressed either. Although the NBCSAP was prepared for a 20 year period, it needs to be revised, especially in the light of the new decisions of the Convention, revised programmes and EU requirements. As one of the shortcomings of Lithuanian NBCSAP, the absence of national indicators should be mentioned (the effectiveness of the Action Plan is assessed not by indicators, but by its outcome). However, some good examples in the implementation of NBCSAP should be mentioned as well: in recent years, significant progress was made in designation of new protected areas; research and conservation of the marine environment has been strengthened; Lithuanian system of environmental impact assessment is rather good; species action plans are under preparation; a lot of nature management plans (addressing species and habitats conservation/management) were prepared and adopted (their implementation is ongoing); environmental NGOs became more active, etc.

The main obstacle to the implementation of the CBD is the lack of financial resources, since protection of biodiversity and sustainable use of natural resources is not a priority for the Government (economical interests usually override conservation interest). Due to the lack of finance it is not clear when the new NBCSAP will be prepared. It should be also stated that the domestic budget for nature conservation constitutes a small percentage of the national budget and even with the EU funds, the domestic budget for nature conservation should be increased. A lack of political will has been obvious during the reporting period.

The Ministry of Environment and its agencies are responsible for implementation of the Convention of Biological Diversity in Lithuania. Other ministries are involved in implementation through development of different sectors. Activities of the Convention cover a wide field of different sectors of the economy. Lack of coordination between different sectors should be addressed by strengthening involvement of other ministries and their implementing

agencies in conservation issues. Although Lithuania designated new protected areas, this process should follow the EU requirements. It is necessary to prepare and adopt protected areas strategy and protected areas selection criteria and to improve management of protected areas, especially in terms of involving different stakeholders more closely.

Lithuania has a few general strategic programmes that include the Master Plan of the Republic of Lithuania, the Lithuanian National Sustainable Development Strategy, the Long-term Development Strategy of the State, the Long-term Economic Development Strategy of Lithuania until 2015, the National Lisbon Strategy Implementation Programme, and the Programme of the Government of the Republic of Lithuania for 2008-2012. They state that factors of environmental protection will ensure a harmonious and sustainable development of Lithuania in line with the objectives of air, water and biological diversity programmes. The most specific of them all is the Government programme, having included preparation of biodiversity strategy and action plan, ensuring cross-sectoral coordination, integration of biodiversity into sectors of Lithuanian economy, promotion of better and faster implementation of international obligations in order to stop biodiversity loss etc. However, institutions responsible for implementation of these actions are mainly Ministries of Agriculture and Environment and in some cases Ministry of Transport. Even integration of biodiversity related issues into different sectors and preparation of new Biodiversity Strategy is to be implemented only by the three above ministries.

This division of responsibilities for biodiversity protection is reflected also in sectoral strategies. Most of the work, besides the Ministry of Environment, is being implemented by the Ministry of Agriculture under the Rural Development Programme for the period 2007 – 2013 that covers agriculture and forestry sectors, and the Operational Programme of the Lithuanian Fisheries Sector for 2007-2013. Lithuanian Ministry of Agriculture is doing a lot for integration of Nature conservation and biodiversity issues into its policies, but it is not yet sufficient for efficient protection of rare animal and plant species yet. The current agri - environment measures make a good basis, but in order to take maximum effect they need to have good level of uptake. As regards of the forestry sector, although the RDP measures are very positive, the challenge is the implementation and financing of sustainable forest management countrywide. To guide the overall implementation of sustainable forest management, national forest programmes/policies are important tools and co-operation with other stakeholders that have relevant information and experiences, including environmental NGOs, and exchange of experiences hereon would be of high value. Tendencies of survival of environmentally valuable areas and animal species, as well as the prospects of the sustainable development of the fisheries depend upon the timely and sound implementation of the objectives of the strategic documents which had been set out. Failure to implement them would result in the worsening of the condition of the environment in the inland waters. Although biodiversity related issues are not specifically mentioned in the strategic documents of the transport sector, there are a lot of ongoing activities for practical integration of biodiversity into this sector.

CHAPTER I. OVERVIEW OF BIODIVERSITY STATUS, TRENDS AND THREATS

1.1. Ecosystems and habitats

1.1.1. Present state review

Lithuanian ecosystems include natural and semi-natural (forests, bogs, wetlands, meadows), and anthropogenic (agrarian and urban) ecosystems. The most valuable Lithuanian ecosystems are: Lithuania‘s major oak-woods (their distribution is uneven, the most valuable of them have survived in the Central Plain of Lithuania (Naujamiestis oak-wood) Dzūkai (Punia wood) and Sūduva (Drausgiris) highlands, and in Kaunas city); hornbeam forests (at the edge of their range are unstable). Mature stands have remained only in protected areas. As regards to habitats of river valleys, out of 63700 km of natural rivers, only 13000 km have not been straightened, rivers in plains having suffered most. Small forest streams are centres of biodiversity; and valleys of big rivers typically a rich variety of habitats. They represent an important element of the Nature Frame (the Neris and Minija river-valleys). The most valuables bog and wetland habitats are a complex which includes wetlands in the Nemunas River delta, reeds and complex of flooded meadows and forests; large bogs - Čepkeliai, Kamanos, Artoji; shallow eutrophic lakes – Žuvintas and fishery ponds; wet and swampy forests - Rūdninkai and Žalioji woods. Speaking about coastal and marine habitats, the Lithuanian coast is 98 km long, with the coastal dunes, the Curonian Spit and former military training grounds as habitats of the greatest value. Natural meadow habitats include flooded meadows and continental meadows.

1.1.2. General trends and threats

The status of biological diversity and biological resources in Lithuania is mainly influenced by the following processes:
- essential changes in the geoecological conditions due to land drainage in the Soviet period;
- intensive forest felling, destruction of small forests which are of particular importance to the biological and landscape diversity, as a result of privatization;
- damage of forest ecosystems as a result of natural disasters (droughts, pests, etc.) and pollution;
- destruction of the biological diversity of ligneous plants as a result of use of selected tree species;
- changes in the ecological conditions of meadows due to a decline of economic activities there;
- intense use of chemicals in farming in the protection belts and zones near rivers and lakes;
- increasingly irrational use of water bodies after their privatization or lease;
- reversion of rivers and rivulets into ponds thus violating the thermal regime of hydro systems and destroying migration routes;
- intensification of illegal overall fishing in natural inland waters, increase of fisheries, inefficient stock-taking, collapse of the fish breeding system;
- pollution of the sea with industrial and municipal waste waters;
- formation of increased constant pollution zones in the natural environment of inland waters and intensification of succession processes in them;
- uncontrolled growth of recreation activities in natural environment;
- destruction and decrease of natural landscape islands in urbanized environment;

- development of road network, their load intensification, soaring numbers of motor vehicles.

1.1.3. Agrarian ecosystems

In Lithuania, agricultural landscape with inclusions of natural components occupies ca. 60 percent of the country's territory. Utilised agricultural land makes ca. 54 % of the country's territory (6530 thou. ha), 70.5 % of them is arable land, 27.5 % - meadows and pastures. The rest is occupied by orchards and other land. Mostly cereals and forage crops are grown in Lithuania. From 1991 until 2001, the total area of crops decreased by 26.5 percent. Due to this decrease, physical (agricultural machinery, monocultures) and chemical (fertilisers and pesticides) load on agricultural landscape was decreasing as well, so was the number of livestock farms and complexes. As the requirements of Nitrates Directive (NR) were started to implement in agricultural sector, a slight decrease of nitrates entering surface waters was recorded.

From 2004 till 2008, total crop area was slightly increasing – 2.63 million hectares of crop area were declared in 2006, while in 2008 – 2.7 million hectares.
Threats: further habitat deterioration is observed in regions with very productive and expensive lands, as the crop areas are expanded. Approximately 400 thousand he of agricultural land is not farmed, and acts as an ecological niche for weeds and invasive plant species. Part of the abandoned areas overgrew with scrub. Only small part of non-fertile lands is afforested. 3924 hectares of new forest were planted in 2008 – of this number, 1794 hectares were planted by a forest enterprises, and 2130 hectares – by private forest owners. Newly afforested areas made 0.18 percent of the total forest area.

1.1.4. Forest ecosystems

Forest is the most common semi-natural ecosystem, which requires attention because of its significant biological, economic and recreational functions. Lithuanian forest and scrubland ecosystems fall in 30 associations within the 6 classes. The prevailing coniferous forests fall into the class of boreal coniferous forests of Northern hemisphere (*Vaccinio-Piceetea*).
Lithuanian forest and thicket communities fall in 30 associations within 6 classes. The most widespread coniferous forests belong to boreal coniferous forests of northern hemisphere (class *Vaccinio-Piceetea*). Rich in communities deciduous forests belong to Central European broad-leaved and mixed forests (class *Querco-Fagetea*). In Lithuania they stretch near their northern distribution boundary, therefore, many of them are rare or very rare. Swamp forest and thicket communities belong to the class of eutrophic and mesotrophic swamp (*Alnetea glutinosae*).
Forest ecosystems occupy 32.7% of Lithuanian territory, or 2,136 million hectares. Coniferous forest communities prevail, they occupy major part of total forest area (58.1%, total area of 1155.1 thousand hectares, while deciduous forest cover 826.6 thousand hectares (41.9%). Broad-leaved deciduous forests and mature forests of various species composition are of the greatest importance for the conservation of forest biodiversity. Since 2001, the forest area has increased by 1.8 percent, during last six years forest areas increased by 79.8 thousand hectares. Among forest stands with the most increased areas are birch (23.1 thou. he), black alder (17.5 thou. he), white alder (11.3 thou. he) forests. The area prevailing of pine woods has increased by 16.4 thousand hectares, while the area of spruce forests has decreased by 1.9 thousand hectares. 30 percent of all forests are in protected areas. During last few years, volumes of felling in Lithuanian forests decreased by as much as 11 percent. Timber production was less

in 2008 than in 2007 or 2006. Also areas treated by non-clear cutting in 2008 increased by 1.3 percent, compared to 2007 and by 11.7 percent, compared to 2004.

Threats: The main problems caused to forest ecosystems in Lithuania include large volumes of felling, forest fires, timber market, damaged caused by ungulates. In some regions, big problems arise due to increase of recreation volumes and excessive use of non-timber forest resources. Forest ecosystems were greatly damaged by clear cuttings, decrease of mature stands, and prevailing forest monocultures. Climate change, air, soil and water pollution etc. also contribute to the changes of these ecosystems.

1.1.5. Wetland ecosystems

During the last decades of the 20th century, 70% of the wetlands have been lost due to drainage and peat extraction. Some fens not directly affected by land reclamation became noticeably dryer as a result of general drop of ground water table, what triggered changes in their communities. Moss and grass communities are being replaced by trees and shrubs. The most natural plant communities have remained in the largest protected wetlands: Čepkeliai bog (5858 he), Kamanos bog (2434 he), Žuvintas (6847 he), Amalva (3414 he) and others. All wetlands, and especially the alkaline fens, host a big number of rare and endangered plant communities and protected plant species. Besides, almost all wetland habitats are listed as protected under the EU Habitats Directive.

Wetland ecosystems fall in 3 classes and 26 associations. Raised bog communities belong to raised bogs grassy peat-moss class (*Oxycocco-Sphagnetea*). In communities of this class (belonging to 3 associations) that occur in open raised bogs, different species of peat mosses prevail, while other plants are relatively few. Diversity of fens small sedge thicket class (Scheuchzerio-Caricetea) communities is much bigger. Communities occurring in Lithuania fall to 21 associations. Besides sedges and other wetland plants, green mosses make an important part of fen communities. Most communities of this class are rare or rather rare, because, as mentioned above, there are only few remaining suitable habitats and their number in constantly decreasing.

Transition mires and raised bogs whortle-berry (Vaccinietea uliginosae) class has transitional position between forests and wetlands. The communities of this class fall in 2 associations. They differ from other wetland communities by their thick tree stands and quite abundant cover of wetland semi-shrubs (*Ledum palustre, Vaccinium uliginosum*).
In Lithuanian landscape, wetlands cover 246 000 hectares, i.e. 3.8 % of the total area. Raised bogs account for 22 % of all wetlands.

Threats: The main reasons causing transformation of wetland ecosystems are water pollution, drop of ground water level, eutrophication, overgrowing with shrubs and trees, invasion of new species, increased anthropogenic activities, increased tourism and use of non-timber resources.

1.1.6. Meadow ecosystems

From geographical point of view, Lithuanian meadows can be divided into two groups – flooded and continental meadows. Flooded meadows are of natural origin. Regular flooding prevents them from overgrowing with scrubs and trees. Dry meadows appear on grazed and mown forest glades, on drained swamps. Cease of grazing and mowing has destroyed many

natural meadows. Others have been destroyed by land reclamation and conversion into cultural grasslands or pastures. Yet another group of natural meadows, mostly meadows on slopes that are the most valuable ones from the biodiversity point of view, were planted with forest.
Grassland communities in Lithuania belong to 5 classes:
- saline meadows (*Asteretea tripolii*); only very small plots remaining on the coast of the Baltic Sea and Curonian Lagoon.
- fertile meadows (*Molinio-Arrhenatheretea*); the most common and richest communities belonging to 18 associations. The most common communities in Lithuania belong to *Festucetum pratensis*, *Deschampsietum cespitosae and Anthoxantho-Agrostietum tenuis* associations;
- steppe meadows (*Festuco-Brometea*); communities of this class fall in 6 associations, most of them, occupy only tiny areas in river valleys and on hill slopes. During last decades, these meadows have been decreasing even more, as hill slopes were planted with forests.
- forest meadows on slopes (*Trifolio-Geranietea*); these communities also contain big diversity of species. They reach the northern limits of their range in Lithuania, therefore, are rare or rather rare. Only *Trifolio–Agrimonietum eupatoriae* communities have countrywide distribution, some communities are slightly more common in the southern and eastern parts of the country. Communities belonging to other associations are rare or extremely rare and occupy very small areas.
- barren meadows (*Nardetea strictae*); almost in all cases they cover very small areas, mostly on the edges of other meadow communities or forests. Somewhat bigger areas of barren meadows have remained in Žemaičiai and Medininkai highlands.
Half of all meadows were destroyed during land reclamation and expansion of pasture and arable land area. There are no remaining bigger continental meadow areas any more. Currently remaining natural and semi-natural continental meadows hardly make more than 3 percent (region of the flooded meadows of river Nemunas occupies 52.4 thousand hectares). During last few years, area of cultural meadows and pastures has decreased by 6 percent (from 1156329.01 he in 2005 to 1087068.41 he in 2008).

Threats. The main reasons causing the decrease of meadow ecosystems are agricultural activities (meadows and pastures on fertile soils are being converted into arable fields; non-fertile meadows overgrow with scrub and trees; too high grazing intensity; use of chemicals), increase of forest areas by afforestation of low fertility meadows, water pollution.

1.1.7. Sandy ecosystems

Sandy areas in Lithuania, with the exception of sea beaches and those of major rivers, are mainly habitats of secondary origin, having emerged as a result of economic activities - forest felling. Biodiversity in sand communities is not high. They all belong to two classes: white dune beach-grass (*Ammophiletea*) and gray dune club grass and continental sands

(*Koelerio - Corynephoretea*).

White dune beach-grass communities in Lithuania occur only at the Baltic coast, on dry, low in nutrients, drifting sands. All communities belonging to this class occurring in Lithuania belong to *Elymo-Ammophiletum arenaria* association. Gray dune club grass and continental sands communities occupy large areas on Baltic Sea coast – in grey dunes and sea sand plain, while in continental part of the country fragments of them are scattered in military training grounds,

clearcut areas, forest edges, glades, slopes. *Violo–Corynephoretum canescentis* and Helichryso–*Jasionetum* communities are prevailing on coastal dunes, while in continental areas, especially in south and south-east Lithuania.

Threats: Problems mostly arise due to the overgrowth of open sand stretches or their planting with forest. The most adverse impact upon coastal dunes is rendered by intensive recreation: habitats of rare plants and fungi are destroyed, trampled, sand-slides occur.

1.1.8. Aquatic ecosystems

Aquatic ecosystems include lakes, reservoirs, rivers, the northern part of the Curonian Lagoon and the Baltic Sea along the coast of Lithuania. Vegetation of water bodies is characterized by high diversity of both fresh and saline water vegetation.
There are 29,000 rivers with total length of 64 000 km but only 18 rivers are longer than 100 km. The Nemunas River basin occupies 74 % of the territory of the country. There are 2850 lakes larger than 0.5 he with total area of 908 km^2. Lithuania has mesotrophic, eutrophic, hypertrophic and dystrophic lakes.

Water bodies and their shores host very big diversity of plant communities. They fall in 8 classes and almost 90 associations:
- small floating plants (Lemnetea minoris); communities of this class are formed by floating plants like duckweeds. The most widespread are communities of *Lemnetum minoris* and *Lemnetum trisulcae* associations;
- stoneworth algae (Charetea fragilis); communities of this class most often establish in clear lakes 2–3 deep, some of them even up to 9 m deep, and if conditions are favourable, take up large areas. There are 13 established associations and one unclassified communities in Lithuania. Most of these communities are rare or extremely rare.
- large rooted and floating hydrophytes (Potamogetonetea pectinati); these communities prevail in Lithuanian waters – lakes, rivers, lagoon and ponds. They consist of pondweeds and other water plants (water crowfoots, yellow water-lilies, water milfoils, hornworts). 27 communities belonging to this class were found in Lithuania up to date.
- Communities of dystrophic water bodies (Utricularietea intermedio-minoris) mostly occur in permanent bog pools, fens, ditches. Up to now, 4 associations of communities belonging to this class have been found in Lithuania.
- Communities of submarine (Zosteretea marinae) and small hydrophytes (Littoreletea uniflorae) classes are extremely rare, only small fragments of them are found in Lithuania.
- terophytes (Isoeto-Nanojuncetea); these communities more often occur along large rivers, some of them establish on permanently or temporarily wet forest paths. Communities of large halophytes and sedges (Phragmitetea australis) connect aquatic and terrestrial vegetation. Some of them occur in the littoral zone of watercourses, others (mostly large sedge communities) – on bog edges, meadow pools, and springy areas. This class is distinguished by very high variety of communities. Communities of 32 associations were described up to now. River and lake ecosystems in Lithuania are mostly polluted by anthropogenic eutrophication from dams, point and non-point source run-off of biogenic minerals and organic substances, and climate change

Threats: Lithuanian Baltic Sea coastal ecosystem complexes are threatened by industrial pollution (insufficiently purified water of Nemunas basin), accidents caused by humans (in

navigation, oil extraction), fish netting, intensive tourism, fires, water eutrophication, draining, intensive farming (forest preparation, peat extraction, animal husbandry), increasing disturbance, spring pumping of water, overgrowing of polders, wet meadows and islands.

1.1.9. Urban ecosystems

Urban ecosystems occupy nearly 5% of Lithuania, of which 2.7% are built-up areas, the rest are roads. Built-up areas occupy an area of approximately 180 thousand hectares, are constantly increasing. During 2004-2008 there was a noticeable trend of expansion of built-up areas at the expense of parks and other urban plantations. This way biodiversity in cities is decreasing. When establishing new parks or plantations, many alien or non-native plant species are being planted. These species are less sensitive to air or soil pollution, more adaptive to changing environmental conditions, so they are replacing more sensitive native species. Some invasive species, such as *Acer negundo*, *Robinia pseudoacacia* etc., are quite common in urban plantations.

Since urban areas characteristically have high population densities, concentration of industries and transportation systems, they have high levels of pollution, although data collected during 2004-2008 indicate decrease of air pollution concentrations.
Parks in urban systems, created by nature and man, provide habitats for many species of plants, fungi, animals. Species inventories have been conducted in 239 parks, 35 of them are the most valuable. Generally, trees in parks are local deciduous with a few local and alien conifers. The area under the crowns of trees is occupied by the emerging semi-natural multi-species plant communities, with rare species of fungi. But most parks haven‘t got a proper management or are not managed at all, which results in increase of animals carrying infectious diseases such as tick encephalitis and Lyme disease.

1.2. Biological diversity of native wild species

1.2.1. General review

Lithuanian biodiversity represents three large biogeographic units: Eastern Baltic, Central European and the marine province of the Baltic Sea. In broader biogeographic context, Lithuania belongs to the mixed broad-leaved spruce forest zone and is situated near its southern boundary. Borders of large phytogeographic units go across Lithuania: the north boundary of hornbeam (*Carpinus betulus*) separates the northern and southern broad-leaved - coniferous forests. Lithuanian biodiversity comprises over 20 000 animal, over 6500 fungi, and approximately 1800 plant species.

Table 1.1. Number of plant, animal and fungi species in Lithuania

Main taxonomic groups	Total number of species in Lithuania (EPA report, 2008)	Number of protected species (Red Data Book 2007)	Percentage of protected species from the total number of species
Mammals	70	23	32,8
Birds	346	80	23,1
Reptiles	7	2	28,6
Amphibians	13	5	38,5
Fish	100	8	8
Invertebrates	15000	135	0,9
Plants	1796	339	18,9
Fungi	5650	112	1,87
Lichens	400	63	31

1.2.2. General trends and threats

Lithuanian biodiversity in natural and anthropogenic ecosystems and natural biological resources are affected by the following factors: habitat loss and their fragmentation (intensive felling, destroying of small woodlands and bushes, industrial forestry, when of only few productive tree species are grown, change of ecological conditions due to draining of big areas, changes of water temperature regime and migration routes due to damming small streams); increased recreational intensity in nature; development of road network and intensification of transport; excessive use of natural resources; soil, water and air pollution; introduction of alien and new species; global climate change; industrialization of agriculture and forestry.

1.2.3. Fungi and lichens

Mushrooms in Lithuania - which are representatives of broad-leaved deciduous and boreal coniferous forests and partly taiga - are typically found in the following ecosystems: forests, meadows, wetlands, fields, water bodies. There are over 6,000 species of fungi in Lithuania: Deuteromycota - 2200; Basidiomycota – 2500, the most abundant orders being Agaricales – 1200 species, Aphyllophorales – 500 species). The majority, over 4,000, occur in forests, with fewer species in meadows (over 600), water bodies (200), wetlands (150), and sand habitats (200). Micromycetes and macromycetes have been insufficiently studied in Lithuania. It is estimated that the realm of fungi in Lithuania consists of 3.5 to 4.5 thousand macromycete and 8 to 12 thousand micromycete species. Fungi are very closely related to vegetation. Rare macromycete species grow in small areas of broadleaved-coniferous forests, in hornbeam-oak-lime forests; in Lithuanian coastal areas – mycobiota of white sand dunes. Micromycetes (over 300 species) prevail in meadow communities, although macromycetes also occur (*Clavaria*,

Langermannia gigantea etc.). Approximately 50 micromycete species are found in wetlands. More than 320 Bryopsida species occur in Lithuania. Currently 112 species of fungi are listed in the Lithuanian Red Data Book, which accounts for 1.87 percent of all known fungi species. 63 lichen species (31 percent of all known species of lichens) are listed in the Lithuanian Red Data book as well.

Composition and structure of mycobiota, particularly that of macromycetes and parasitic micromycetes, are closely associated with on-going and irreversible changes in ecosystems and first of all plant communities. Intense economic activity, forestry and commercial mushroom-collecting adversely impact macromycetes, especially the best edible mushrooms, such as boletus, chanterelle and others. Habitat fragmentation, intense economic activities and pollution are the main threats to fungi in Lithuania.

Table 1.2. Number of fungi taxa in Lithuania

Taxonomic groups	Number of species in Lithuania
Myxomycota	120
Zygomycota	100
Chytridiomycota	30
Ascomycota	700
Basidiomycota	2500
Deuteromycota	2200
Lichenes	400
Total	6050

1.2.4. Plants

Natural and semi-natural vegetation covers roughly 1/3 of Lithuania., 1796 species of Pteridophyta and vascular plants have been inventoried in Lithuanian flora: 1328 species of flowering plants (*Angiospermae),* 3 species of coniferous plants (*Gymnospermae)*, 7 species of club moss (*Lycopodiophyta)*, 8 species of horse tails *(Sphenophyta)*, 21 species of ferns *(Polipodiohyta)*, 320 species of mosses *(Musci)*, 106 species of liverworts *(Hepaticae)*, and 3 species of horn-flowered mosses *(Anthocerotae)*. Asteraceae (with 124 species) and, Poaceae (117 species) are the largest families. There are approximately 20 tree species, 57 bushes, 23 shrubs, and 1.266 herbs. The most important habitats are forests (713 species), meadows (555 species), wetlands (264 species), freshwater habitats (130 species), and sandy soils (167 species).

The following species reach the northern boundary in Lithuania: mountain arnica (Arnica montana), mouse garlic (Allium angulosum), (Trifolium rubens); north-western boundary is reached by (Aquilegia vulgaris), Festuca psammophila; the western boundary, by (Astragalus danicus); the eastern boundary, by (Carex arenaria), (Myrica gale); the southern boundary, by (Galium triflorum); and the north-eastern boundary, by Aira proecox. The Lithuanian flora includes the following Ice Age relicts: dwarf (Betula nana), lobelia (Lobelia dortmanna) - pre-Boreal relicts; (Cephalanthera rubra), (Melittis melissophyllum) - sub-Boreal relicts; Bromus benekenii, meadow gagea (Gagea pratensis) - Atlantic relicts. Endemics of Polese sands occur in sandy areas of south-eastern Lithuania: Tragopogon gorskianus, Silene lithuanica. Lithuania straddles the junction between boreal coniferous and broad-leaved forest. The north boundary of hornbeam (*Carpinus betulus*) lies within Lithuania. The vegetation belongs to the Eastern Baltic sub-province, and the south-eastern sandy plain belongs to the Central Europe province. Vegetation type is broad-leaf/coniferous forests. In southern Lithuania, small areas of hornbeam/oak/lime forests have survived with most rare species listed in the Lithuanian Red Data Book. It is only in the Curonian Spit that characteristic Baltic forests with *Erica tetralix* are known. Meadow vegetation has developed in the areas of felled forest. More natural meadow communities have survived only in the flooded areas of major rivers. Diversity of mosses (Bryophyta) is quite well studied in Lithuania. 32 families and 111 genera of Bryopsida are found (35 species of peat moss and 300 species of true mosses). There are approximately 110 species of liverworts that constitute a distinctive group. Mosses growing on soil make the most abundant group (approximately 250 species), half of them occurring in forests and wetlands (approximately 50 species of true mosses and 29 species of peat mosses), 70 species occur in meadows, and only 20 species – in sandy areas. Diversity of algae is insufficiently studied; over 3000 species have been described so far. However, few new species of unicellular and colonial algae are discovered every year. 339 plant species are currently listed in the Lithuanian Red Data Book, which is 18.9 percent of all plant species.

Changes of Lithuanian vegetation are mostly caused by on external factors, climate change, natural succession of the components of the ecosystems, direct anthropogenic factors (human activities, pollution, etc), and processes caused indirectly by anthropogenic impact (spreading and establishment of adventive species, impact of higher selective competition within communities, etc.). Habitat stability and non-fragmentation is very important for the survival of vegetation.

Table 1.3. Number of plant taxa in Lithuania

Taxonomic groups	Number of species
Anthophyta	1328
Coniferophyta	3
Lycophyta	7
Sphenophyta	8
Pterophyta	21
Musci	320
Hepaticae	106
Anthocerotae	3
Total	1796

1.2.5 Invertebrates

135 invertebrate species are currently list More than 20 thousand invertebrate species were found in Lithuania. Insects with at least 15 thousand known species make the most abundant and most studied group (Lepidoptera - approximately 2455 species, Hymenoptera - approximately 3000 species, Diptera - approximately 2000 species, Homoptera - 1000 species, Hemiptera - 600 species). More than 3600 species of beetles are found in Lithuania. Some of them, like Miscodera arctica, have survived in our country since the last Ice-age to this day. Lucanus cervus is one of the biggest and rarest beetle species. The north boundary of Polyphylla fullo lies within Lithuania. The insect diversity comprises approximately 300 species of carnivorous Carabidae beetles, approximately 70 species of Elateridae, approximately 50 species of Coccinellidae, 120 species of Cerambycidae, 270 species of Chrysomelidae, 2 species of Lampyridae. There are also very scarce groups: Dermaptera – 3 species, Blattodea – 5, Megaloptera – 2, Siphonaptera – 15. Currently more than 200 Arachnida species, 200 species of Crustacea and 170 species of Mollusca are known in Lithuania. Lithuanian soils host more than 50 species of Protozoa, approximately 250 species of Nematoda, 15 species of Lumbricidae, approximately 400 species of Oribatidae, almost 80 species of Tarsonemidae, approximately 100 species of Gamasoidea, approximately 230 species of insect larvae and 130 species of Colembola. During last couple of years, few tenths of new insect species were found and described, for example, two Coccoidea species– *Eulecanium douglasi (Šulc*) and *Newsteadia floccosa (De Geer)*, 9 species of *Hemiptera, Psylloidea*, are included in the Lithuanian Red Data Book, which is 0.9 percent of all invertebrate species.

Main threats for the survival of invertebrate species include habitat loss and fragmentation, water pollution, eutrophication, hypertrophication and dystrophication of water bodies, Use of pesticides has a great adverse effect on soil invertebrates. Drainage and land reclamation transform wetland and bog habitats into habitats of other types, which causes changes of fauna and flora.

Table 1.4. Number of Invertabrata taxa in Lithuania

Taxonomic groups	**Number of species**
Porifera	6
Coelenterata	
Ctenophora	
Nematoda	~500
Nemertini	
Annelida	
Hirudinea	22
Mollusca	170
ARTHROPODA	
Crustacea	~200
Insecta	~15000
Odonata	57
Hymenoptera	~3000
Diptera	~2000
Lepidoptera	2455
Coleoptera	~3600
Arachnida	~200
Acari	~1160

1.2.6. Fish

Lithuania's waters are inhabited by approximately 100 species of fish: 27 marine, 52 freshwater and 9 migratory. The brackish Baltic Sea water along Lithuanian coastline hosts not only marine fish, but also 11 migratory and 15 freshwater fish species. The most significant commercial marine fish are the subspecies occurring only in the Baltic Sea: *Sprattus sprattus balticus*, *Clupea harengus membras* and *Gadus morhua callarias*. Salmon (*Salmo salar*), halibut (*Psetta maxima*) and plaice (*Pleuronectes platessa baltica*) prevail in the Baltic Sea coastal zone. Marine fish are found also in the Curonian Lagoon: Baltic sprat, cod, halibut and lesser sand eel, lumpfish. However mi recent years, The Curonian Lagoon is mostly populated by freshwater (roach (*Rutilus rutilus*) and bream (*Abramis brama*)) and migratory (European smelt (*Osmerus eperlanus eperlanus*) and pike-perch (*Stizostedion lucioperca*)) fish. Lithuanian lakes are inhabited by 42 fish species, 29 of them being native and 13 introduced. Each lake contains no more than 23 - 26 species of fish. Their distribution often differs. Smelt is being found in 1.3 % of Lithuanian lakes, vendace – in 2.5%, – in 30-40%, white bream – in 45-50%, – in 45-55%, bleak – in 57.5%, – in 60.3%, common rudd - in 60-70%, bream - in 70%, - in 91.5%, roach - in 96.4, pike - in 97.1, perch - in 97.7%. Recently populations of some fish species, like (Alosa fallax fallax), have sufficiently recovered, and they can be fished again. Strict protection measures and breeding resulted in increase of salmon population. 8 fish

species are currently listed in the Lithuanian Red Data Book, which makes 8 percent of all fish species.

The monitoring has shown, that in recent years commercial fish populations have decreased both in the Curonian Lagoon (60 percent decrease of abundance and biomass during 2007-2008) and in the Baltic Sea (30 percent decrease during 2007-2008). Juvenile fish prevail in many local fish populations, because adult fish were harvested during recent few years of intense fishing. Changes in fish population are also caused by water pollution, changes in food abundance, and invasive species. Such a significant decrease of fish resources has a negative social effect (loss of employment and income).

1.2.7. Amphibians and Reptiles

13 amphibian species occur in Lithuania, 5 of them are listed in the Lithuanian Red Data Book (Triturus cristatus - Crested Newt, Bombina bombina – Fire-bellied Toad, Bufo calamita – Natterjack Toad, Hyla arborea, Rana arvalis. Out of 7 Lithuanian reptile species, 2 are listed in the Red Data Bok - Smooth Snake (*Coronella austriaca*) and European Pond Terrapin (*Emys orbicularis*).

The survival of amphibian and reptile populations is mainly threatened by loss of their habitats. Habitat loss occurs due to habitat fragmentation, barriers on migration routes, decrease of water bodies due to drainage and overgrowing, destruction of breeding places, lack of wintering areas, decrease of terrestrial habitats, agricultural activities, use of fertilisers, and stocking of water bodies with fish.

1.2.8. Birds

Of all Lithuanian vertebrates, birds are the most abundant and widespread class. 346 bird species have been recorded in Lithuania. They occur in forests, fields, lakes, rivers, Baltic Sea and even big cities. Every spring and autumn millions of birds fly over Lithuania, following one of the biggest bird migration routes that is part of North Atlantic migration corridor. Up to 170 bird species are recorded every year during the spring and autumn migrations. There are 211 breeding, 167 migratory, and 85 wintering bird species in Lithuania. Currently, 80 bird species are listed in the Lithuanian Red Data Book. The main cause of the decline of bird population in Lithuania is destruction of habitats. Waterfowl is mostly threatened by draining of small bogs and wetlands, hunting during migration period, etc. Active forestry affects the stability of forest birds' population (since 2004, the clear-cut area has decreased by 11.7 percent; the felling volume in 2008 decreased by 11 percent compared to the average of the period 2004 to 2007 - approximately 3.6 million cubic meters). Other important factors are: increased nature recreation, intensification of agriculture, overgrowing of meadows, water eutrophication, and climate change.

1.2.9. Mammals

Lithuanian mammal fauna is comprised by species of Central European broad-leaved forests and East European taiga. 70 species of mammals are found in Lithuania. Representatives of Central European broad-leaved forest zone are some bat species, dormice, marten, red deer, row deer, wild boar. East European taiga is represented by moose and arctic hare. Almost all

bat and dormice species occurring in Lithuania are enlisted in the Red Data Book. Currently there are 23 Red Data mammal species.
Out of 15 bat species found in Lithuania, 10 are listed in the Red Data Book. Such a high number of protected species was caused by insufficient research, disturbance of colonies and habitat loss (insulating of cellars and sheds, felling of mature trees, pollution, use of pesticides etc.), and poor public education. However, during last three years, the condition of bat species remained stable. Lynx population is mostly threatened by habitat fragmentation and hunting. Populations of game animals (wild boar, red deer, moose, fox, marten, wolf and others) have remained stable, and those of some species (e.g. wild boar and row dear) have increased.

1.3. Invasive taxa

Like in other European countries, number of invasive alien species in Lithuania is rapidly increasing. Only 15 alien animal and plant species are declared alien and in need of elimination, because they cause great damage to biodiversity, agriculture, industry and society. Approximately 548 of alien plants are known in Lithuania to this date, 46 of them are invasive, and another 60 – potentially invasive, as they might cause serious ecological problems in future. One of the most urgent problems is caused by Sosnovsky Cow Parsnip (*Heracleum sosnovsky*) that is increasingly affecting human health. It was introduced for agricultural purposes as a forage plant, but because of its ornamental appearance it has since spread in farmsteads. At present, this fast self-spreading species is successfully entering protected areas, exterminating native species. Other invasive plant species, such as (Lupinus polyphyllus), (Acer negundo), (Impatiens parviflora), rugosa (Rosa rugosa), (Robinia pseudoacacia) and others, are rapidly spreading as well. In the Curonian Lagoon and the Baltic Sea, invasive species, such as *Dreissena polymorpha, Cordylophora caspia, Chelicorophium (Corophium) curvispinum, Litoglyphus naticoides* and others are found; they were brought in with the ballast water of the ships. The biggest damage by invasive species is caused to biodiversity; however, agriculture, fisheries, navigation and industry are greatly affected as well. For example, as Canadian mink established itself in Lithuanian waters, European mink was totally exterminated, and is currently considered to be extinct; otter population started to decline.
Spreading of invasive species is mainly caused by globalisation, climate change (species relocate because of changes in native habitats), more intensive trade, and lack of control measures to prevent the arrival of invasive alien species, international tourism and export of goods, insufficient information given to the public.

1.4. *Ex-situ* conservation

Botanical collections. Introduction and acclimatization of plants is performed in botanical gardens in Kaunas, Vilnius, Šiauliai and Klaipėda. The largest collections are in the botanical gardens of Kaunas Vytautas Magnus University (5000 taxa) and Vilnius University (2000 taxa), and in arboretum of Girionys. Kaunas Botanical Garden boasts the largest (718 taxa) collection of trees. There is a large collection of plants (1000 taxa) in the bulb section of the Botany Institute. In the Institute of Botany, research on acclimatization, introduction and selection of various leguminous species is being done. Introduction of plants occurs in individual collections. Some 200 Lithuanian manor parks boast a rich variety of trees.

In Lithuania there are 2 large herbaria of flowering plants: Vilnius University (650 000

specimens) and at the Institute of Botany (446 000 specimens of flowering plants and 8000 moss specimens); and two fungaria. Institute of Botany houses a collection of lichens. The Institute of Agriculture of Lithuania has established a modern plant seed storage facility. Collections of agricultural plants are also maintained at the University of Agriculture of Lithuania.

Zoological collections are held in Kaunas Zoo, the Marine Museum-Aquarium in Klaipėda, Kaunas zoological museum, named after T.Ivanauskas in Kaunas, the Zoology Department Museum of the Faculty of Natural Sciences of Vilnius University, the Museum of the Institute of Ecology, and in private collections.

Captive breeding. By the order o the Ministry of Environment, Capercaille (*Tetrao urogallus)* breeding programme was developed and capercaille breeding pen was built in Viešvilė strict nature reserve. There are plans to create breeding programmes of Lynx (*Lynx lynx)* and eagle owl (*Bubo bubo*) with the aid of EU structural funds. Implementation of these programmes should start during 2007-2013. For over 4 decades European bisons (*Bison bonasus*) are bred in Lithuania.
Gene bank of Plants was established for organising and coordination of collection, research and conservation of national plant resources in 2004. Lithuanian Gene Bank houses more than 2280 specimens of Lithuanian plant seeds.

1.5. Use of biological resources and their public value

Non-timber forest resources. Over 100 medicinal plants, about 400 edible mushroom species, and 20 plant species with edible fruit and berries grow in the forests of Lithuania. Of edible fungi, the most valuable are white mushrooms (Boletus edulis), chanterelles (Cantharellus cibarius) and others. Berries of economic significance include: blue-berries, cranberries, whortleberries; of medicinal plants - juniper berries, bear-berries, etc. In 2004, 2719548 kg of mushrooms were purchased in Lithuania, while in 2008 - 1324233.3 kg, i.e. the yield decreased by 48.7 percent; the purchases of medicinal plants in these years were 22756 kg and 16129 kg respectively, i.e. the decrease was 71 percent. Purchase of berries during these years increased 4.3 times, from 223626 kg in 2004 to 973862.7 kg in 2008 m.
Main reasons causing the decrease of non-timber forest resources include intensive forestry that destroys mushroom and berry growing areas, and development of an edible mushrooms industry.

Game resources. Traditionally, almost half of Lithuanian mammal species are considered as game animals. At present, hunting of 18 mammal and 16 bird species is permitted. For several decades, hunting policy was focused on ungulates, which make a good profit for the state. This caused significant decrease of moose and red deer populations, but their populations have stabilised after their hunting was limited or banned for a few seasons.

Table. 1.5. Number of ungulates in years 2004 and 2008

Species	2004 Assessment	2008 Assessment
Moose	3860	4972
Red deer	11 199	16 995
Row deer	75 886	100 397
Fallow deer	443	720
Wild boar	32059	39 839

Assessment of wolves in 2002 has established that 106 wolves were living in Lithuania; therefore, since 2002 hunting quota was set at 20 wolves per year. However, according to the new assessment in 2008, the number of wolves was as high as 409.

During these years, resources off all game animals remained stable, only the populations of furry animals were increasing due to the decrease of their demand. Increased population of foxes causes great damage to game animals and spread infectious diseases. However, in recent years, the inoculation showed a significant improvement. Populations of beavers and muskrats are rapidly increasing.

The greatest damage to the game fauna during recent years has been from intense forestry and poaching.

Fish resources. During recent years, fish resources in all types of Lithuanian waters were decreasing. In 2008, fish abundance and biomass in the Curonian Lagoon was much lower than in 2007 (the abundance has dropped by 65 percent, while biomass – by 67 percent) and lower than average for the period 1996 to 2007. Fish abundance and biomass in the Baltic Sea was also lower than those in 2007 (the abundance has dropped by 50 percent, biomass – by 24 percent) and lower than average for the period 1996 to 2007. Due to very intense fishing, juvenile fish prevail in populations of many local fish species (halibut, European flounder, cod etc.), because older fish prevail in catches. In 2007, 190.2 tons of fish were caught in Lithuania.

Table 1.6. Trends of agriculture and forest land use

Years	Utilized agricultural area					
	Arable land		Meadows and natural pastures	%	Forests (forest land)	%
	he	% from total area	he	% from total area	he	% from total area
1997	2939989.28	45.0	503808.06	7.7	1978839.88	30.3
1998	2945971.50	45.1	496035.57	7.6	1974913.55	30.2
1999	2945290.04	45.1	492339.72	7.5	1972340.52	30.2
2000	2936374.60	45.0	500146.46	7.7	1979403.70	30.4
2001	2932659.56	44.9	497070.05	7.6	1998294.75	30.6
2002	2929849.39	44.9	498050.27	7.6	1996879.17	30.1

2003	2930350.68	44.9	497791.34	7.6	2008492.08	30.8
2004	2925992.82	44.8	498542.42	7.6	2026064.00	31.0
2005	2926542.10	44.8	496825.97	7.6	2038046.55	31.2
2006	2924751.12	44.8	487768.24	7.6	2100341.64	32.2
2007	2928032.44	44.8	480748.68	7.6	2115214.69	32.4
Total area					6530023.32	

During the period from 1997 to 2007:
- the area of arable land has decreased by 11 956.84 he;
- the area of meadows has decreased by 23 059.38 he;
- forest area has increased by 136 374.81 hectares.

CHAPTER II. CURRENT STATUS OF NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS

2.1. A brief description of the NBCSAP, identifying the main or priority activities.

National Biodiversity Conservation Strategy and Action Plan of the Republic of Lithuania (NBCSAP) was approved by the joint order of the Minister of Environment and the Minister of Agriculture on 21 January 1998 (No. 9/27). The English translation of the NBCSAP was also published in 1998.

The leading institution has been the Ministry of the Environment. The NBCSAP has been prepared in collaboration with specialists from the Institutes of Botany and Ecology, Vilnius University, the Ministry of Agriculture and Forestry, and NGOs, by the Working Group established under the order of the Minister of Environment and with the help of foreign consultants. A Steering Committee for the preparation of the strategy has been established. Specialists from Institutes of Botany, Ecology, Forestry and others, Vilnius and Klaipėda Universities and Vilnius Pedagogical University, Garden of Botany and specialists of other organizations, representatives of NGOs, Ministry of Agriculture and Forestry, Ministry of Construction and Urban development and employees of other ministries presented their comments and suggestions for development and improvement of the NBCSAP.

This NBCSAP has been developed based upon the pilot National Action Plan for the Conservation of Biological Diversity, using the National Environmental Strategy materials. The NBCSAP has been made more specific with regard to ecosystems; the current status analysis has been supplemented with biogeographic units of Lithuania, presenting the distribution of protected areas in biogeographic units and including the Strategy Section. Concrete actions were proposed, recommended projects indicated which needed foreign financial assistance, etc.

The main goals of the NBCSAP are to conserve the country's biological diversity – major ecosystems and species – for future generations, at the same time contributing to the global conservation efforts which employ every measure known and available to mankind, to lay down the foundations for sustainable use and management of biological and landscape diversity by integrating its conservation measures into the national economy development programmes.

The NBCSAP goals system. The prioritized conservation and biodiversity protection problems were then used to develop a uniform goals system. The overall goal of the biodiversity conservation strategy should meet the demands of biota protection were it is threatened either by decline or degradation. The following biodiversity conservation goals have been outlined:

Geosystematic level (in-situ) **goals**:

G1 *maintain overall geoecological balance of country's landscape* by means of balancing cultural landscape formation, guaranteeing the creation of a proper Nature Frame as an ecological compensating system, creating the Nature Frame green areas system, and restoring the damaged structures or features of the most important Nature Frame zones;

G2 *avoid further degradation of the landscapes in watersheds* which are the main

linking elements in the Nature Frame system by management of landscape, renaturalization of damaged natural areas*;*

G3 *prevent further degradation of river valley and lake hollow landscape* by safeguarding the protection and use regimes of protection zones around water bodies, and determine means for conserving valuable valley habitats;

G4 *prevent further degradation of the natural structure of the karst landscape* by regulating the human activities which activates karst processes, by strengthening the protection of nature, and by promoting ecological land use*;*

G5 *stabilize and reduce eutrophication of inland waters* by reducing the chemical pollution, by strengthening and enforcing water protection zones by the formation of green buffer zones and by strengthening control of potential pollution sources;

G6 *prevent further degradation of landscape in especially protected areas* by improving the surveillance and management of protected areas, by reducing clear-cutting, by regulating construction activities, by implementation of scientifically based sustainable recreation system in protected areas, by directing agricultural development towards environmentally balanced use of land;

G7 *avoid further degradation of the natural landscape in cities and towns* by preserving and expanding green areas in urban territories, by protecting valleys, by preserving the scenic value of landscapes, and by protecting the natural features of the hydrographic network.

Ecosystematic level (in-situ) **goals**:

E1 *avoid further degradation of forest ecosystems* by their rational use, prohibiting drainage of forests, and forming and preserving an optimal forest structure;

E2 *prevent further degradation of marine ecosystems* by developing scientifically sound protection and rational use of marine deep biocenoses, and by strengthening marine environment protection systems;

E3 *prevent further degradation of the coastal ecosystems* by strictly limiting the intensity of use in coastal zones, by prohibiting construction close to the sea, protecting rare and declining biocenoses, and conserving wintering sites and fish spawning grounds of international importance;

E4 *prevent further degradation of inland waters* by the regulation of their use, by not increasing anthropogenic loads in the coastal zone, by avoiding radical changes in hydroecological conditions;

E5 *conserve wetland ecosystems by prohibiting exploitation of new wetlands,* by restoring peat lands, and by delineating measures for the conservation of valuable habitats;

E6 *conserve natural meadow ecosystems* by prohibiting their non-traditional use, by defining possibilities for restoring meadows;

E7 *prevent decline of sand ecosystems* by avoiding afforestation or construction and development in sandy areas, by safeguarding the protection of valuable species and communities in those areas;

E8 *conserve and enrich the human environment* by preventing destruction of natural biocenoses in agrarian and urban areas, by keeping up their restoration processes, and increasing biodiversity.

Species level (in-situ) **goals:**

R1 *maintain diversity of species* by developing a special program for the conservation of relic, endemic, rare and declining taxa, and by establishing legal basis for effective

protection*;*

R2 *prevent the further reduction of the species composition of biocenoses* by ensuring the stability of species composition in biocenoses, and by establishing legal basis for effective protection*;*

R3 *ensure conservation of species of international importance* through developing and implementing special programs, and by establishing a legal basis for effective protection;

R4 *protect locally characteristic species and natural populations* by preventing the spread of adventitious and invasive species, and by enhancing research;

R5 *avoid destruction of migration routes of fauna species and changes in their environment* by regulating the use of areas (particularly those which lead to the fragmentation of habitats), by establishing legal basis for effective protection;

R6 *protect or restore non-timber forest products* by ensuring rational use, by preparing and implementing a program for resources restoration*;*

R7 *protect and restore game resources* by optimizing use of game and restoring populations which resources have been decreased*;*

R8 *protect and restore fish resources* by protecting spawning grounds of valuable fish species, by organizing artificial reproduction of valuable fish species, and by restocking lakes and rivers.

Genetic level (in-situ) **goals:**

V1 *avoid degradation of forest populations* by strengthening conservation means at state level, continuing research and monitoring of forests populations;

V2 *avoid degradation of the gene pool of introduced alien biota taxa* by ensuring maintenance of introduced taxa, strengthening basis for experiments.

Genetic level (ex-situ) **goals:**

Ex1 *prevent further degradation or extinction of the gene pool of domesticated taxa* by strengthening protection of the gene pool of domesticated taxa, including plants, fungi and animals, by reviving and expanding scientific selection activities;

Ex2 *prevent further degradation of the gene pool of taxa of international importance* which are not characteristic of the country by conservation in captivity, by improving the experimental basis.

Organizational level (ex-situ) **goals:**

Ex3 *provide meaningful financial-technical support for the maintenance of existing ex-situ protection,* and for organizing specialized ex-situ protection centers;

Ex4 *create the system for coordination of ex-situ protection activities* and to plan measures for ex-situ conservation;

Ex5 *create a national collection of micro-organisms,* recover collections, which were lost;

Ex6 *secure genetically modified organisms* through effective veterinary and phytopathological control system.

Successful achievement of biodiversity goals requires systematic and long-term actions in the future. However, most problems can be solved in the medium or even short-term. So implementation periods have been set as: short-term, medium-term and long-term, with an indication of positive and negative factors.In addition the economic sectors, rsponsible for the implementation of the goals were evaluated. The resulting system of goals is presented in the

table below:

Table 2.1. Specific goals for the conservation of biodiversity

Time period	Protection levels	Goals	
		Priorities*	**Other**
(L) LONG TERM	GEOSYSTEMATIC SPECIES (in situ) GEOSYSTEMATIC	G1, G2, G3 R2 G6, G7	- - G4, G5
(M) MEDIUM TERM	ECOSYSTEMATIC SPECIES (in situ) GENETIC (in situ) EX-SITU	E1, E4, E6, E8 R1, R5 V1 Ex1, Ex3, Ex5	E2 R4, R6, R8 V2 Ex2
(S) SHORT TERM	ECOSYSTEMATIC SPECIES (in-situ) EX-SITU	E3, E5 - -	E7 R3, R7 Ex3
* *priority goals are set for priority problems*			

The NBCSAP strategy concept. Defining a strategy for the protection of biodiversity requires that a concept be systematically developed to achieve specific goals. Seven logically acceptable biodiversity conservation strategy options (types) were determined. They include:

I complete (which considers all the goals set);

II prioritized (which considers all priority goals);

III geoecosystematic protection priority (all geosystematic and ecosystematic protection trend goals & priority goals from species-specific and ex-situ protection trends are considered);

IV species-specific protection priority (all species-specific and ex-situ protection goals & all priority goals from geosystematic and ecosystematic protection areas are considered);

V focusing on terrestrial biota protection goals (all terrestrial biocenoses ecosystematic protection goals & priority goals from other protection trends are considered);

VI focusing on aquatic biota protection goals (all aquatic biocenoses ecosystematic protection goals & priority goals from other protection trends are considered);

VII proportional (2/3 of all goals in all protection trends are considered).

According to the chosen priority variant of the strategy concept, the Action Plan has been prepared in order to reach specific goals. Action Plans are presented for separate ecosystems according to the European Biodiversity and Landscape Conservation Strategy.

Table 2.2. List of Action Plans

The name of Action Plan	Specific priority goals to be achieved
General programmes	
Nature Frame Action Plan Forest ecosystems protection Coastal ecosystems protection Inland water ecosystems protection Wetlands and meadow ecosystems protection Anthropogenic environment ecosystems protection	G1, G2, partially G6 E1 E3, partially G6 (G5, E2 – non priority) E4, G3 E5, E6, partially G6 E8, G7
Special programmes	
Protection of species Ex-situ protection -*	R1, R2, R5 Ex1, Ex3, Ex5 V1
** protection of diversity within species is not clear enough at the moment in Lithuania; so, it is proposed to prepare a specialized strategy and action plan for conservation of diversity within species*	

The NBCSAP has been prepared to cover a 20 years period although most of the actions are meant to be implemented within 5 years. So it was foreseen that the Action Plan should be revised in five years but unfortunately it was not done.

Lithuania also has several other strategic documents either directly or indirectly covering the obligations under the CBD: the Long-term Development Strategy of the State (adopted by Parliament on 12 November 2002 (Resolution No. IX-1187)); the Long-term Economic Development Strategy of Lithuania until 2015 (approved by the Resolution No. 853 of the Government of the Republic of Lithuania on June 6, 2002); National Lisbon Strategy Implementation Programme for 2008-2010 (Resolution No. 1047 adopted on 1 October 2008); Programme of the Government of the Republic of Lithuania for 2008-2012 (approved on February 25, 2009); Master Plan of the Republic of Lithuania (approved by the Resolution No. IX-1154 of Parliament of the Republic of Lithuania on October 29, 2002); The Lithuanian National Sustainable Development Strategy (approved by the Government decision No 1160 of 11 September 2003); The National Strategic Plan of the Lithuanian Fisheries Sector for 2007–2013 (approved by Lithuanian Government on 19 June 2007); the Lithuanian Forestry Policy and its Implementation Strategy adopted in 2002; Rural Development Plan for the period 2007 – 2013; Long-term (till 2025) Strategy of Lithuanian Transport System (approved on June 23,2005 by The Lithuanian Government Decision No. 692); National Tourism Development Programme for 2007-2013 (approved by the Government decision No. 944 on August 29, 2007); the National Education Strategy for 2003-2012 (No. IX-1700, 4 July 2003); the National Strategy for the Implementation of the United Nations Framework Convention on Climate Change until 2012 (approved on January 23, 2008); etc. More information about listed strategic documents is provided in the Chapter III of this report.

2.2. An indication of whether and where targets and indicators (both global and national) adopted under the Convention have been incorporated into NBCSAPs).

Action Plan has been prepared in order to implement Strategy. The objectives are build on those of the Strategy, but effectiveness of the actions are assessed not by indicators, but by

outcomes. It should be stated that national indicators are not elaborated, except general indicators for coverage of protected areas and forests territories.

Goals of the Strategy has been formulated according specific needs and conditions of the country, but can be stated that many of them are in line with CBD targets – most of targets of 2010 Biodiversity targets and some of the targets of the Programme of Work on Protected Areas are also incorporated. Meanwhile there are targets which not incorporated in NBCSAP.

2.3. Information on how activities under the NBCSAP contribute to the implementation of the articles of the Convention and the thematic programmes and cross-cutting issues adopted under the Convention.

The NBCSAP more or less covers the CBD Thematic Programmes and cross-cutting issues, but some of them are covered very weakly – Liability and redress, Global Strategy for Plant Conservation. Some areas of activity - mountain biodiversity, coral reef, island biodiversity, desertification issues and issues related to indigenous communities - not addressed in the NBCSAP because these activities are not relevant for Lithuania (we don‘t have coral reefs and marine islands; the highest hill in Lithuania is less than 300 m high; there are no indigenous communities in our country and desertification does not occur in Lithuania).

Lithuanian NBCSAP is rather general and it is hard to assess its implementation in details. The assessment of implementation of the obligations under the articles and thematic programmes of the Convention should be done assessing the implementation of the Action Plan, which was prepared for the implementation of the Biodiversity Conservation Strategy. Below are very briefly presented some examples how activities under the Action Plan contribute to the implementation of the obligations under the CBD:

1) General measures for conservation and sustainable use (in accordance with Article 6) have been implemented;

2) In-situ conservation (in accordance with Article 8) has been implemented as far as possible;

3) Sustainable use of the components of biological diversity (in accordance with Article 10) has been addressed as far as possible;

4) Incentive measures (in accordance with Article 11) have been addressed as far as posssible in the Action Plan;

5) Research and training (in accordance with Article 12) are addressed in the Action Plan;

6) Monitoring activities have been implemented as far as possible (exists National Environmental Monitoring Program for 2005-2010);

7) Public education and awareness (in accordance with Article 13) has been implemented as far as possible (also exists National Education Strategy for 2003-2012);

8) Impact assessment and minimizing adverse impacts (in accordance with Article 14) has been implemented (exists Law on Environmental Impact Assessment of Proposed Economic Activity);

9) Access to genetic resources and sharing of benefits arising from genetic resources (in accordance with Article 15) is partly covered;

10) Forest biodiversity: covered in the Action Plan and by the Lithuanian Forestry Policy and its Implementation Strategy (covers also obligations under the CBD);

11) Marine and coastal biodiversity: Lithuania is developing a comprehensive network

of marine and coastal protected areas (mostly according to the requirements of EU Birds (79/409/EEC) and Habitats (92/43/EEC) Directives – "Natura 2000" network).

12) Biodiversity and tourism: Law on Protected Areas; Law on Tourism and National Tourism Development Programme for 2007-2013 partly covers nature tourism (for more details look at the Chapter III);

13) Climate change and biodiversity: in the Action Plan this issue is addressed insufficiently;

14) Economy, trade and incentive measures. Lithuania ratified the CITES convention in 2001, so the trade in endangered species is covered.

15) Invasive alien species: this issue is addressed in the National Biodiversity Conservation Strategy and Action Plan;

16) Protected areas: protected areas cover 15,13% of State territory; network of protected areas is rather coherent; designation of "Natura 2000" network (under the requirements of EU Birds and Habitats Directives) is not finished yet and it is foreseen that in futureprotected areas will expand to 17-18% of State area;

17) Communication, education and public awareness: broadly covered in the NBCSAP.

2.4. An overview of progress made in implementation of priority activities or actions, focusing on concrete results achieved.

Analysing the NBCSAP we can present several examples (based on the list of Action Plans) of progress made in implementation of activities or actions (* - priority action) are:

General action plan of biodiversity protection:

Development of habitats and rare species register is in progress (*);
Methods for calculating damage to biodiversity are developed;
Research of climate change impacts on biodiversity are organized;
Red Data Book of plant communities is published (*);
Biodiversity monitoring sub-program is developed.

Nature Frame action plan:

Nature Frame is incorporated into country's general plan (*);
Nature Frame is incorporated into general plans of districts (*);
Nature Frame is incorporated into general plans of municipalities;

Protection of forest ecosystems:

Law on Forests with provisions on the protection of biodiversity is amended (*);
State and private forest use and management rules by including measures for biodiversity conservation are updated (*);
Rules for main and restoration felling are approved;
Forest communities are monitored (*);
Specialized training courses for forest owners are prepared and on-going;
Map of Lithuanian forests is published;
Book "Lithuanian fungi" is published.

Protection of coastal and the Baltic Sea ecosystems:

Law on Sea Protection is adopted (*);
Law on Fisferies is approved (*);
Bonn Convention is ratified (*);

Legal acts for protective zones of birds wintering sites, resting sites, fish spawning grounds by amending the Law on Protected Areas are established (*);

Coastal protection regulations are developed and approved (*);

Regulations for the protection of fish spawning grounds are dveloped;

Network of marine and lagoon protected areas (including Ramsar sites) for the protection of ecosystems and biocenoses is developed;

Curonian Lagoon biospheric area (polygon) is established;

Measures for the protection of biological values and natural landscape in development of the general Klaipėda district plan and Integrated Coastal Zone Plan are included (*);

Specialized training biological interpretive path projects in the Curonian Spit national park and Pajūris and the Nemunas River Delta regional parks are implemented;

Most valuable aquatic areas for biodiversity, in the Baltic Sea, Curonian Lagoon and the coastal zone are inventorized (*);

Baltic Sea, Curonian Lagoon and coastal zone biological monitoring program is organized;

Inventory of the Baltic Sea and Curonian Lagoon fish resources, determining their population trends, is prepared (*);

Publications "Curonian Spit national park" and "Nemunas River Delta regional park" are issued.

Protection of inland aquatic ecosystems:

Regulations for protection of water bodies and their edges are developed (*);

Measures for the protection of water bodies and their biota are included in the development of water management projects;

Studies of various water body's biota, and their status assessment are on-going;

Monitoring programs on water bodies with studies of river biota and rare species are supplemented;

Posters on protected aquatic biota are published.

Protection of wetlands ecosystems:

Wetland protection regulations developed (*);

Individual regulations of strict nature reserves revised (*);

Žuvintas biosphere reserve established and its regulations developed;

Žuvintas biosphere reserve planning scheme developed (*);

Research of Lithuanian wetland vegetation and fungi composition, and their status assessment conducted;

Wetland biota observation in strict nature reserves is on-going (*).

Protection of meadow ecosystems:

Municipal botanical reserves for the conservation of natural meadows established;

Kretuonas island regeneration project implemented;

Inventory of Lithuanian continental meadows compiled;

Posters on Lithuanian protected meadows biota species published;

Map of Lithuanian meadows published.

Protection of urbanized environmental ecosystems:

Norms for the protection of natural landscape, including biologically valuable areas in urbanized areas are developed (*);

Methodology to determine the impact of human activities upon biodiversity in urbanized areas is developed (*);

Measures for the protection of natural landscape and biodiversity values in the development of general city plans are highlighted (*);

Management projects for detailed green areas are developed and under implementation.

Protection of agricultural environmental ecosystems:

Measures for the conservation of natural landscape and biodiversity while preparing land management plans are highlighted;

Publication "Lithuanian biodiversity protection in agriculture" is published.

Protection of species:

Law on wild flora is adopted (*);

Convention on International trade in Extinct Species (CITES) is ratified (*);

Rules for the management of the Lithuanian Red Data Book are prepared (*);

Rules for compensation of damage caused by the limitation of economic activities in the vegetation sites of protected species prepared (*);

List of rare and extinct species and protected plant communities (Red List) is approved;

Rules for use of plant, animal and fungi species in scientific research are prepared;

Hunting rules are modified to prohibit spring hunting;

Recommendations and action plans for protection of species and habitats, which conservation require international protection are prepared (*);

Principles for identification and categorization of protected species and communities are prepared;

Botanical, zoological and mycological investigations in reserves and regional parks are on-going;

Species in protected areas for evaluation of their status and expediency of establishment are inventorized.

Ex-situ action plan:

Law on use of genetically modified organisms is adopted;

Regulations for protection and accounting of botanical, mycological and zoological collections are prepared (*);

Regulations for trade in wild animals are prepared and approved;

Regulations for reproduction of wild animals in captivity are prepared and approved;

Regulations for species introduction and reintroduction, and replacement of protected species are prepared and approved;

2.5. An indication of domestic and/or international funding dedicated to priority activities.

After Lithuania's accession to the European Union instead of domestic funds, financial resources from the European Union became dominant.

In the frame of the State programme **„Environmental Protection Promotion Programme"** during the 2006-2008 year period 1,5 mil. litas were allocated for protection and management of biodiversity and landscape (including scientific studies of protected species, enforcement of control of use of nature resources, public information).

In the period of 2004-2006 in the frame of the **„Action Programme of Cohesion encouraging for 2004-2006"** 39 mil. litas were allocated for protection of biodiversity and

landscape (75% EU funds and 25% from the State budget) and 11 mil. litas were allocated for coastal zone management (75% EU funds and 25% from the State budget).

A new programme is prepared: **„Action Programme of Cohesion encouraging for 2007-2013“** and there are several measures in this programme which bigger part will be funded from the European Regional Development Fund (ERDF). Several measures and amount of funding from this programme are listed below:

Measure **„Protection of Biodiversity and Landscape“**: total funding 330 mil. litas (280,5 mil. EU funding and 49,5 mil. from the State budget).

Measure **„Setting measures of water protection and management“:** total funding 24 mil. litas (20,4 mil. EU funding and 3,6 mil. from the State budget).

Measure **„Improvement of waterbodies condition“:** total funding 117,6 mil. litas (100 mil. EU funding and 17,6 mil. from the budget of local municipalities).

Measure **„Coastal zone management“**: 19,9 mil. litas from EU.

Measure **„Assessment of polluted areas impact“**: 4,25 mil. litas from EU.

Measure **„Management of earlier polluted areas“**: total funding 74,1 mil. litas (73 mil. from EU and 11,1 mil. from the budget of local municipalities).

Measure **„Improvement of environment monitoring, control and prevention“**: total funding 106,6 mil. litas (90,6 mil. from EU and 16 mil. from the State budget).

Measure **„Creation and development of public information system about the environment“**: 28 mil. litas from EU.

Measure **„Implementation of actions under the public information system about the environment“:** total funding 17,6 mil. litas (15 mil. from EU; 2,6 mil. national funding).

Additionally, in the frame of **Rural Development Programme for 2007-2013** also a huge funding dedicated for forest ecosystems is planed. For example for the measure **„Afforestation (new forests)“** are planed 350 mil. litas for 7 years period; for the measure **„Payments for environmental activities in the forests“** 34,5 mil. litas are planed; for the measure **„Payments for restrictions in Natura 2000 forests“** 88 mil. litas are planed.

One of examples of funding is LIFE+ Programme (under the EU). This programme is focused on providing specific support for the development and implementation of Community Environmental Policy and legislation. It comprises 3 components – Nature and Biodiversity, Environmental Policy and Governance and Information and Communication. It mostly focuses on the Natura 2000 sites (implementation of Birds and Habitats Directives) and the biodiversity conservation mainly in those areas.

Another example of international funding - projects **„Preparation of Protected Areas Designation and Planing Documentation“** and **„Management and Maintenance of Protected Areas“** were funded from EU Structural Funds. In the frame of these projects several Special Protected Areas (part of Natura 2000 network) were designated and managed. Additionally several projects dedicated to biodiversity conservation and valuable habitats restoration were funded by UNDP Global Environmental Fund (GEF) Small Grants Programme and PHARE.

However the domestic budget for nature conservation makes a small percentage of the national budget and despite the EU funds, the domestic budget for nature conservation should be increased.

2.6. A review of successes and obstacles encountered in implementation and lessons learned.

One example of successful protection of biodiversity is LIFE Nature project (project executor was NGO „Žvejonė“ in 2005-2008) called **„Natura 2000 Site Conservation and Management on the Lithuanian Coast“.** During the project implementation: a) on the Lithuanian coast, 505 ha of Natura 2000 habitats that were on the verge of extinction have been restored, and in case of the habitats that have not yet been severely injured a management programme has been created and launched. For the purpose of protecting habitats and declining species of the EU significance, a management programme has been created and implemented ensuring a long-term effect. Even before the completion of the project, observations confirmed that rare plant species are actively recovering in the habitats that have been rehabilitated. Human activity, namely, animal grazing that was extinct in the site has been restored. b) A set of protection measures has been produced for the protection Natura 2000 values in the Curonian Lagoon. They ensure a long-term effect for the preservation of the populations of twaite shad, salmon, asp, ziege, spined loach (*Cobitis taenia*), ensure the preservation of their spawning grounds and reduce by-catch. Also, since the launch of the measures, incidence of birds perishing in fishing nets has been reduced. c) A new Natura 2000 site has been established in the Curonian Lagoon. d) The project has been in a continuous focus of attention of media, therefore, the general society has had many opportunities to get better informed of the coastal natural values. e) Quite a large number of young people got involved in nature protection via the volunteer camps. f) The project is unique in that via monitoring programmes it envisages triggers and nature management plans, which guarantee a long-term effect of the measures applied. What makes it special at the national level is the fact that for the first time in Lithuania four municipalities in the sea coast area got involved in the project implementation and implemented the project in close cooperation with state supervisory institutions, a research institution and NGOs. During the project, fairly drastic nature protection measures were undertaken, e.g. felling of trees and shrubs in fairly large areas, which tends to give rise to conflicts; however, any major conflicts have been avoided not only with supervisory institutions – the measures were adequately accepted by visitors to the coast observing the implementation of the measures. More information is available on the website of the project: http://www.zvejone.lt/life/index_en.php

Another example of successful protection of biodiversity is a LIFE project (with support from the EU) called **“Protection of Emys orbicularis and Amphibians in the North European Lowlands”** (Lithuanian Fund for Nature is project executor in Lithuania (project started in 2005 and will be finished in 2009) with the main objective to ensure a favourable conservation status of the European pond turtle (*Emys orbicularis*) in Germany, Poland and Lithuania. The project also foresees to ensure a favourable conservation status for the European fire-bellied toad (*Bombina bombina*) and the Great crested newt (*Triturus cristatus*) in the areas where they occur together with *Emys orbicularis*. Project activities: 1. Pond restoration/digging; 2. Improvement and creation of nesting areas for turtles; 3. Creation of hibernation sites for turtles and amphibians; 4. Installing a sustainable grazing regime with a hardy grazer; 5. Removal of unwanted vegetation; 6. Rearing of turtles; 7. Management of foraging habitats. More information is available on the website of the project: http://www.glis.lt/life/

As a very successful example we can also mention the project **„Conservation of Inland Wetland Biodiversity in Lithuania“** (project executor public agency Nature Heritage Fund).

This project is funded from UNDP GEF Small Grants Programme. Project sites are 5 most valuable wetlands in Lithuania (4 of them are Ramsar sites). More information is available on the website of the project: http://www.wetlands.lt/eng/index.php

Additionally a good example of successful protection of biodiversity outside protected areas with the involvement of local people is the concept of **Woodland Key Habitats** (WKH). WKH are small areas (in Lithuania WKH average area is 3,21 ha) in need of protection in commercial forests or protection forests, where there is a high likelihood of occurrence of narrowly adapted, endangered, vulnerable or rare species. A WKH can be a patch of old-growth forest, a stream bank, wooded meadow, island of mineral land within a mire, a burnt woodland, the surroundings of a spring, a single big tree, etc. During 2001-2004 year period 8902 WKH which covers 26427,5 ha in total, were identified in Lithuania.
The preservation of WKH is not mandatory in Lithuania and is a subject to the free will of the forest owner or forest enterprise.

As another example of success could be mentioned the increase of protected areas: from 12% in 2004 to 15,13% of State territory in recent days. During 2004-2008 77 special protected areas (SPA) under the Birds Directive (79/409/EEC) were designated and 298 potential Sites of Community Importance (pSCI) under the Habitats Directive (92/43/EEC) and 99 of pSCI are already approved by the Government of Lithuania. These sites are the part the EU Natura 2000 ecological network in Lithuania. In total Natura 2000 areas in Lithuania cover 11% of the State territory (SPA - 7 %; pSCI - 9%; overlap is 5%). Also in Lithuania there are 5 sites included into UNESCO world heritage list; 5 Ramsar sites (wetlands of international importance) and 3 sites protected under HELCOM Convention (Baltic Sea protected areas).

Also it should be highlighted that during 2006-2008 more than 100 nature management plans (strategic planning documents) for various protected areas were prepared (focused on concrete actions on conservation, restoration and management of valuable/rare habitats and species). 55 such plans are officially approved by the orders of the Minister of Environment and the procedure of the approval of the rest nature management plans is on-going.

2.7. An analysis of the effectiveness of NBCSAPs, focusing on:

- Whether observed changes in status and trends in biodiversity (as described in Chapter I) are a result of measures taken to implement NBCSAPs and the Convention.

It could be stated – partially, because the NBCSAP is not a legally binding document and various described actions and activities are as recommendations, so not all of them were implemented and no comprehensive overviews have been made. But several measures taken to implement NBCSAP influenced changes in status and trends in biodiversity. We think that this question is closely linked with question (d), so please look above.

Lithuania's biodiversity conservation system is focused mostly on implementation of requirements of EU (establishment of Natura 2000 ecological network), thus the overviews of implementation have focused mainly on compliance with EU Birds (79/409/EEC) and Habitats (92/43/EEC) Directives rather than the implementation of the CBD.

- Whether the current NBCSAP is adequate to address the threats to biodiversity identified in Chapter I.

Shortly it could be stated that majority threats to biodiversity identified in Chapter I are addressed in NBCSAP. Such threats to forest ecosystems as, for example, intensive forest felling, destruction of small forests as a result of privatization, damage of forest ecosystems as a result of natural disasters (droughts, pests, etc.) and pollution, intensive recreational use are addressed in the current NBCSAP.

Talking about wetlands ecosystems – such threats as land reclamation, eutrophication, reduction of ground water level, overgrowing with shrubs and trees, appearence of atypical species – ar addressed in the NBCSAP.

Threats to meadows ecosystems – afforestation, trnsformation into farmlands, abandonment (overgrowing), invasion of ruderal species – identified in Chapter I are addressed in the NBCSAP. Negative impact on sand ecosystems due to the overgrowth of open sand stretches, planting with forest crops for economic use, or intensive recreation is addressed in the current NBCSAP. Threats to aquatic ecosystems – pollution, anthropogenic eutrophicaton, land drainage – are addressed in the NBCSAP.

Main threats to biodiversity – pollution and introduction of alien fauna and flora – identified in Chapter I, are addressed in the current NBCSAP. Main threats to various taxonomic groups of fauna and flora – intensive economic activities, fragmentation of habitats, pollution, intensive recreational activities – are also addressed in the NBCSAP.

2.8. The specific information requested in COP 8 decision (see a list of these requests contained in Annex I of the guidelines).

VIII/5. Article 8(j): Participation of indigenous and local communities.

There are no indigenous communities for the purposes of Art. 8(j) of the Convention in Lithuania. People carrying traditional knowledge (of the use of nature) could, to some extent, be regarded as indigenous but they do not form distinct communities, so this issue is not applicable for Lithuania.

Documents contributing to the use and preservation of traditional knowledge of nature are few in Lithuania and they usually address the issue only indirectly. The most important of these documents is The Rural Development Plan for 2007-2013 period, which contains a number of measures related to the promotion of traditional uses of nature (the most important is restoration and maintenance of natural/seminatural habitats).

VIII/21. Genetic resources in the deep seabed.

In general we can say that Lithuania has not identified any activities or processes under its jurisdiction or control which may have significant adverse impacts on deep seabed ecosystems or species.

One of the NBCSAP ecosystematic level (in-situ) goals is: *prevent further degradation of*

marine ecosystems by developing scientifically sound protection and rational use of marine deep biocenoses, and by strengthening marine environment protection systems.
Main provisions concerning protection of marine environment and use of marine resources are stipulated in the Law on Protection of the Sea Environment (1997, amended in 2007 (more information in the next chapter)), Law on Fisheries of the Republic of Lithuania (2000), Law on Environmental Impact Assessment of Proposed Economic Activity (1996, amended in 2005 (more information is in the chapter VIII/28)), Law on Protected Areas (2001).

In Lithuania Ministry of Agriculture is responsible for the development of the policy of the fisheries sector, state regulation of this sector, implementation of the EU Common Fishery Policy, also protection of fish resources and their control in the seas. The Lithuanian marine fisheries sector is administrated by the Ministry of Agriculture and its authorized institution – the Fisheries Department under the Ministry.

The Fisheries Research Laboratory of the Lithuanian State Pisciculture and Fisheries Research Centre regularly monitors and investigates the status of fish resources, conservation of habitats in the territorial waters of the Baltic Sea and exclusive economic zone of the Baltic Sea.

In Lithuania also exists Center of Marine Research under the Ministry of Environment, which main activities are:

- Collection, analysis and evaluation of data and information about natural processes in the Baltic Sea and the Curonian Lagoon, the impact of anthropogenic activity on the state of the environment and living organisms.
- Organization, coordination and implementation of the state environmental monitoring of the Baltic Sea and the Curonian Lagoon.
- Management and investigation into extreme situations (pollution with oil and other chemical components, water ‘blooming', fish death, floods, coastal erosion, etc.).
- Modeling of the ecosystems of the Baltic Sea and the Curonian Lagoon.
- Performance of special research into the impact of harbors dredging, hydrotechnical construction and soil dumping into the sea on the environment.
- Implementation of EC Water Framework Directive in the coastal and transitional waters.
- Participation in the international (HELCOM) monitoring programme and in other international projects of HELCOM, ICES, BOOS, EUROGOOS, BEEP EDIOS, BEWERS, PAPA, SEA-SEARCH.
- Organisation and maintenance of the Marine Environmental Data Fund, registration of monitoring and scientific research into the Baltic Sea and the Curonian Lagoon, accumulation of data and reports.
- Submission of data and information to Lithuanian administrative, academic and scientific institutions, public, Helsinki Commission (HELCOM), International Council for the Exploration of the Sea (ICES), European Environmental Agency (EEA), European Commission (EC).

VIII/22. Integrated marine and coastal area management.

One of the NBCSAP ecosystematic level (in-situ) goals is: *prevent further degradation of the coastal ecosystems by strictly limiting the intensity of use in coastal zones, by prohibiting construction close to the sea, protecting rare and declining biocenoses, and conserving*

wintering sites and fish spawning grounds of international importance.

General provisions concerning the conservation of marine and coastal environment are stipulated in the Law on Environment Protection (1992, with amendments). Other legal acts which regulates the issue are: Law on Protection of the Sea Environment (1997, amended in 2007), which determines the main principles and measures of the protection of the sea environment, competence of the state and municipalities institutions and their main responsibilities in the field of the protection of the sea environment; Law of the Sea Coastal zone (2002) which regulates the use and protection of coastal landscape, conditions of use of sea shore and coastal waters, and restrictions of certain economic activities.

First Sea Coastal Zone Management Programme was adopted in 2003. In 2008 Sea Coastal Zone Management Programme for the year 2008-2013 was adopted. This programme regulates natural coast protection and regeneration measures; protection of the coast natural formation process.

Activities within marine protected areas are regulated by management plans (prepared according to the requirements of the Law on Protected Areas (2001)), which are developed separately for each protected area according to the specific features of the area. In Lithuania there are 3 marine protected areas: Curonian Spit National Park (total area – 24996 ha; marine area – 12435 ha; included into UNESCO world heritage list); Baltic Sea Talasological Reserve (total area – 14027 ha (100% marine) and part of Pajūris Regional Park (3070 ha). These areas are Natura 2000 network sites (according to the EU Birds and Habitats Directives).

Additionally it should be mentioned that Lithuania ratified HELCOM convention in 1997 and actively contributes to the implementation of it's goals. In 2003 Lithuania accessed the United Nations Convention on the Law of the Sea (UNCLOS). And also in 2005 ratified Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas and in 2008 ratified International Convention for the Regulation of Whaling.

In summary, it can be stated that the recommendations of IMCAM have been incorporated into the existing legislation.

VIII/24. Protected areas: financial support to developing countries.

This is very complicated issue, because Lithuania as a country with economy in transition has not yet reached the stage where it could provide financial aid to developing countries, but first steps are made – Lithuania - Moldova development cooperation agreement in the field of nature conservation is under preparation. Additionally we can say that Lithuania twice provided support to Belarus in order to exterminate larva of blood sucking insects (*Byssodon maculatus* and *Simulium reptans*) in Nemunas river (Ministry of Environment of Lithuania bought special biological preparation (larvicidae) "VectoBac 12 AC" and gave it to Belarus).

VIII/28. Implementation on guidelines on impact assessment.

Environmental impact assessment (EIA) of projects with significant environmental impact and involvement of the public is a mandatory procedure in Lithuania required by the Law on Environmental Impact Assessment of Proposed Economic Activity (*Official Gazette*, No. 82-

1965, 1996, No. 84-3105, 2005). Environmental impact assessment included mandatory assessment of the planned economic activity on biodiversity. The aims of the environmental impact assessment are to identify, describe and assess possible direct and indirect negative impact of the planned economic activity and to determine whether planned economic activity is allowed in the chosen territory. When environmental impact assessment of planned economic activities is not obligatory, but construction, reconstruction of exploitation of the objects would have impacts on environment, also when measures provided by EIA report have to be described in greater detail and accuracy, construction plan shall include environmental section. This section has to include assessment of present state of environment, impact on the environment of the planned economic activity and measures minimizing this impact.

Environmental impact assessment of plans and programmes ((Strategic environmental assessment) is also mandatory procedure required by the Governmental Resolution on the approval of the Order of the Assessment of the Effects of Certain Plans and Programs on the Environment (*Official Gazette*, 2004, No. 130-4650).

Additionally there is a supplementary legal act - the Order No D1-255 adopted by the Minister of Environment on 22 May 2006 „On the approval of the description of the procedure for the determination of the significance of the impact of plans, programmes and planned economic activity on the designated or potential Natura 2000 sites" (*Official Gazette*, 2006, No. 61-2214). Following the procedure established by this Order, while making the conclusion regarding the potential significance of the impact caused on the area by the economic activity planned to be carried out on Natura 2000 site or adjacent to it environment or while carrying out procedures for the strategic assessment of the consequences of the plans or programmes for the environment or procedures for the assessment of the planned economic activity on the environment, the activity in such areas may be subject to additional conditions allowing to avoid adverse impact on the protected values or reducing it to an insignificant level.

Requirements to perform Environmental impact assessment of projects, plans and programs are also stipulated in the Art. 24 paragraph 8 of the Law on Protected Areas (1993, amended in 2001): *„Projects that are not directly connected with the management of European ecological network Natura 2000 sites but likely to have a negative impact to the natural habitats and protected flora and fauna species, must be assessed according the procedures set in the Law of Environmental Impact Assessment of Proposed Economic Activities. The assessment of plans and projects, that are not the subject of environmental impact assessment according the requirements of Law on Environmental Impact Assessment of Proposed Economic Activities, must be carried out according the order set by the Government or its authorized institution. Institutions authorized by the Government shall approve the projects only after having ascertained that projects will not negatively affect the European ecological network Natura 2000 sites and, if appropriate, after having obtained the opinion of the general public. If the implementation of projects related with social or economic public interests and there are no alternative solutions, it is obligatory to apply compensatory measures, which are necessary for protection of general wholeness of European ecological network, and to conserve natural habitat types and state of protected flora and fauna species."*

CHAPTER III. SECTORAL AND CROSS-SECTORAL INTEGRATION OR MAINSTREAMING OF BIODIVERSITY CONSIDERATIONS

3.1. General Programmes

The Long-term Development Strategy of the State (LTDSS) adopted by Lithuanian Parliament on 12 November 2002 (Resolution No. IX-1187) is a strategic planning document that reflects the vision of the long-term development of the State based on the analysis of the economic, social, cultural and political situation. The LTDSS is one of the most significant planning documents, which is instrumental in making general and sectoral strategies of the State mutually consistent. The LTDSS outlines a vision of the long-term development of the State reflecting mutually consistent long-term development directions of all sectors of the national economy. It states that Factors of environmental protection will ensure a harmonious and sustainable development of Lithuania in line with the objectives of air, water and biological diversity programmes, as well as the programmes for the protection of the Baltic Sea and the Curonian Lagoon, waste management, international commitments and EU standards as well as with the economic capabilities of the country. In environmental protection long-term development trends are implementation of the principle of sustainable development, creating preconditions for a rational use, preservation and recovery of natural resources, ensuring adequate quality of the environment having regard to the EU norms and standards, preservation of properties of natural heritage, the peculiar character and biodiversity of the environment, increasing the area of land under forests and the role of forest protection.

The Long-term Economic Development Strategy of Lithuania until 2015 (approved by the Resolution No. 853 of the Government of the Republic of Lithuania on June 6, 2002) is an integral part of the Long-term Development Strategy of the State. It sets forth long-term economic policy trends that are essential for acceleration of the national economy restructuring and also enabling adaptation to changes of the internal and international situation as well as maximum increase and effective use of the national economic potential. Protection and restoration of biodiversity is mentioned in the Rural and agricultural development strategy (section on Rural development - environmental protection, fisheries and forestry). Strategy of economic factors of environmental protection foresees development of the comprehensive system of environ-mental policy measures is based on the notions of sustainable development, thorough integration of environmental considerations into decision making at all sectors of economy, internationally acknowledged "polluter pays principle", and orientation towards pollution prevention rather than "end-of-pipe" solutions. Substantive part of this Strategy is devoted to the assessment of predictable *impacts* of environmental policies on the key sectors of Lithuanian economy: industry, energy, transport and agriculture, but it mainly concerns "grey' issues of environment, except agricultural sector, where biodiversity is mentioned again.

The National Lisbon Strategy Implementation Programme. With a view to invigorate the European economic growth and to give a new impetus for European competitiveness enhancement, the Lisbon Strategy was developed in 2000. The first subsequent five years showed that the expected results were not attained. Therefore, in March 2005, the European Council reviewed the Lisbon Strategy and identified two priority areas: economic growth and promotion of employment. In March 2008, the European Council initiated a new three-year (2008–2010) cycle of implementation of the Lisbon Strategy. Accelerating implementation of reforms to ensure further growth and competitiveness enhancement was placed within the focus on the agenda. The Government of the Republic of Lithuania approved the National

Lisbon Strategy Implementation Programme for 2008–2010 (hereinafter referred to as the Programme) by its Resolution No. 1047 adopted on 1 October 2008. The Programme identifies the goals for the national economy growth and employment promotion as well as their implementation measures. It also sets the key indicative targets and aspirations of Lithuania until 2010. One of the tasks of objective 4 (to promote sustainable use of resources and strengthen the synergy of environmental protection and growth) is to preserve the biological and landscape diversity of the country, to promote the restoration of destructive elements of nature and to ensure the rational use of landscape and biological diversity. The measures under this task include fitting out tourist paths and tracks of educational nature in national parks, developing ecological education system, afforestation of agricultural land, completion of the formation of the protected areas network (Natura 2000) and drafting planning documents of the environmental management of such territories, and Implementation of the project for the restoration and preservation of the Lithuanian Baltic coastal zone. The responsibility for implementing these measures was shared by Ministries of Environment, Agriculture and Economy (State Tourism Department), and Klaipėda County Governor.

Programme of the Government of the Republic of Lithuania for 2008-2012 was approved on February 25, 2009. The section on environment contains subsection of biodiversity and landscape protection. The actions include, among others, preparation of biodiversity strategy and action plan, ensuring cross-sectoral coordination, integration of biodiversity into sectors of Lithuanian economy, promotion of better and faster implementation of international obligations in order to stop biodiversity loss, establishment of register of protected species and habitats and its integration into strategic environmental impact assessment; support for scientific research on evaluation of biodiversity status, reasons of its decline and defining scientifically based protection measures; introducing incentive system for proper management of protected objects and territories in protected areas, stricter implementation of protection of forest biodiversity and forest felling control, and restoration of forests. However, institutions responsible for implementation of these actions are mainly Ministries of Agriculture and Environment and in some cases Ministry of Transport. Even integration of biodiversity related issues into different sectors and preparation of new Biodiversity Strategy is to be implemented only by the three above ministries.

Protection and enhancement of biodiversity and landscape is defined in the **Master Plan of the Republic of Lithuania** approved by the Resolution No. IX-1154 of Parliament of the Republic of Lithuania on October 29, 2002 through the system of valuable conservation areas (national ecological network as a part of nature Frame), developed on the basis of Ramsar sites, CORINE biotopes, IBAs, Natura 2000 network. The Master Plan recommends to integrate the requirements and measures of landscape and biodiversity protection into strategies, programmes and action plans of all sectors of economy, first of all, agriculture, forestry, fisheries, urban development, transport, mining, tourism,, industry, energy; to implement requirements and recommendations of international conventions and EU directives on landscape and biodiversity protection.

The Lithuanian National Sustainable Development Strategy, approved by the Government decision No 1160 of 11 September 2003, includes a common strategic objective for the sustainable development, namely, coordinate the interests of environmental protection, economic and social development, ensure clean and healthy environment, efficient use of

natural resources, overall economic welfare of the society, strong social guarantees; and the average of the EU states achievable during the period of the strategy implementation (until 2020) according to the indicators of efficient use of economic, social and natural resources; and according to the indicators of environmental pollution not exceeding the EU standards, as well as implement international conventions according to the requirements, which limit the environmental pollution and impact on global climate. Although landscape management problems are not identified in the EU Sustainable Development Strategy, they are considered as very important priorities in this Strategy due to the importance of landscape protection and its rational management.

The Lithuanian National Sustainable Development Strategy determines 11 priorities of sustainable development:

1. moderate and sustainable development of economy branches and regional economy;
2. reduction of the social and economic disparities among the regions and inside the regions retaining their peculiarities;
3. the reduction of the impact of the main economy branches (transport, industry, energetic, agriculture, accommodation, and tourism) on the environment;
4. more effective use of natural resources and waste management;
5. reduction of danger to human health;
6. soothing the global climate change and its effects;
7. better protection of biodiversity;
8. better protection of the natural surroundings and its rational management;
9. enhancement of employment, reduction of unemployment, poverty and social exclusion;
10. enhancement of the role of education and science;
11. protection of the Lithuanian cultural peculiarities.

Issues of landscape and biodiversity are discussed in a separate chapter under Environmental quality. Short-term objectives are to evaluate the main changing trends in landscape and biodiversity, provide legal, economic and institutional preconditions for conservation and use of this diversity as well as nature and cultural values following sustainable development principles. Mid-term objectives are to establish a modern system for protection and use of landscape, biodiversity and cultural heritage in line with national interests and EU requirements. Long-term objectives are to preserve landscape and biological diversity, nature and cultural heritage values, promote restoration of damaged natural elements, ensure rational use of landscape and biological diversity. There is a wide range of tasks and measures for implementation of each objective concerning species and habitats.

However, chapters on economic sectors do not have references to biodiversity. Even the list of indicators for sustainable development contains only two general indicators related to biodiversity:
Coverage of protected areas: thousand ha and % from total area of cultivated land; and.
Forest are: thousand ha and % from total area of Lithuania, ha per capita

Successful implementation of the Sustainable Development Strategy can be ensured only if its main provisions and ideas are understood and supported by the whole society. Nevertheless, the role of the state institutions is very important.

3.2.Agriculture and Rural Development

Agriculture in Lithuania is one of the priority sectors playing an important economic, social and environmental role. During the Soviet period, biological diversity was most adversely affected by land drainage, which resulted in the drying out of natural meadows and wetlands, small rivers were canalised, river valleys were damaged, small plantations in fields and single farmsteads were removed. Changes of agricultural intensity in any direction cause a certain fluctuation of biodiversity structure and species numbers. For this reason, any farming activities had direct impact on the environment. Most often intensive farming had a negative impact on biodiversity; however in some cases abandonment of farming is as negative.

After restoration of independence, the agricultural activity has, however, been decreasing as the agricultural crisis speeded-up the degradation of meadows and other "open" habitats. This happened due to the decline (and in many cases – abandonment) of farming activities in many areas. After regaining independence, with decreased agriculture and increased fuel prices, use of meadows and pastures has significantly decreased. First of all, the less favoured areas, most often wet areas that were at further from farms, were abandoned, and these areas were the most valuable ones from the biodiversity point of view. In such wet areas that were mowed and grazed earlier, rare species of waders and other meadow birds protected in Lithuania and the EU were breeding. Currently, succession processes are taking place in those abandoned areas, and the open areas are becoming overgrown with bushes and tall grasses leading to loss of variable habitats and threatening many connected species of plants and animals.

In Lithuania there are found 53 types of the listed habitats in the Habitats Directive Annex I (out of total 218). Most of them are subject to some kind of human activity and therefore there is a need to ensure the proper management and protection of these areas. The examples are hay and alluvial meadows, western taiga, marshes, swamps, etc. Protection of landscape and biodiversity is very closely related and contribute to each other. Lithuanian rural landscape with big areas of natural and semi natural open areas rich in biodiversity make up the biggest part of the territory. Most of the natural and semi natural meadows and pastures, all swamps, also surface water bodies are regarded as high nature value areas in Lithuania. Most of these areas are the Natura 2000 areas, thus preservation of these habitats will also ensure preservation of the typical agrarian landscape. According the inventory of natural meadows carried out in 2005 by Lithuanian Fund for Nature and Institute of Botany, there is about 42,1 thousand ha of such areas. Furthermore, there is about 81 thousand ha of wetlands. The establishment of Natura 2000 territories takes place in a participatory approach, thus, the private landowners are becoming more and more aware of their role in preserving these values. However, due to economic bearings behind, this is only possible with the financial support being provided for implementation of the required site management actions.

Most of the designated Natura 2000 areas are located in rural areas, and many are dependant on high nature value farming methods that maintain habitats such as hay meadows, low intensity grazing of semi-natural vegetation, extensive cereal systems, floodplain grasslands, etc. Due to the fact that High Natural value farming systems are not always profitable for the farmer because the price that the consumer pays does not include the environmental added value that the farmer provides with low intensity/inputs as compared to the conventional farming. Thus, the EAFRD funds are used to pay the farmer for these environmental "products".

In the view of Natura 2000 territories protection, there seems to be strong needs to encourage the extensive grazing practices in order to maintain open landscape habitats. A lot of these are threatened by overgrowth changing the natural characteristics of the habitats. Some Natural 2000 territories and High nature values areas are, however, in the areas favourable for farming where 25 farmers are eager to intensify their production. Here actions are needed to ensure that the farming is on the level compatible with environmental requirements to secure the existing natural values.

Baseline of environmental restrictions on farming and forestry activities in protected areas differs depending from the type of protected area. This baseline is set in following legal acts:
1) Law on Protected Areas (Art. 7, 9, 11, 13, 15, 17, 19, 20),
2) Special Conditions on Land and Forest Use approved by the Governmental Resolution No1640 on 29 December 1996 (chapters 29, 34-47),
3) Statutes of individual protected areas approved by the Government or Minister of Environment.

Special regulatory provisions reflecting ecological requirements if species and habitats of Community Interest are set by Governmental Resolution No 276 on 15 March 2004 (with amendments on 19 April 2006, No 380). These regulatory provisions have to be reflected when preparing statutes of new protected area, amendment of existing one or their management plan.

Depending on the type of protected area as well as on species or habitats to be protected different combinations of restrictions for ongoing farming practice from most common 5 have been set:
1) draining or any other alterations of the hydrological regime is forbidden,
2) the ploughing meadows or re-sowing them with cultural grasses is prohibited,
3) the number of livestock units per ha in grazed areas is restricted and set to be 1 or less;
4) the earliest date of mowing meadows is determined after 15 of June,
5) using of fertilizers, pesticides or liming substances is prohibited.

Integration of environmental and biodiversity issues into agricultural sector is reflected in the Rural Development Programme for the period 2004 – 2006, and the current Rural Development Programme for the period 2006 – 20013, as well as National Strategy Plan for Rural Development 2007 – 2013.

Under the **Rural Development Programme for the period 2004 – 2006** approved by the Decision of the European Commission No. C(2004)2949 on August 3 th, 2004, support is being provided for the implementation of the following measures:
Measure 1: Early Retirement
Measure 2: Less favoured areas and areas with environmental restrictions
Measure 3 Agri-environment
Measure 4: Afforestation of agricultural land
Measure 5: Support for semi-subsistence farms undergoing restructuring
Measure 6: Meeting standards
Measure 7: Technical assistance
Measure 8: Direct payments top-ups

Measure 2: Less favoured areas and areas with environmental restrictions included also Payments in Natura 2000 areas. The number of applications received exceeded the expected amount. Applications for support under this measure have been provided together with the applications for direct payments for agricultural land and crops. Such a high activity rate was conditioned by a very intensive awareness campaign of the Ministry of Agriculture encouraging the farmers to declare their crops and agricultural land. However, amount of farmers applying environmental restrictions in Natura 2000 areas for bird protection was much below the expected 5 000 (only 370 farmers applied for this type of payments, which makes low implementation rate – only 7.4).

Measure 3 Agri-environment payments constitutes of 4 sub measures, i.e.:
1. Protection shore belts of surface water bodies in meadows and arable land and prevention of soil erosion;
2. Landscape Stewardship Scheme;
3. Organic Farming Scheme;
4. Rare Breeds Scheme.

In 2006 in total 1 335 applications have been received. More than half of the applicants, i.e. 77 pct. received for support under Organic farming scheme.

In 2004-2006 the amount of organic farms organic farming area increased - in 2006 the area of 2340 organic farms constitutes of 102 thou ha, compare with 2003 increased 4,4 times. The reason of this phenomenon was high compensatory payments. The average size of organic farm increased too 108 till 41 ha in 2006 (3,3 times compare 2003). The mainstream branch of organic farming was crop production In Lithuania there were 4,8 SG for one farm in average. Though the speed of rising of organic farming area was highest in EU, the growing of the amount of organic production wasn't so impressive because the lack of marketing measures enlarging the demand of organic products.

In 2004 – 2006 there were allocated 55.614,85 EUR mill, 3929 applications have been provided, required amount of funds in applications, thout. EUR - 41.542,59. Only 14 farmers have submitted applications to participate in Protection shore belts of surface water bodies in meadows and arable land and prevention of soil erosion. The area of protection shore belts in meadows is 0,42 ha, in arable land – 0,06 ha.

16,6 pct of all beneficiaries submitted applications participated in Landscape Stewardship Scheme and in 2006 the amount of them increased 3,5 times. This scheme implemented in 559 ha area of UAA. There were improved the conditions of 78 ha of wetlands and 481 ha of meadows. Preservation of perennial meadows reduced soil erosion, the trimming of wetlands improved rural landscape.

521 applications were submitted under Rare Breeds Scheme for preservation of 539 animals and birds.

Evaluation of the of these measures made clear, that there was a need to encourage the extensive grazing practices in order to maintain open landscape habitats in order to protect Natura 2000 territories.. A lot of these are threatened by overgrowth changing the natural characteristics of the habitats. Some Natura 2000 territories and High nature values areas (most

of them though are within Natura 2000 network) are, however, in the areas favourable for farming where farmers are eager to intensify their production. Here actions are needed to ensure that the farming is on the level compatible with environmental requirements to secure the existing natural values. Another issue concerned the implementation of the Nitrate Directive and the Water Framework Directive where agriculture is considered as one of the key diffused water pollution sources and result into insufficient water quality both in open water bodies as well as dug well which are used a lot for drinking water in rural areas.

This situation was be targeted through the framework of axis II of **Rural Development Programme for the period 2007 – 2013** (approved by the Decision of the European Commission No. C(2007)5076 on October 19th, 2007) by implementing Agri-environment payments measures, the less favourable area measure and the Natura 2000 measures as well as measures for improving the landscape's and water quality.

The Objective of ***AXIS II - Improving the environment and the countryside*** is to improve environment and landscape *to stop decline of biodiversity* through rational use of land resources and promotion of sustainable development of agriculture and forestry.
Its priorities/specific objectives are environmentally friendly farming practices; mitigation of climate change; and preservation of biodiversity and development of high nature value and traditional agrarian areas.

The first priority (Environmentally friendly farming practices) is aimed at overcoming intensification of agricultural activities within areas rich in natural and landscape values. Therefore an Organic Farming Scheme of agro-environmental measure favouring the environment and landscape is being implemented. The support under this scheme is provided for implementation of additional actions going beyond the set environmental requirements, that favour rural landscape, contribute to water quality and ensure decreased leakage of nutrients from agriculture into water bodies, encourage rising of local rare breeds for agro-biodiversity purposes, improve soil quality and conditions.

Due to the fact that soil erosion and acidity also possess serious problems both to the environment as well as farming conditions, it is foreseen to implement adequate agri-environmental schemes eliminating these problems to the extent possible. Moreover, the limitation on fertilizing in the implementation areas of measures will also reduce water pollution with nutrients occurring as a result of intensive farming. Support within measures aimed at prevention of soil erosion goes beyond the baseline which is set by the Good agricultural and environmental conditions. Also afforestation in areas sensitive to erosion (alongside other important environmental criteria) is given priority. In addition, no doubt promotion of organic agricultural production will have a positive impact to the environment (soil, water, biodiversity, air) and will also result into higher value agricultural production, and in return higher incomes for farmers, and it is of utmost importance today, when the demand for this produce both within local and international market is increasing. The pollution with nutrients and in this way will contribute to the achievement of water protection goals set up in the Water Framework Directive.

Under the Agri-environmental measure is 6 submeasures and in addition commitments following from the previous supporting period.

The objectives of the measure are generally to secure improvements in relation to:
environmental sound agricultural practices; improving the underground water and soil; *preservation and maintenance of meadows*; *securing breeding of local breeds*; general reduction of negative impact on water bodies; production of healthy food and foodstuffs best fitted for customers requirements; improved environmental protection; *conservation of biodiversity*; *sustainable use of natural resources*; *conservation of traditional countryside landscapes*.

This measure is as other measures under Axis II key funding directly related to improvements on environmental conditions. The submeasures included under the measure are:

- Landscape Stewardship Scheme
- Protection shore belts of surface water bodies in meadows and arable land and prevention of soil erosion
- Rare Breeds Scheme
- Programme for improving the status of water bodies at risk
- Organic Farming Scheme
- (Commitments of Agri-environmental measures of RDP 2004-2006)

The aim of the ***Landscape Stewardship Scheme*** is to secure needed management of meadows, secure extensive farming on these areas and contribute to counteract invasion by Sosnovsky Cow Parsnip (*Heracleum sosnovsky*). The objective of this scheme is to maintain natural and semi-natural meadows, wetlands, preserve or, if necessary, restore extensive farming systems on meadows and in wetlands, to reduce the intensity of farming on intensively used meadows, to protect biodiversity and water bodies against pollution. The measure is important related to biodiversity conservation and implementation of EU nature protection regulation – especially the Habitats Directive. Wetlands will broadly benefit from the measure because of reduced use of nutrients, no drainage, and delayed and restricted grazing regimes. This scheme is very important for the protection of natural and semi-natural habitats that have been established over years of extensive farming on low-output meadows, as with farming practice changing, such habitats are now on a rapid decline. The scheme is also very important for the restoration of wetlands that suffer rapid deterioration of their state due to the discontinuation of extensive farming in such areas or drainage and intensive farming on adjacent territories. As agricultural landscape with insertions of natural components comprises the biggest part of the Lithuanian territory, it will help preserving the biological diversity and restoring the traditional landscape. Insertions of natural vegetation in the contemporary agriculture are very fragmentary and the areas of melliferous plants are planted relatively seldom therefore such areas are important for a multitude of species of wild insects, feeding on pollen and nectars, including butterflies, wild bees and bumblebees. The scheme will support development of richly blooming fields or zones, which will be arranged in farms in a mosaic way, which will create appropriate conditions for wild insects and bees.

This measure comprises 8 different activities:
Activity 1 - management of natural and semi-natural meadows;
Acitivity 2 - management of wetlands;
Activity 3 - management of shore protective belts of water bodies in meadows;
Activity 4 - protection of water bodies against pollution and soil erosion on the arable land;
Activity 5 - stubbly field in winter season;
Activity 6 - strips or plots of melliferous plants in the arable land;

Activity 7 - management of the holding landscape elements;
Activity 8 - management of reclamation ditches.

The aim of the ***Protection shore belts of surface water bodies in meadows and arable land and prevention of soil erosion*** measure is to secure shore belt along water bodies in meadow areas and arable land to secure reduction of leaching of nutrients into the water and reduce generally soil erosion. The belts left unattained will experience overgrowth, retention of nutrients will be reduced and the biodiversity value will be reduced. Managed belt can however reduce the impact of nutrients and pesticides on the water bodies. Soil erosion will likewise be reduced. The measure supports implementation of EU regulation like Habitats, Water framework, and Birds directives. Grazing to prevent overgrowth is obligatory under the measure.

The aim of the ***Rare Breeds Scheme*** is to secure old breeds according to listing and certification of these from extinction. It supports implementation of the Convention on Biodiversity and secure raised animal welfare. The genetic resource would be severely threatened by extinction without the measure.

Local breeds of animal are identified in Programme of FAO AnGR Global Focal Point & Baltic Genofond in cooperation with FAO SEUR. The local breeds of animals and birds in danger of extinction and the number of rare-breed animals and birds registered as of February 22, 2006 are as follows:
Žemaitukai horses (Also Big Žemaitukai) – 314;
Lithuanian Weighted horses – 472;
Lithuanian Ash-Grey – 162;
White-backed cattle – 162;
Lithuanian Black and White cattle (old genotype)– 339;
Lithuanian Rufous (old genotype) – 101;
Lithuanian White pigs (old genotype) – 1490;
Lithuanian Native (Wattle) pigs – 45;
Lithuanian Native Coarse-wooled sheep – 41;
Lithuanian Blackhead sheep (old genotype)– 1849;
Chicken geese – 355.

The information about the number of registered rare-breed animals and birds is given by State animal supervision service under Ministry of Agriculture.

National legal acts restrict use of fertilizers and pesticides in obligatory shore protective belts. But for the intensive agricultural activity increasing of use of pesticides and fertilizers is threat that pesticides and fertilizers will run into water bodies. In terms of area, the catchments areas of water bodies at risk due to the agriculture impact occupy nearly one-fourth of the country's territory. To achieve good status of these water bodies, more attention has to be paid to this particular territory. Agriculture is the source of scattered pollution, one that is much more difficult to control than the pollution coming from concentrated pollution sources. The aim of the ***Programme for improving the status of water bodies at risk*** is to increase the quality of water bodies in i.e. accordance with obligations following from the Water Framework Directive. It targets the good status of water bodies that should be attained in accordance with the directive and national Lithuanian transposition. Main problem for the waters related to

agricultural practices concerns leaching of phosphor and nitrogen from fertilisers. The activity supported under the measure includes conversion of arable land into meadow areas in the basins of water bodies that are at risk not to achieve good status because of negative agricultural impact. As the implementation of measure will reduce nutrients inflow to the Baltic Sea, it will contribute to the reduction of Baltic Sea eutrophication processes that is identified as the priority Baltic Sea environment problem by HELCOM. This measure will also have impact on biodiversity.

The number of organic farms has been steadily increasing - from 9 organic farms in 1993 cultivating 148 ha to 2086 farms in 2008 all together occupying almost 121 thousand ha. Despite of recent growth, organic production remains relatively small scale and fragmented and this is hampering effective marketing. The aim of the ***Organic Farming Scheme*** is to increase and support organic farming, ensuring environmental protection and production of quality organic products. This measure provides additional payment for production with special technological restrictions in relation to fertilizers and use of pesticides, which by 2013 should be extended to 16 % of the agricultural land used. The production should be in line with technological requirements prescribed in rules for integrated farming and apiculture.

First and foremost organic farming is an important measure of agrarian environmental protection since it helps to retain and improve quality of soil, reduce water pollution and emissions to the atmosphere, secure the stability of the eco-system and biodiversity. On the other hand, this way of farming helps to cherish the old-school environment-friendly farming traditions, retain the authentic agrarian landscape.

The second priority (Mitigation of climate change) will be described in the Section 3.9.

The third priority (Preservation of biodiversity and development of high nature value and traditional agrarian areas) is set in order to ensure that appropriate farming methods and forest management practices within areas rich in biodiversity are being applied. Thus, the actions under this priority are targeted at encouraging farmers and forest owners within Natura 2000 network to apply such practices which would secure the existing values. In most cases farming and forestry systems which favour natural values are not always profitable for the farmers and forest owners because the price that the consumer pays does not include the environmental added value. Thus, the EAFRD funds are used to pay the farmer for these environmental "products" which improve the status of protected fauna and flora as well the condition of natural and semi natural habitats.

On the other hand, there are areas where economic activities are not being maintained to the required level and threaten the existing values or could be likely abandoned in the future if appropriate measures are not implemented, and therefore there is a need to implement actions encouraging people living in those areas to perform appropriate economic activities, in the meantime ensuring they are compatible with environmental values. For this purpose Natura 2000 measure, as well as support for those farming in Less Favoured Areas serve.

The aim of the ***Support for Natura 2000 territories*** measure is to support management of the established Natura 2000 network in Lithuania, designated under the Habitats and Birds directives. The support concerns payments as compensation in relation to reduced production possibilities. The support can be related to both open agricultural nature types and forest

habitats. On agricultural land restrictions can concern grazing pressure, use of pesticides, time of grazing or ploughing etc. For forest areas are concerns among other postponement of cutting, prevention of clear cutting or removing of weakened or dead trees. More details on support in forest habitats are given is section 3.2.

The measure gives support to the mentioned EU regulations but also the Water Framework Directives and the Convention on Biodiversity.

Throughout all Natura 2000 network there is unified requirement stemming from Law on Environmental Impact Assessment and Art. 6.3 of Habitats Directive 92/43/EEC and preventing negative interventions in the sites: "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives".

Within Natura 2000 network currently there are almost 54,000 ha of agricultural land where restrictions on actual farming practices are set. As regards forestry, there are almost 521,000 ha of forests in which forest managements practices are restricted in order to ensure protection of species or habitats, private forests in which restrictions influence their owners actual incomes make almost 90,000 ha.

The aim of *the* ***Support for farming in LFA*** measure is to secure farming in less favoured areas where compensation on income foregone and additional cost is needed to secure agricultural practice. The measure is helping to secure preservation of extensively used farming areas and thereby securing landscapes and biodiversity values. Provision of support in LFA areas is closely related to the cross compliance requirements, which require those participating in this scheme to maintain good agricultural and environmental conditions of the land under support, and therefore is expected to benefit the environment significantly.

The Ministry of Agriculture puts intensive efforts in preparing the documents for the administration of the European Union support for rural development for the period of 2007-2013. One of the key points in the process is consultations with economic-social partners which interests in the matter often varies; thus it is prerequisite to seek the compromise which would be more or less acceptable for all parties involved and which would facilitate achievement of the set objectives.

The Ministry of Agriculture, while coordinating and preparing the Strategy and the Programme, follows the principle of partnership, i.e. consults social and economic partners and takes into account the proposals of the working groups. During the first public discussion that took place on 18 November 2005, social and economic partners as well as representatives from other institutions were asked to provide comments and proposals regarding the draft Strategy and the draft Programme. All remarks were discussed in the meetings of the management of the Ministry and of the working groups. It should be noted, that compromises, acceptable to the widest possible range of potential applicants were sought during the process of decision-making.

210 people participated in the first public hearing and in the second public hearing held on 12 September 2006 seventy people were present. Continuous bilateral meetings with social-

economic partners were organised in which problems and needs of particular sectors have been discussed. The Programme has been especially intensively coordinated with the Ministry of Environment of the Republic of Lithuania. As a result of the Ministry's observations new measure *Forest Environmental payments* was included, according to which payments in Natura 2000 programme territories will be made both for land and forest areas. An agreement has also been reached regarding afforestation payments, provision of support for Objective II as well as support for forests', environment and landscape improvement measures.

Also, in 2006 Ministry of Agriculture funded a study carried out by Lithuanian Ornithological Society on assessment of Žuvintas reserve and other bird habitats under agri-environment measure. The study comprised impact of main agricultural activities on protected bird species in agrarian landscape, effect of intensification of agriculture on abundance and distribution of birds, EU experiences in implementation of agri-environment programmes favourable for birds in recommendations regarding new agri-environment measures and management prescriptions for Natura 2000 territories in Lithuania.

In conclusion, Lithuanian of Agriculture is doing a lot for integration of Nature conservation and biodiversity issues into its policies, but it is not yet sufficient for efficient protection of rare animal and plant species yet. The current agri-environment measures make a good basis, but in order to take maximum effect they need to have good level of uptake.

3.3. Fisheries

The Lithuanian fisheries is a sector related with the management, protection and restocking of fish resources, fishing, aquaculture, fish processing and marketing, first sale and buying of fishery products.

The Lithuanian fisheries sector is administrated by the Ministry of Agriculture and its authorized institution – the Fisheries Department under the Ministry, also the Ministry of Environment. According to the **Law on Fisheries of the Republic of Lithuania** of 22 of June 2000 (Official Gazette No 56 – 1648, 2000, No 73-2527), the state functions on the regulation of fisheries are performed by the following institutions, depending on their competence:
1) Ministry of Agriculture - the functions with regard to development of the policy of the fisheries sector, state regulation of this sector, implementation of the European Union (hereinafter – EU) Common Fishery Policy (hereinafter – CFP), also protection of fish resources and their control in the seas;
2) Ministry of the Environment - the functions with regards to development of the policy for protection and control of fish resources in the inland waters, monitoring over the compliance with the fishing regulations in the inland water deposits.

The Fisheries Department is responsible for the implementation of tasks assigned by the Ministry of Agriculture, i.e. implementation of the rational fisheries policy, integrated regional and structural policy in the fisheries sector (together with other governmental institutions), preparation of legal acts necessary for the development of the fisheries sector, etc. The Environment Protection Agency under the Ministry of Environment is responsible for the administration of river basins and their parts located on the territory of the Republic of Lithuania, seeking the attainment of water protection goals, also coordinates the process of environmental impact assessment, when planning to build embankments, hydroelectric power

stations, set up ponds, clean lakes, as well as makes decisions due to the admissibility of the planed economical activity from the impact on the environment viewpoint. Regional Environmental Protection Departments of the Ministry of Environment issue permits for the integrated pollution prevention and control to the fisheries pond farms, also issue permits for commercial fishing in the inland waters and control the compliance with legal requirements on the fishing. The applied biological fisheries research is carried out by the Fisheries Research Laboratory of the Lithuanian State Pisciculture and Fisheries Research Centre, Vilnius University scientists, Institute of Ecology of Vilnius University, Klaipėda University. The Fisheries Research Laboratory of the LSPFRC regularly monitors and investigates the status of fish resources in the Baltic Sea. The Laboratory of Marine Ecology of the Institute of Ecology of Vilnius University monitors and investigates fish resources in the Curonian Lagoon, Kaunas water reservoir and in other inland waters.

Although products of the Lithuanian fisheries sector constitute for a very small share of Gross Domestic Product (less than 1%), nevertheless the fisheries sector is very important in Lithuania.

Export of fish, crustacean, molluscs and other water invertebrates and fishery products accounts for approximately 1.5% of total export and for approximately 1% of total import. Fish and fishery products account for 14.5% of export and 15.2% of import in the structure of export and import of food products.

4 main branches of the fisheries sector are developed in the country:

- Marine fishery (fishing in the high seas, in the Baltic Sea and in the coastal zone of the Baltic Sea).
- Inland waters fishery
- Aquaculture.
- Fish processing industry and marketing.

Great changes of the Baltic Sea ecosystem are going on from the middle of XX century. These changes are impacted by climate changes, eutrofication and spread of new alien species. For some species changes of ecosystem becomes more favourable for other contrarily. At present due to very intensive fishery, lack of North Sea water inflows, which is more salted, oxygen saturated, Baltic Sea water becomes inconvenient for cod populations existence. Decrease of biomass of main predators (cod population) positively affects abundance of sprat population.

Lithuania's exclusive economic zone interacts with the waters belonging to other states and the overcapacity of fishing fleet in the Baltic Sea generally has negative impact not only on cod stocks but also on macrozoobenthos communities, which are negatively affected by bottom trawling. Lithuania matched fishing capacities with cod resources partially and there is a possible reduce of cod resources and quotas respectively so the problem of matching fishing capacities with cod resources remains. Lost nets (ghost nets) become also have negative impact on the fish resources, because their even without human help catch fish.

5 fish species are most catchable in the Baltic Sea:

- Cod is the species of greatest market demand and the largest source of income to the fishers. According to ICES the Western and Eastern cod stocks biomass are at a very low level and therefore, stocks are considered to be below the safe biological limits. Due to this

reason the multi-annual management plan for cod have been approved by Comunnity. According to multi-annual management plan for cod fishing efforts and the Baltic cod quotas can be reduced by 10-15 % year by year. Thus, the level of catches of cod is unstable and there are the measures foreseen in order to reduce the fishing capacities (scrapping and reassignment of vessels) in the Baltic Sea.

- The most important population of herring for Lithuania is the Central Baltic. Herring is the most common fish species in the Baltic Sea. According to the ICES, the Central Baltic herring stock is being exploited in a sustainable manner.
- Sprat which resources the ICES classify as having full reproductive capacity.
- Flatfish which resources in the Baltic Sea are stable.
- Salmon fishing does not play an important role for Lithuanian fishing sector in recent years. Fishermen catch only about 5 – 15 % of all salmon quota assigned to Lithuania but considering that cod fishing quota assigned to Lithuania decreases year to year, it can be expected increase in utilization of salmon fishing quota. Wild salmon in the Gulf of Finland which is also taken in the Main Basin where Lithuania has its quota is poor. For the main basin, ICES advices indicates for some rivers very low condition without signs of improvement. Although quotas are not fully taken current harvest rate is high and in combination with the low at-sea survival, spawning populations are estimated to be low. ICES has advised substantial reductions in catches and effort. In any case every year, in an attempt to increase the salmon population, Lithuania, Latvia, Poland and other States

additionally rear this valuable species in their national rivers and eastern section of the Baltic Sea.

The total area of the Lithuanian inland waters covers 2621 sq. km, i.e. 4% of the territory of the country. There are 2827 lakes with an area over 0.5 ha (87359 ha), 1589 ponds (24434 ha) and 733 rivers longer than 10 km (32601 ha).

The main inland water areas used for fishing in Lithuania are the Curonian Lagoon, Kaunas Water Reservoir, rivers and lakes (over 0,5 ha in size). Lower reaches of the Nemunas River are very important in comparison to other rivers. Lithuania has rather clean inland water bodies and sufficiently developed fish breeding infrastructure. Most inland waters bodies hold the status of protected areas, they are potential Natura 2000 sites; protected species of birds, amphibian and reptiles breed in them and they are the areas in which most of protectable mammals feed themselves.

Roach, bream, smelt, pikeperch and perch prevail in the commercial catches in the Curonian Lagoon**.** During the last several years the fish resources in the Curonian Lagoon have been exploited quite intensively. Therefore, fishing quotas in respect of tradable fish species (bream, pikeperch, and smelt), restrictions in terms of different fishing tools and seasonal fishing bans have been introduced.

Bream, roach and perch prevail in the commercial catches in the Kaunas water reservoir. Most species have been recently exploited rather intensively, in particular bream. Therefore, limitations have been introduced in the Kaunas water reservoir as to the quantity of bream to be caught, as well as to the usage of fishing gear. Presently, it is not possible to increase the fishing intensity. Seeking to reduce fishing intensity in the Kaunas water reservoir, a limitation of a total catch of 160 tons was introduced in 2005.

Commercial fishing in the rivers is focused on fishing the most valuable fish species – smelt and eel. The catches of these commercial fish are constant; however, their increase is not predicted in the future.

The fish resources in the lakes are being exploited rather irrationally. The commercial fishing is recommended to be developed mostly in the big lakes where the commercial fishing has been developing since old time.

Negative effect on the status of fish in the inland waters is done by excessively intensive fishing and non-selective fishing methods. The resources of migratory fish suffer from obstacles in spawning grounds and migration routes. Also, the protection of fish resources and fishing control is insufficiently effective.

One of the main environmental problems is the protection of biological fish diversity. Passing, semi-passing and stenobiontic fish are in particular sensitive to the changes in the natural permanent hydro systems caused by the human activity. Since due to the construction of dams in Lithuania approximately 70 per cent spawning sites of potential katadromic fish species disappeared, that was one of the reasons due to which the resources of this species dramatically decreased and some fish species had to be included in the Red Book of Lithuania because of the catastrophic situation of their resources (although 11 protected fish species are still getting in the commercial fishing gear), thus their protection requires to promote use of selective fishing gear and methods allowing to avoid by-catches of such fish species in the areas important for their protection, to stop or restrict commercial fishing in some areas and (or) in certain periods of time, and if said measures are ineffective, commercial fishing should be reassigned to other activity.

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The aquaculture ponds cover an area of 10500 ha. They are capable of farming about 5500 tons of commercial fish per year. Presently, only 49% of the pond capacities are being utilized. In 2006, about 2 thousand tons of aquaculture products were farmed in the aquaculture ponds, 94% of which were carps. Organic farming has been rapidly developing in the aquaculture enterprises of the country.

Some inland water deposits and aquaculture ponds fall within the nature protection areas attributed to Natura 2000. More stringent environmental protection requirements are applicable in these areas; for example, fish feeding wild birds are protected in these territories, there are restrictions to clear the ponds out of the grass.

Areas important for the protection of birds in Natura 2000 sites have been designated in some ponds of aquaculture enterprises (Grybaulia fishing ponds, Birvėta biosphere polygon, Vasaknai biosphere polygon, Visbarai biosphere polygon). This is a good example showing how aquaculture can positively impact on the protection of birds. It is in particular important to support intensification of environmentally-friendly production in such enterprises in which bird protection is directly dependent upon the products of the cultivated fish (for example, protection of the concentrations of white-tailed eagles in the area of Grybaulia fisheries ponds).

In order to avoid killing of the water birds in fishing nets, it is prohibited to construct on the sea coast fishing nets, whose porosity is 55 mm or more, from 16 November to 15 April, at such depth where the distance from the surface of the water to the upper edge of the net is less

than 15 m. However, this measure does not enable to remove all the adverse consequences for the birds. Besides, the seacoast is important for the conservation of the protected fish species (amongst them those of Community importance). Too intensive fishing and/or non-selective fishing methods may have negative consequences on the resources of salmon, sea-trout, twaite shad, European whitefish, halibut, vimba.

Therefore supporting coastal fishing should be subject to the cessation of the activity of the part of the fishing vessels for good and all and to the use of more selective fishing methods (for example, driftnets) in order to reduce the incidental by-catches of water birds and protected fish.

However, water pollution from aquaculture enterprises, installation of new aquaculture ponds whilst damming rivers and/or changing the hydrological regime, use of water bodies important for the protection of habitats for aquaculture purposes, which results in fluctuations of water levels, may have a negative effect on the types of the natural freshwater habitats and water flora and fauna habitats of Community interest protected in Natura 2000 sites. Therefore modernization projects for aquaculture enterprises likely to have a significant effect on Natura 2000 sites must be subject to appropriate assessment of its implications for the said sites, and supported will be only the projects which will have no significant negative effect on the protected species and habitats priority being given to the projects which would help protect the environment, improve its quality and preserve the nature.

The abundance of the cormorants in aquaculture enterprises may be regulated only in accordance with the procedure established in the Rules for Hunting on the territory of the Republic of Lithuania. At the same time it is necessary to support the searching and application of other, more effective, measures for the regulation of the abundance of this species.

Areas important for the protection of the birds of the European ecological network Natura 2000 and areas potentially important for the protection of the habitats host the entire Curonian Lagoon. Part of the Curonian Lagoon hosted by the Regional Park of the Nemunas Delta is the site likely to become important for the protection of the habitats (LTSIU0013) and birds (LTSLUB001). Nature habitats (1130, river mouths; 1150, lagoons), a habitat of sea lampreys and chekhon, places of gathering of migrating geese, ducks and other water birds are protected here.

Part of the Curonian Lagoon hosted by the National Park of the Curonian Lagoon is a site likely to become important for the protection of the habitats (LTNER0005) and birds (LTKLAB001). A nature habitat (1150, lagoons) and places of gathering of migrating and wintering water birds are protected here. The remaining part of the Curonian Lagoon is likely to become a site important for the protection of the habitats (LTSIU0012). A nature habitat (1150, lagoons) and the habitat of twaite shad and chekhon are protected here. Also the northern part of the Curonian Lagoon stretching from the port of Klaipėda to the line of Juodkrantė - Dreverna has been proposed by scientists as a potential site important for the protection of the gathering of migrating and wintering birds. In 2007, a designation procedure for a special protected Natura 2000 site – biosphere polygon – was started.

Plans to install fishing quays have to be subject to the exclusion of bed excavation works in the habitats of chekhon and twaite shad from 20 April to 15 July.

Possible additional fishing restrictions in the Curonian Lagoon relate to the protection of water birds from their getting into the landing nets in the places of their gatherings during their migration and wintering.

Main restrictions to the activities necessary in order to avoid adverse consequences for the protected values in Natura 2000 sites within national protected areas have been established by individual provisions, protection regulations of the protected areas and Special land and forest use conditions. Following the procedure established by the Order No D1-255 adopted by the Minister of Environment on 22 May 2006 „On the approval of the description of the procedure for the determination of the significance of the impact of plans, programmes and planned economic activity on the designated or potential Natura 2000 sites" (*Official Gazette*, 2006, No 61-2214), while making the conclusion regarding the potential significance of the impact caused on the area by the economic activity planned to be carried out on Natura 2000 site or adjacent to it environment or while carrying out procedures for the strategic assessment of the consequences of the plans or programmes for the environment or procedures for the assessment of the planned economic activity on the environment, the activity in such areas may be subject to additional conditions allowing to avoid adverse impact on the protected values or reducing it to an insignificant level.

The main measure to establish whether the planned economic activity is permissible and what are the conditions in which it may be carried out in the potential Natura 2000 sites, which are not hosted by the national protected areas and in which the activity is not regulated, is the determination of the significance of the impact of the plans, programmes and planned economic activity on Natura 2000 sites designated or to be designated (Order No D1-255 adopted by the Minister of the Environment on 22 May 2006), and in case of a risk of a significant effect – procedures for the strategic assessment of the impacts on the environment (Resolution No 967 adopted by the Government of the Republic of Lithuania on 18 August 2004) or procedure for the assessment of the impact on the environment (Law on the assessment of the impact of the planned economic activity on the environment).

While establishing measures removing or alleviating the impact on biological diversity in Natura 2000 sites, account is taken of the general requirements of the provisions for the areas important for the protection of the habitats or birds, adapting them to the scope and character of the activity and to the conditions and specific features of the area. Key restrictions or encouragements of the activity relating to the implementation of the objectives of the Programme of Actions necessary in order to avoid negative consequences on the environment or mitigate them to the minor level are provided for in Chapter 4 describing the environmental problems relating to the implementation of the priorities in Natura 2000 areas and Annexes 2 and 3.

Therefore, one of the most important instruments establishing measures necessary to avoid, reduce or compensate potential significant adverse effects of implementing the Programme of Actions on the environment (in particular on the biological diversity) is a system for the strategic assessment of the consequences of the plans and programmes on the environment and of the impact of the planned economic activity on the environment which, in accordance with the provisions of paragraph 3 of Article 6 of the Habitats Directive, is used for all the plans, programmes and projects of the economic activity likely to have significant adverse impact on

the sites of Natura 2000.

Besides said requirements for the protection of the habitats and species, fishing in the Baltic Sea must be regulated so, as to avoid adverse impact also on the resources of other fish species (including those of Community interest) which are protected or taken care of (salmon, bull-trout, vimba, and asp). At present, the biggest adverse impact on the protected species of fish and water birds in the Curonian Lagoon is caused by an over intensive fishing and (or) non-selective fishing methods.

Reduction of intensity of the commercial fishing aiming at protecting biological diversity is also relevant in the site of Natura 2000 – Kaunas Lagoon; an over intensive fishing here may adversely affect the protection of asps and other valuable fish. Rather intensive fishing on lakes Dusia, Meteliai and Obelija may, first of all, adversely impact such globally endangered species of water birds protected in this Natura 2000 site, as ferruginous duck and concentrations of other migrating birds.

Besides, pursuant to the General provisions for the areas important for the protection of the habitats and birds (Official Gazette, 2004, No 41-1355), fishing in inland water bodies should be discouraged or significantly restricted nearly in all types of freshwater habitats of European importance, thereby encouraging local fishers to reassign to other activities outside fishing. Commercial fishing should be also prohibited in the habitats of Aldrovanda vesiculosa, Najas flexilis, pond tortoises (*Emys orbicularis*); and fishing using landing nets or fish-traps not equipped with special measures intended to protect otters must be prohibited in otters' (*Lutra lutra*) habitats.

All these issues are taken into consideration in developing Lithuanian fisheries sector with the aid of EU funds.

During the period of 2004–2006, the Lithuanian fisheries sector was supported from the Financial Instrument for Fisheries Guidance (hereinafter – the FIFG) and national budget of the Republic of Lithuania. According to the Lithuania Single Programming Document for the 2004–2006 (hereinafter – the SPD), approved by the Resolution No 935 of Government of the Republic of Lithuania of 2 August 2004 (Official Gazette No 123-4486, 2004) and European Commission decision No C(2004)2120, more than 59 million Lt (17,09 milion EUR) of structural assistance was planned to be allocated to the Lithuanian fisheries sector (41.837 million Lt (12,12 million EUR) from the FIFG and 17.509 million Lt (5,07 million EUR) from the national budget of the Republic of Lithuania). Under the area of activity of the measure "Protection and development of aquatic resources, fisheries, fishing port facilities, fish processing, marketing and inland fishing" the support, among others, was provided for the projects in the following measures: Protection and development of aquatic resources, Aquaculture and inland Fishing.

Operational Programme of the Lithuanian Fisheries Sector for 2007-2013 is a document defining the measures to be financed from the European Fisheries Fund (hereinafter – EFF) and national budget during the period of 2007 – 2013 in order to solve essential problems of the Lithuanian fisheries sector by promoting development of the sector and enhancing its competitiveness, ensuring economic, environmental and social sustainability, protection and restocking of the fish resources. Operational Programme is drawn up by the authorities of

Lithuanian Republic and approved by the European Commission decision.

The Operational Programme has been prepared following the provisions of Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund, Commission Regulation (EC) No 498/2007 laying down detailed rules for the implementation of Council Regulation (EC) No 1198/2006 on the European Fisheries Fund and the National Strategic Plan for the Lithuanian Fisheries Sector for 2007-2013 adopted by the Resolution No 654 of Government of the Republic of Lithuania of 19 June 2007 (Official Gazette No 76-3014, 2007) (hereinafter – National Strategic Plan). Operational Programme covers the entire territory of Republic of Lithuania, with the exception for the fourth priority axis 4 "Sustainable development of the fisheries areas" which will be implemented in the areas defined in the description of the priority axis.

The following priority directions and objectives have been set out in the Operational Programme:
Priority axis 1 "Measures for the adaptation of the fishing fleet"
Priority axis 2 "Aquaculture, inland fishing, processing and marketing of fishery and aquaculture products"
Priority axis 3 "Measures of common interest"
Priority axis 4 "Sustainable development of the fisheries areas"
Priority axis 5 "Technical assistance".

Measures under Priority axis 1 "Measures for the adaptation of the fishing fleet" contain, among others, :

- ***Permanent cessation of fishing activities of fishing vessels***, that will help to match the fishing capacities with the existing fish resources; and
- ***Temporary cessation of fishing activities***. Frequently, seeking to protect and ensure the restocking of fish resources, to protect the public health or in the event of a natural disaster, closures of fisheries decided by Member State or other exceptional occurrence which is not the result of resources conservation measure, the fishing activity may be ceased temporarily. In such cases, seeking to mitigate the negative social and economic consequences of temporary cessation of fishing activity, fishing enterprises will be reimbursed for their losses

According to the priority axis 2 "Aquaculture, inland fishing, processing and marketing of fishery and aquaculture products", three following measures will be implemented:

- Aquaculture.
- Inland fishing.
- Fish processing and marketing.

Aquaculture ponds were constructed 30 - 40 or more years ago. Obsolete and inefficient technologies are used in them. Therefore, attempts will be made to modernize the aquaculture farms, to introduce progressive technologies, by using support from the EFF. Besides, efforts will be put to apply the new aquaculture production methods helping to protect and improve the environment.

The main part of the support designated for the measure „Inland fisheries" is expected to target the establishment and modernisation of inland fishing infrastructure, in addition to the

compensation for fishermen in case of temporary cessation in a case when the measures for the recovery of species occurring in inland waters are provided for in a Community legal act. At current moment compensations are possible only when the national eel management plan has been adopted according Council Regulation No 1100/2007 establishing measures for the recovery of the stock of European eel.

Attempts will be made to reduce harm done by fish feeding wild birds, especially recently increasing population of cormorants, to fish resources.

Specific submeasures concerning biodiversity protection are:

- ***Aqua-environmental measures*** under the measure of Aquaculture. These are compensations for the use of aquaculture production methods helping to protect and improve the environment and to conserve nature. The beneficiaries must commit themselves for a minimum of five years to aqua – environmental requirements which go beyond the mere application of normal good aquaculture practise. This activity covers measures to promote organic aquaculture, sustainable aquaculture compatible with specific environmental constrains resulting from the designation of NATURA 2000 areas, participation in the Community's eco - management and audit scheme, forms of aquaculture comprising protection and enhancement of the environment, natural resources, genetic diversity and management of the landscape, as it is indicated in Article 30 of Regulation (EC) No 1198/2006. Support seeking to promote sustainable aquaculture compatible with specific environmental constrains resulting from the designation of NATURA 2000 areas should be restricted to maximum of two years subsequent to the date of the decision establishing the NATURA 2000 areas and only for aquaculture units existing prior to that decision. For the promotion of aquaculture forms comprising protection and enhancement of the environment, natural resources, genetic diversity and management of the landscape and traditional features of aquaculture zones, the environmental benefits of such commitments should be demonstrated by prior assessment conducted by designated competent bodies.
- ***Temporary cessation of fishing activities*** under the measure of Inland fishing. support for the temporary cessation in the inland waters is possible only in cases when measures for the recovery of species occurring in the inland waters are provided for in a Community legal act. In the case of temporary cessation all fishing activities have to be stopped. In regard to the compensations for the temporary cessation related to the measures for the recovery of species occurring in inland waters are provided for in a Community legal act. Currently compensations are possible only when the national eel management plan has been adopted according to the Council Regulation No 1100/2007 establishing measures for the recovery of the stock of European eel.

According to the priority axis 3, four measures will be implemented:

- Fishing ports, landing sites and shelters
- Collective actions.
- Measures intended to protect and develop aquatic fauna and flora.
- Pilot projects.

Seeking to restock the resources of salmon and other valuable fish species in the Lithuanian inland waters, investments into the rehabilitation of inland waters, including spawning grounds and migration routes for these fish species will be supported.

Presently there is no complex system of applied scientific research that would cover all parts of Lithuanian fisheries structure. In order to enhance successful development of the fisheries sector, viability of the economic subjects and ensure competitiveness, as well as to promote progress in the protection and rational exploitation of fish resources, applied scientific research must be directly promoted, as well as cooperation between scientists and operators of the fisheries sector must be induced.

Support according to the ***Measures intended to protect and develop aquatic fauna and flora*** is measure will be provided to investments into the contraction or installation of static or movable facilities intended to protect and develop aquatic resources, rehabilitation of inland waters, including the building and rehabilitation of spawning grounds and migration routes. Support will be provided for direct restocking if it is explicitly foreseen as a conservation measure by a Community legal act. In regard to the restocking of eel resources, the support will be granted only when the national eel management plan will be adopted. Priority for granting support according to this measure shall be given to projects which will be implemented in the Nemunas lower reaches and Curonian Lagoon, and projects related to protected in EU member states and Lithuania and vanishing fish and lamprey species which are subject of commercial fishing.

Priority axis 2 „ Aquaculture, inland fishing, processing and marketing of fishery and aquaculture products“ the goal to modernize aquaculture farms will be matched with the opportunities to strengthen the protection of the environment and biological diversity. Therefore implementation of this goal, taking account of environmental requirements mostly laid down by the EU Water Framework Directive 2000/60/EC (WFD), Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora and Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds will have a direct favourable impact on the natural environment thus the implementation of the Operational Programme is necessary.

Objective of priority axis 3 „Measures of collective interest “to create favourable conditions for the natural reproduction of fish resources, migration and spawning will have a positive impact on the natural environment.

Reassignment of fishing vessels to other activities outside fishing should be aided first of all. In the process of upgrading the vessels and fishing gear, support priorities should be granted to the implementation of more selective fishing methods in order to reduce incidental by-catches of fish and water birds; preservation and improvement of the quality of the environment.

Supporting of the small scale fisheries and tourism infrastructure, of the services useful for small fisheries communities, of the protection of the environment of coastal fishing areas in order to maintain their attractiveness, of the renewal and development of hamlets and settlements involved in fisheries activities and of the protection and strengthening of the heritage of nature and architecture will have a direct positive impact on the landscape and biological diversity of the coastal fishing areas.

Strategic environmental impact assessment was carried out for the operational Programme. There were only few tangible recommendations given by the SEA experts. All of those recommendations were taken into account after consultations and the Operational Programme

was amended accordingly.

According to the 3rd measure of the priority axis 3 "Measures intended to protect and develop aquatic fauna and flora" it is decided to set priority on separate protected fish species in order to create appropriate conditions for natural reproduction of fish resources, migration and spawning. Providing assistance according to the 2nd measure of the priority axis 2 „Aquaculture" the following enterprises of aquaculture will be regarded as supplementary priority, in which all or part of ponds are included in the important territories Natura 2000 for the protection of birds. In order to reduce the catch of undesirable fish and birds, as well as create suitable conditions for the protection and improvement of environmental quality, according to the 3rd measure of the priority axis 1 „Modernisation of fish vessels" and the 2nd measure of the priority axis 2 „Fishing in inland waters" it is planned to provide assistance to the projects, related to the modernisation of vessels and fishing gear, when it is aimed to reach larger selectivity for the application of fishing methods, and reduce the catch of undesirable protected fish.

The National Strategic Plan of the Lithuanian Fisheries Sector for 2007–2013 was approved by Lithuanian Government on 19 June 2007. Its general objective is the development of the fisheries sector and increase of its competitiveness, ensuring economical, environmental and social sustainability, protection and restoration of fish resources. It targets four main branches of the Lithuanian fisheries sector: marine fishery (in the high seas, in the Baltic Sea and in the coastal zone of the Baltic Sea), inland fishery, Aquaculture and fish processing industry.

For the purpose of ensuring the development of the Lithuanian fisheries sector, the National Strategic Plan highlight the necessity to allocate the increased attention to a rational exploitation of fish resources, improvement of the environment quality, improvement of conditions for the development of micro and small enterprises, promotion of lifelong learning. Seeking to match the existing fishing capacities with the available fish resources, some inefficient fishing enterprises will be encouraged to withdraw from the fishing business.

In general, the Strategic Plan has similar objectives and measure to the ones of the Operational Programme.

Tendencies of survival of environmentally valuable areas and animal species, as well as the prospects of the sustainable development of the fisheries depend upon the timely and sound implementation of the objectives of these strategic documents which had been set out. Failure to implement them would result in the worsening of the condition of the environment in the inland waters. If these objectives are not implemented, there would remain: recatching of fish resources alongside with persistence of and environmental problems; outdated vessels polluting the environment; tendencies causing threat to the biological diversity due to the exploitation of conventional fishing methods not always considering the by-catch of the rare and protected animal (fish and birds) species, etc.

3.4 . Forestry

Forests represent one of the major Lithuanian natural resources serving for the welfare of the state and its inhabitants, preserving the stability of the landscape and environment quality.

Despite the forest ownership form, forest, primarily, is the national property that shall be preserved for the future generations at the same meeting the ecological, economic and social needs of the society. Being a source of supply with timber and other forest products, forest is the essential factor of the ecological balance providing living places for numerous animal and plant species, stopping the soil erosion, absorbing the carbon dioxide and purifying the air, protecting the ground and the surface waters, providing opportunities for recreation of the urban and rural people. Forest plays an important role in biodiversity preservation as well tourism development.

The total forestland area accounts for 30,2 pct. (2005) of the total country's area. The total timber volume accumulated in the forests of the country reaches 388 mill. m^3. Average forest area per capita is 0,6 ha. The area of mature stands as well as the area of growing stock volume is increasing. These indicators grow due to enlarging area of forests and decrease of the population. As regards forest age, middle-aged forest dominate (42,5 pct) followed by young stands (24,5 pct), mature (19 pct) and premature stands (14 pct). Coniferous stands make 58,9 pct., followed by soft- broadleaves, which make 36,3 pct. and hard-broadleaves comprising 4,8 pct.

Substantial forest areas are designated for forest ecosystems, soil and water protection, recreation and for other ecological and social functions. The forests of strict reserves, special-purpose and protective forests make more then 29 pct. of the total forestland area of the country.

The Natura 2000 network is the principal mechanism for preserving biodiversity in Lithuania, as part of the European Community. Economic activities in Natura 2000 areas are being regulated differently from site to site. Different composition of habitats and species of Community interest in Natura 2000 areas requires site-specific restrictions. This is implemented through a selection of the type of protected area to be established there and which fits best in a particular situation (e.g. nature reserve, biosphere polygon, or different zones within the state parks, etc.),. Lithuanian Law on Protected Areas envisages rather wide range of types of protected areas in the country. This Law does not restrict the choice of the type of a protected area when establishing Natura 2000 area.

In case of nature reserves, state parks (and their zones) and buffer zones of strict nature reserves forestry activities are regulated by the Law on Forests. This Law envisages the attribution of forests area to a particular forest group (I, II, II or IV) taking into account its importance for the protective purposes. Detailed rules on the assignment of forests to forest groups are laid down in the Governmental Resolution No 1171 on 26 September 2001. Detailed rules for various felling types according different forest groups are laid down by series of orders of the Minister of Environment (No 669, 670 on 19 December 2003, No D1-406 on 1 September 2006, No D1-204 on 11 April 2007, etc). Individual statutes approved by the Minister of Environment additionally regulate forestry activities in biosphere polygons.

Baseline of environmental restrictions on forestry activities in protected areas differs depending from the type of protected area. This baseline is set in following legal acts:
1**) Law on Protected Areas** (Art. 7, 9, 11, 13, 15, 17, 19, 20),
2) **Law on Forests** (Art. 3),
3) **Statutes of individual protected areas** approved by the Government or Minister of

Environment.
Depending on the type of protected area as well as on species and habitats to be protected different combinations of restrictions for ongoing forestry practice from most common 4 have been set:
1) final forest cutting operations shall be forbidden or postponed;
2) final forest cutting operations shall be carried out in non-clear cutting way;
3) additional number of living trees shall be preserved and left in clear cutting areas;
4) sanitary felling is restricted, e.g. drying trees or dead wood shall be preserved.

Total area of Natura 2000 network in Lithuania constitutes 783000 Ha. In this network forests cover 491000 ha, or 25 % of the total forest area in the country. The usual forestry practices are restricted in approximately 91500 ha of forests belonging to in Natura 2000 network. In other forest area, which forms Natura 2000 network, usual forestry practices have not been affected by protection regime (legal acts) of particular protected areas, until it is not necessary for the protection of species or habitats of Community interest. Since about 53,5 pct of the Natural 2000 sites have been designated within the forests thus it is of utmost importance to ensure that proper and sustainable forest management practices are being implemented both in private and state forests. This applies both to the silvicultural as well as forest harvesting methods.

Currently 32,8 pct of total forest land area is private forests, 49,3 pct – state forests and 17,9 pct are state forests reserved for restitution. Total number of private forest holdings in Lithuania is about 150 thousand, average area of private forest holding – 4,6 ha and forest holdings up to 5 ha make 50 pct. of the number of all private forest holdings. Such small-scale forestry is a result of restitution process, which is still ongoing. It is expected that private forests will make 40 – 45 pct of the total forest areas after completion of the reform. The state forests are managed by 42 state forest enterprises and national parks. State forests of national parks were handed over to the responsibility of State Forest Enterprises from April of 2004.

Only about 15 pct of forest owners have passed special training courses aiming at increasing their abilities and knowledge to perform sustainable forest management, about 2 per cent of forest owners are professional foresters. Of course, some private forests are being managed by professional forest owners' cooperatives or private companies engaged in forest management or state forest enterprises based on the contractual agreements. However, the biggest part of the forest owners in fact does lack forest management knowledge and experience. In addition, there is a need to promote such forest management activities in private forests that would increase the ecological and recreational value of private forests as in most cases the new forest owners focus their activities only aiming at economic benefits, i.e. generating income in the short run. One of the ways to increase the forest economic value in the long run is to promote and encourage the pre commercial thinning in the young stands, which as a result turn into higher economic value in the future. Today, due to the fact that this type of activity is costly and will only pay back in some 50 years, the forest owners are unwilling to implement it. There is a need yearly to perform commercial thinning in the areas of about 5 – 6 thous. of ha of private young stands.

The Lithuanian forestry policy is formed following the Constitution of the Republic of Lithuania and other legal acts, and also the Convention on the Conservation of European Wildlife and Natural Habitat, signed in 1979 in Bern, the Biodiversity Convention signed in Rio de Janeiro in 1992, and Forest Protection Principles adopted at the United Nations

conference “Environment and Development”, the Strasbourg 1990, Helsinki 1993, and Lisbon 1998 resolutions of the Ministerial Conferences on Protection of Forests in Europe , the principles of the European Union forestry strategies, European Union directives on forestry and environment protection issues.

Main priorities for the future development of state and private forest sectors are stipulated in the **Lithuanian Forestry Policy and its Implementation Strategy** adopted in 2002. This policy was developed and is implemented in four directions: general, environmental and social.

Environmental policy of Lithuanian forestry includes ensuring sustainability of forest ecosystems and preservation of biodiversity and improvement of forest health.

Ensuring sustainability of forest ecosystems will be achieved through:.

- Preparation of the scientifically-based normative proposals for the co-ordination of economic and social issues during the establishment of protected areas, revising the existing boundaries and establishing a related economic regime in these forests;
- Inventory of natural and semi-natural forests (based on FAO classification), a more exact clarification of their protection regime and establishment of new protected territories primarily at the most valuable natural object habitats;
- Restoration of the ecological value of degraded forest ecosystems;.

Preservation of biodiversity and improvement of forest health will be achieved through:

- Improvement of register and protection of rare and endangered plant and animal species and their habitats;
- Reforestation and forest planting upon the ecological-genetic basis, planting more of mixed plantations, hard deciduous, combining afforestation with the natural regeneration, paying a special attention to the formation of sustainable forest edges;
- Increase of the assortment of forest nurseries' production seeking to ensure the stability of the planted forests and preservation of the biodiversity;
- Identifying valuable basic forest populations in each forest natural region, preservation of their natural species and genetic structure, rational use of their genetic resources for the reproduction;
- Improvement of the unified forest fire-emergency and sanitary forest protection systems on the national level taking into consideration the abundance of small-sized private forest holdings;
- Reduce of chemical forest protection means and their replacement with biological and mechanical means;
- A rational use of the game animal resources with the purpose of balancing their numbers in populations, reduction of their damage for forests, and other requirements.

The main private forestry, the importance of which is growing, development strategic objectives are divided into short term and long-term strategic goals. The short-term forestry development objectives are: Completion of the land (forest) reform; Implementation of compensation system for the forest owners for their losses due to restrictions of forest management activities in the areas under protection; Implementation of measures on prevention of illegal cutting, timber trade and employment; Creation of legal and economic preconditions promoting associations and cooperation of the forest owners; Further

development of forestry extension; Creation of legal and economic preconditions for merging small size forest holdings through land consolidation projects.

The long-term main strategic objectives of Lithuanian forest policy in relation to private forestry are: strengthening the sustainable forest management and maintaining the economic viability of the forestry sector; establishment of new forests on private land and implementation of afforestation programme which foresees to increase forest cover by 3 pct during next 20 years; broader integration of private forestry development into general rural development programmes coordinating activities with rural self-governing institutions.

According to Lithuanian Forestry and its Implementation Strategy, approved by the Minister of Environment of the Republic of Lithuania Order of September 17, 2002, No. 484, state and private forestry development in the context of common rural development, either increasing Lithuanian forest coverage by 3 percent in next 20 years are designated as the most important strategic goals of forestry development. Concrete volumes of newly afforestated areas for the period up to 2020 and all related measures are estimated in Aforestation Programme approved by the joint Minister of Environment and Minister of Agriculture Order of December 2, 2002, No. 616/471. It is planned during the period of 2007-2020 to afforestate 7000 hectares of new forests every year in abandoned state and private owned land using European Union finance support. In order to create favourable terms for increasing of Lithuanian forest coverage and to ensure the supply of forest reproductive material for reforestation after felling and for afforestation of new forest areas there was approved State Forest Nurseries Modernization Programme for the period of 2004-2013 by the Minister of Environment Order of August 26, 2003, No. 434.

The Lithuanian Forestry Policy and its Implementation Strategy outlines that the aim is to increase the forest cover in the coming 20 years with 3 pct. In order to fulfil this objective the Lithuanian Forest Increase Programme for 2003-2020 was approved in November 2002. The aim of the programme is to foresee the forest cover increase tendencies and volume in Lithuania taking into consideration the factors influencing the process, forest structure and its territorial distribution as well as accumulated experience in Lithuania and other countries.
The biggest areas have so far been afforested by State forest enterprises (in 2003 – 1,113 ha) whereas the afforestation by private landowners still is not at a satisfactory level. The reason therefore is that private landowners are still examining all the opportunities ahead of them in terms of engagement and possible income coming with the support from EU. Afforestation is the decision, which has no backward action, and since once afforested land becomes forest forever. The real support for afforestation has emerged only in 2005 through implementation of the Rural Development Plan for 2004 – 2006 and could be regarded as a new opportunity for land use. Therefore, the landowners are just now seeing the real benefits of turning their land, especially the one not suitable for agricultural purposes, into forests.

State land survey institute is responsible for the preparation of land use plans for afforestation. These plans are approved by regional municipalities. Up to 2007 45 land use plans for afforestation have been developed and are being used as key documents in issuing permits for afforestation, the remaining 6 will be prepared by the end of 2007. The criteria for designating areas suitable for afforestation have been revised in order to ensure that forests are established in those areas where it is of utmost importance from an economical, ecological and social point of view. Thus, criteria ensuring the protection of biodiversity, soil, ground and surface waters,

cultural heritage and 30 landscape values are being taken into consideration in addition to the soil fertility factor, which used to be the main deciding factor for designation of such areas.

According to the Forest Law of the Republic of Lithuania and other legal acts regulating forestry activities every forest owner must follow such usual forest management practice:
- final clear cutting of mature forest stands in Forest Group III and IV is allowed only if the permission is given and this clear cutting is designed in the forest management plan;
- the clear-cut area shall be reforested within three years after their origin;
- the area of final clear-cut plot is limited up to 8 ha in Forest Group IV and up to 5 ha in Forest Group III.

Usually the clear-cut plots in private forests in Lithuania are smaller and reach 1-2 ha in average. Accordingly about 7 thousand ha of forests are clear-cut out in private forests every year. The volume of such forest cutting is allowed by the legal acts and this is a usual forest management practice in Lithuania. However in order to preserve biological and landscape diversity, to promote natural reforestation with local species of trees and to reduce soil erosion and other adverse effects on forest ecosystems, it is necessary to support non-clear cuttings of forests on voluntary carried out by private forest owners, instead of clear cutting allowed by the legal acts.

This support is foreseen in the **Rural Development Programme for the period 2006 – 2013,** in the ***AXIS II - Improving the environment and the countryside.***

. It comprises three measures:

- **Support for afforestation.** The aim of the measure is to increase forest area to support the general objectives described but also reduce unemployment, and secure diversification in rural areas. It can further benefit specific forest species, improve conservation of ground water sources, and target prevention of climate change. Eligibility concerns among other the selected tree species for planting, where indigenous species are dominating the list.
- **Support for restoration of damaged forests and for increase of ecological and recreational value of forest land.** The aim of the measure follows the general description. Specifically under this measure are supported activities improving the biological and recreational value and to restore forest areas after storm eller fire incidents.
- **Forest agri - environmental payments.** The aim of the measure is to support additional environmental targeted activities beyond basic forest practice according to national legislation. The aim is especially to prevent clear cutting and conserve forest part of key interest from a biodiversity point of view.

Generally the aim of the 3 measures under this priority concerns expanding the forest area of Lithuania in accordance with national priorities and targets. (Including 3 % increase by the year 2020). It aims also at improving ecological conditions of abandoned land, increase the productive, recreational and biological value of forest areas, and secure more sustainable forestry.

Afforestation measure bears compensatory character and is implemented to promote afforestation of agricultural land as alternative land use, to decrease dependency on agricultural

activities. It is expected to also significantly contribute to the target set in the National Afforestation programme to increase the forest cover by 3 pct in the coming 20 years. This will improve ecological and environmental conditions in the country and ensure cost-effective use of wasted and low-value land and reach forest cover level of the country close to that of other Baltic countries. In order to ensure that afforestation takes place in the environmentally friendly manner and doesn't bring any harm to natural values, a throughout land use planning for afforestation was carried out. State land survey institute is responsible for the preparation of land use plans for afforestation. These plans are approved by regional municipalities. Up to now more than 50 land use plans for afforestation have been developed and are being used as key documents in issuing permits for afforestation.. During this process the territories suitable for afforestation taking into consideration environmental (biodiversity, water quality, soil quality and sensitivity to erosion, landscape, etc.), economic and social aspects are being designated and support will be given to those falling within these designated territories. Furthermore, in order to ensure that afforestation as much as possible benefit the biodiversity and environment in general as well as ensure the sustainable forest management, the currently implemented practices, such as establishment of mixed stands with broadleaves dominating whenever appropriate, establishment of forest edges, planting of local species, formation of open areas will be given a special attention during the implementation.

According to Lithuanian Forestry and its Implementation Strategy, approved by the Minister of Environment of the Republic of Lithuania Order of September 17, 2002, No. 484, state and private forestry development in the context of common rural development, either increasing Lithuanian forest coverage by 3 percent in next 20 years are designated as the most important strategic goals of forestry development. Concrete volumes of newly afforestated areas for the period up to 2020 and all related measures are estimated in Afforestation Programme approved by the joint Minister of Environment and Minister of Agriculture Order of December 2, 2002, No. 616/471.It is planned during the period of 2007-2020 to afforestate 7000 hectares of new forests every year in abandoned state and private owned land using European Union finance support. In order to create favourable terms for increasing of Lithuanian forest coverage and to ensure the supply of forest reproductive material for reforestation after felling and for afforestation of new forest areas there was approved State Forest Nurseries Modernization Programme for the period of 2004-2013 by the Minister of Environment Order of August 26, 2003, No. 434.

Forest agri-environmental payments measure implements the Forestry Strategy of the European Union (1999/C 56/01) an the EU Forest Action Plan adopted on 15 June 2006 where it is intended to promote schemes for forest owners to engage in voluntary environmental commitments and to promote enhancing of ecological value of forests.
Preservation of the biodiversity in the Lithuanian forests is one of the aims stated in the Lithuanian Forestry and its Implementation Strategy approved on 17 September 2002 by Order No 484 of the Minister of Environment of the Republic of Lithuania.

This measure is intended to make a better contribution to preservation of more natural forest environment, raising of awareness among forest owners by providing financial support for forest owners' initiatives to take environmental commitments not stipulated in the legal acts. Private forest owners are able to engage in forestry activity that is more acceptable from the environmental point of view, that will contribute to preservation the woodland key habitats and raising environmental awareness of forest owners at the same time, and also maintaining high

quality biodiversity in forest habitats. This measure creates conditions for development of more environmentally-friendly forestry activities and at the same time preservation of especially valuable WKH in private mature forests. Its objectives are to preserve WKH in private forests and to encourage the scale of non-clear forest cutting systems in private forests.

Forest environment payments are allocated for each hectare of private forests to owners who voluntarily take a commitment not to carry final forests cutting in WKH identified within their areas or carry out non-clear cutting in any other forests instead of clear cutting allowed by the legal acts. Due to such obligations forest owners lose income that is to be compensated.

In Natura 2000 areas, sustainable forest management is being supported through ***Support for Natura 2000 territories*** measure, which was developed support management of the established Natura 2000 network in Lithuania, designated under the Habitats and Birds directives. For it to be successfully applied in forests as well, it is intended to support private forest owners to help them tackle the issues that arise in the process of compliance with the Natura 2000 requirements in forests. Forest use restrictions imposed on Natura 2000 territories improve the conservation status of rare and endangered animals and plants, natural and semi-natural habitats, however tend to reduce the income of forest owners or demand higher operating costs.

Although these RDP measures are very positive, the challenge is the implementation and financing of sustainable forest management countrywide. To guide the overall implementation of sustainable forest management, national forest programmes/policies are important tools and co-operation with other stakeholders that have relevant information and experiences, including environmental NGOs, and exchange of experiences hereon would be of high value. Hence, national forest programmes could cover the many aspects of sustainable forest management including, among others, human resource development, biodiversity, criteria and indicators, environmental friendly practices, information systems, financing strategies and afforestation and land-use policies.

However, to promote implementation of sustainable forest management and efficiency in private forestry, there is also a need to have sufficient organisational structures and a well functioning network of owners. The exchange of information, i.e. through extension services, is of importance and highly relevant for co-operation and lessons learned. In addition, monitoring and exchange of experiences with criteria and indicators should follow the implementation of sustainable forest management.

3.5. Transport

Lithuania, even compared with economically stronger states, has a fairly well-developed road network. There are 6.32 km of roads per 1,000 of population in Lithuania and 326.50 km of state roads per 1,000 sq. km of its territory. The majority of our roads (62.01%) have asphalt pavement.

There are 6 European motorways crossing the country:
E67 Via Baltica: Helsinki–Tallinn–Riga–Panevezys–Kaunas–Warsaw–Wroclaw–Prague,
E28: Berlin–Gdansk–Kaliningrad–Marijampole–Prienai–Vilnius–Minsk,
E77: Pskov–Riga–Siauliai–Kaliningrad–Warsaw–Krakow–Budapest,

E85: Klaipeda–Kaunas–Vilnius–Lida–Cernovcy–Bucharest–Alexandroupoli,
E262: Kaunas–Utena–Daugavpils–Rezekne–Ostrov,
E272: Klaipeda–Palanga–Siauliai–Panevezys–Vilnius.

It is important to preserve, maintain and develop it so that it is smoothly included into the European network. One of the main stimulus to develop the road network in the country is that Lithuania is a transit country with a number of roads crossing it from west to east and from north to south.

While improving the road network there are a number of roads to be reconstructed so that they would meet the requirements of the people and transport as well as all modern technical, economic and environment requirements, were fast, convenient and safe. It remains one of major concerns for the road engineers in Lithuania for the present and nearest future.
Development and maintenance of transport system has multiply effects on biodiversity. Direct environmental impact includes habitat loss, barrier effect, ecological function of the roadsides, changes of hydrological regime, and construction works effect (erosion, disturbing hydrological regime, water pollution, traps). Habitat loss is often accompanied by a number of indirect impacts, such as noise, artificial lighting and increased human presence, that can be felt much further then the territory effected directly. Barrier effect is the biggest negative road impact on animals. The road acts as a barrier for animals if it is on the migration route and i the animals try to cross it they van be killed. The barrier is both physical and psychological, since animals often try to avoid places with traffic and human migration, as well as big open spaces.

Small animals that live in prolonged habitats such as rivers are very susceptible to barriers, because they migrate constantly. Barriers in such habitats most often let animal go though only in one direction, that can lead to extinction of isolated part of the population. Many invertebrate species, like molluscs and leeches have very limited possibilities for expansion. Even small road with minimum traffic can become an isolating barrier for them.

Roadsides can have both positive and negative environmental effects. They can facilitate animal migration and create new habitats, but they also facilitate spreading of unwanted plant and animal species. Bridges enable foxes to visit isolated colonies of birds. Changes in hydrological regime include changes in chemical and physical characteristics, increased eutrophication, changes in water level fluctuation and ground water levels.

Indirect impacts include noise, artificial lighting, increase human presence and spreading of alien species. Road lighting rarely composes n obstacle for large animal species and predators, because they are able to adapt to it. But most insects are attracted by light onto the roads and meet danger. Intensive noise can also become an obstacle for animal migration and increases barrier effect of the roads.

The Lithuanian Road Administration under the Ministry of Transport and Communications of the Republic of Lithuania is an enterprise founded by the Government of the Republic of Lithuania which is in charge of organizing and co-ordinating the reconstruction, maintenance and development of the roads of national significance.
The main law concerning transport in Lithuania is **Law on the Basics of Transportation Activity** (1991, new edition in 2006). It has s short chapter on environmental requirements, but more specifically mentions only noise, pollution levels and dangerous freight.

Long-term (till 2025) Strategy of Lithuanian Transport System (approved on June 23,2005 by The Lithuanian Government Decision No. 692) was prepared as the need to review Lithuanian Transport and Transit Development Strategy (prepared in 2002 as part of **Lithuanian Long-term Economy development Strategy till 2015**) arose. The Strategy envisages coordinated development and modernization of all kinds of transport infrastructure, reaching standards of old EU member states.

The environmental section of this Strategy does not mention biodiversity specifically, but describes general issues, such as minimizing negative impacts of transport on environment, pollution and noise levels, using alternative and less polluting fuels, and improving environmental measures.

However, protection of biodiversity in transport sector in integrated though environmental impact assessment of planned economic activities, identifying Natura 2000 territories and planning of construction.

Building of motorways or railways, construction of airports or seaports and similar activities are listed in the annexes of to the **Law on the Environmental Impact Assessment of Planned Economic Activities**. Environmental impact assessment included mandatory assessment of the planned economic activity on biodiversity. The aims of the environmental impact assessment are to identify, describe and assess possible direct and indirect negative impact of the planned economic activity and to determine whether planned economic activity is allowed in the chosen territory.

When environmental impact assessment of planned economic activities is not obligatory, but construction, reconstruction of exploitation of the objects would have impacts on environment, also when measures provided by EIA report have to be described in greater detail and accuracy, construction plan shall include environmental section. This section has to include assessment of present state of environment, impact on the environment of the planned economic activity and measures minimizing this impact.

When the planned economic activity is not listed in the annexes of this Law, but its implementation shall be related to existing of potential Natura 2000 territories and their immediate environment, it is obligatory to establish significance of planned economic activity on Natura 2000 territories. The main objective of this assessment of the plans and programmes of the economic activities is to find out whether conservation status of species and natural habitats in the existing or potential Natura 2000 territories shall not become worse, will the territory's integrity be damaged or not by implementation of the plaeed economic activity. However, this assessment mainly concerns protected species and habitats, but not biodiversity as a whole.

Practical examples of concrete measures implemented range from recommendations to demolish bridges in separate cases to road fencing and tunnels for wildlife. Until the end of 2008, 335 kilometres of roads of state importance were fenced, 9 tunnels for large animals and 11 tunnels for small animals were built. In 2009 these numbers should increase, and more diverse measures shall be implemented (horizontal barriers, jumping ramps etc). Most of the measures were built on A1 motorway between Vilnius and Kaunas and A2 motorway.

Currently a new document "Recommendations of planning, implementation and maintenance of environmental measures. Protection of Biodiversity" of is being prepared by order of the Lithuanian Road Administration. This document will facilitate implementation of biodiversity related measures in transport sector in Lithuania.

3.6. Tourism

Growth of GDP influenced by tourism has relatively lower negative impact on the environment compared with other economy sectors. Lithuania's mild climate, natural landscape, high potential for recreational resources, sufficiently rich nature and cultural heritage, an ethnocultural peculiarity create favourable preconditions for tourism development, employment and income increases. Tourism encourages the protection and nurturance of valuable natural and cultural environment and helps to solve social, economic and nature protection problems in less developed regions. However, uncontrolled and unorganized tourism poses a serious threat to the natural and cultural environment, increases anthropogenic loads on sensitive and unprepared natural territories. Insufficient legal regulation of tourism business and use of recreational resources may pose a threat of too intensive an anthropogenic load on valuable natural territories and their consequent degradation. On the other hand, lack of comprehensively regulated use of recreational resources and norms for protection of these resources may be a risk for unsound prohibitions and limitations that could hamper recreation and, in particular, rural tourism development. Therefore, when planning tourism development, it is necessary to take into consideration valuable natural and cultural environment, solve social, economic and environmental issues of underdeveloped areas, reasonably use natural resources for recreational infrastructure and protect the natural uniqueness.

Richness and variety of nature enjoyed by separate regions accompanied by objects of natural heritage and relatively good road network contribute to the development of rural tourism. Rural tourism is getting more and more popular among city-dwellers. In such way rural tourism acts as a supportive business in rural areas able to yield around 30-40% of total income; it is also becoming an important trend of regional development in land plots of low fertility. The constantly growing popularity of rural tourism is evident during the last few years in Lithuania. There were 164.1 thousand visitors of rural farmsteads in 2003, while in 2004 this number increased to 196.6 thousands and reached 215 thousands in 2005.The majority of rural or countryside farmsteads are located in relatively natural landscapes. Their location is usually rather close to ecotourism objects. In some cases rural farmsteads may also be regarded as ecotourism objects and they provide ecotourism services, although in rather rare cases.

Forests, lakes, rivers, the Baltic Sea, interesting geo-morphological structures and aesthetic landscapes suitable for tourism make around one third of the total area of the country. General attendance of areas intended for tourism is estimated at more than 60 million people per annum. Lithuania has 5 national parks and 30 regional parks (8.5% of the total land area of the country) which enjoy most favourable conditions for tourism. Natural complex of the Lithuanian seaside has best available conditions for tourism in the whole Baltic Sea region. One third of woods is suitable both for recreation and hunting. The network of rivers and lakes can be applied for water tourism. 194 parks, 353 natural monuments and 130 reservoirs under the state protection can also be of educational tourism value. Those natural resources should not be only a subject to natural protection; they should serve as resources used for educational

tourism and recreation. Those resources are impeded from being used for tourism by the following factors: not readiness, shortage of recreation and accommodation basis or its non-compliance with the current hygienic requirements, lack of information, not readiness of local public authorities and the status of the so-called 'dependant'. The use of resources not prepared for visitors is harmful to their protection and lessens their attraction to tourists. Approximately 10 million Litas was invested into preparation of protected natural territories for visitors. This resulted in 120 cognitive trails 39 resting sites, more than 50 view sites, 11 visitor centres.

National and regional parks are most complex preserved territories. These parts of Lithuania are exceptionally rich in unique and attractive natural objects, and their high environmental quality has an exceptional status. The majority of state parks were established in 1992 and already have the infrastructure favourable for the development of ecotourism. The legal environment also favoured the development of ecotourism there. One of the tasks of the state parks, declared in the **Law on Protected Areas of Lithuanian Republic**, should be providing conditions for recreation and first of all for cognitive tourism. State parks comprise the biggest part of protected territories in Lithuania, and they are distributed so as to represent the variety of Lithuanian landscape. All these premises allow to state that territories of state parks are definitely most favourable areas for the development of ecotourism.

In state parks (protected territories) development of recreation and public tourism infrastructure is organised by administrations of these parks, based on planning documents and park regulations. During 2003–2006, there was a significant increase of planning documents, regulating tourism development in protected areas. Therefore, possibilities for developing tourism in protected areas are even more regulated and purposely oriented towards ecological (cognitive) and active recreational tourism. For these purposes, public infrastructure is established (cognitive trails, resting and view sites, information signs), private sector is oriented towards sustainable development of recreational services, priority is given to rural tourism. State parks' management plans defining environmental and activity priorities make legal basis for division of parks' territories into functional and management zones, that have different regime of use, defining possibilities for developing tourism and recreation in each place of the state park and development of system of infrastructure in the whole territory of the park.

Lithuanian Tourism Policy is reflected in:

- Law on Tourism of the Republic of Lithuania
- National Tourism Development Programme 2007-2013
- Long-Term Economic Development Strategy of Lithuania until 2015

The Law on Tourism (passed by the Parliament on the 19th March, 1998, new edition on April 1, 2003) establishes priorities and principles of tourism development, requirements to tourism services, competence of public administration related to tourism, terms of tourism resources utilisation. One of the principles established is rational and efficient use of tourism resources, which include natural resources. Rural tourism is defined as well.

The National Tourism Development Programme **2007-2013** (approved by the Government decision No. 944 on August 29, 2007) was prepared on the basis of Law on Tourism, National Long-Term Development Strategy, Master Plan of the Territory of the Republic of Lithuania, and Long-Term Economic Development Strategy of Lithuania until 2015. Its purpose is to

evaluate national tourism development trends and, taking into account national, regional and other strategic documents in the tourism sector, to identify priorities for the development of, and investment in tourism in Lithuania and develop measures for the implementation of these priorities.

Nature related tourism to some extent can be found among goals and objectives – support for development of rural tourism and other kinds of sight-seeing tourism.

Protected territories have the best opportunity to develop sightseeing (cultural, ecological) tourism; therefore, it is important to adapt the protected territories for the development of sightseeing tourism (to conduct feasibility studies, create the relevant infrastructure, provide information).The measures include developing and implementation of projects of walking and bicycle trails, visitor centres, camp sites in national and regional parks, with the aid of EU structural funds.

The EU structural assistance or the tourism sector was provided according to the Single Programming Document for 2004–2006 and Operational Programme for Promotion of Cohesion for 2007–2013.

Among supported measures, listed in the measure group "Promotion of incoming and local tourism by using natural resources and cultural heritage as well as by creating conditions more favourable to active recreation" of priority 1 "Local and urban development, preservation of cultural heritage and protection of nature and its adaptation to development of tourism "of the **Operational Programme for Promotion of Cohesion for 2007–2013 (Assistance to tourism)** is the measure "Development of infrastructure for ecological (cognitive) tourism, active recreation and health improvement".

Rural tourism is supported though the **Rural Development Programme** under ***Axis III: The quality of life in rural areas and diversification of the rural economy,*** Measure III.1.3. Encouragement of rural tourism activities.

Besides state and EU support, there are different projects related to revelopment of sustainable and ecological tourism. The most recent example is 2009 Leonardo da Vinci mobility project **"Professional competence raising for sustainable tourism destinations' and services' development" (PROSUTOUR).**, awarded in May of 2009. The project's goal is adoption of best EU practices in sustainable tourism, developing guidelines for all Lithuanian organisation involved in tourism development. The tasks are:

- to improve skills in planning sustainable tourism, and forming image;
- to gain knowledge about adaptation of special environmental territories and facilities for tourism purposes, involving local communities for increase of added value and social responsibility;
- to get familiar with best practice of heritage tourism in EU, responsible use of resources,;
- to promote information exchange, participation and leadership of all stakeholders to ensure consensus.
- to develop Sustainable tourism guidelines for Lithuanian organizations involved in tourism development.

3.7. Energy

In the last decade energy consumption efficiency has significantly increased, and quantities of pollutants emitted from energy production have been reduced by almost 3 times. The structure of the primary energy balance has improved – the part of energy resources (natural gas and nuclear energy) that have the least impact on the environment has increased. Input from local and renewable resources into energy production has increased by approximately 4 times. About 9% of energy is produced from renewable resources (mostly wood and its waste). Consumption of polluting fuel (sulphurous fuel oil and coal) has decreased.

The Law on Energy provides for an obligation to revise Lithuania's National Energy Strategy every five years. The first Strategy was approved by the Government of Lithuania in 1994. Five years later, on 5 October 1999, the Seimas (Parliament) approved the second National Energy Strategy, which was due for a further revision in 2004. However, the resolution of Lithuania to join the European Union and the related pre-accession processes required an approval of a revised Strategy two years earlier than anticipated. This was mainly to establish the exact dates for the final closure of both Ignalina Nuclear Power Plant reactors to meet European Union requirements. Decommissioning of such an important facility has a great influence on the energy sector of Lithuania, thus making it necessary to revise the entire Strategy for the period until 2020.

The National Energy Strategy was approved by Lithuanian Parliament on January 18, 2007. It was developed in line with the fundamental provisions established in the Law on Energy, stating that the long-term planning of the energy sector must be defined with regard to all sectors and general objectives (energy demand forecasts, electricity, heat supply, environmental protection etc.). The Strategy defines the main targets set by the State and directions for their implementation until 2025 by fully adjusting these targets and directions to growing state needs and the most recent international requirements, having regard to the aspects of efficiency, energy security, environmental and management improvement.The environmental requirement refer to climate change, Kyoto protocol, minimising pollution, and use of renewable recourses, without specifically mentioning biodiversity.

The scenarios for the potential energy sector development were designed, taking account of the general provisions of the energy policy and projections of the economic development in Lithuania, together with the lifetime of the main energy units, the country's international commitments, environmental requirements, available technologies and energy development trends throughout the world and particularly in the neighbouring countries.

However, this Strategy was approved without Strategic environmental impact assessment that is obligatory according to Lithuanian legislation.

3.8. Education and Information

Public information and environmental education is one of the key measures seeking to implement the goals of environmental protection and sustainable development. It is identified as such by the **National Strategy for Sustainable Development**, the **National Educational Programme 2007-2015 for Sustainable Development**, and other national strategic documents.

The goal of the Ministry of Environment is to seek public awareness, experience and skills required for the implementation of sustainable development objectives, also to seek the formation of the environmentally friendly way of life of the society and the improvement of the awareness on environmental protection issues so that the society becomes more actively involved in the decision-making and the implementation of decisions in the field of environmental protection.

The policy of provision of information on the environment to the society is developed in line with the following documents:

1. Directive 90/313/EEC on the freedom of access to information on the environment;
2. Convention on access to information, public participation in decision-making and access to justice in environmental matters (Aarhus Convention).

The above legal acts are based on the recognition of the fundamental right of every person to live in an environment adequate to his/her health and well-being, and the duty to protect and improve the environment. They also provide for the responsibility of the state to create the required conditions for the public to have access to information, to participate in the development of the environmental policy and decision-making in the field of environmental protection.

The system of legislative and organizational measures has been developed for the implementation of the provisions of the Directive and the Convention. The key measures are as follows:

- The procedure of provision of information on the environment to the society approved by Resolution No. 1175 of the Government of the Republic of Lithuania on 22 October 1999 (*Official Gazette*, No. 90-2660, 1999; No. 26-831, 2005);
- Digest of information on the environment available to public and municipal authorities.

Public Information and Public Relations Department of the Ministry of Environment provides continuous information to the society on the activities of the Ministry and burning issues and problems of the environmental sector, as well as presents the objects of this sector to mass media. For this purpose the Department issues press releases and organises press conferences. Information is provided on the website of the Ministry.

The Public Information Division of the Ministry of Environment functions as the Ministry's representative for information and provides telephone services and services to the interested persons. Information is provided according to the established procedure (Procedure of providing services to citizens and other persons approved by Order No. 624 of the Minister of Environment dated 6 December 2002).

Information provided to the society includes information on the implementation of measures for the preservation of the quality of the environment, natural resources, landscape and biodiversity, and issues such as territorial planning, housing and construction. Specialists from the Ministry provide consulting and continuously participate in various conferences and seminars, as well as projects carried out by other authorities. Environmental education and information form an integral part of environmental protection legislation.

Neither in the **Law on Education of the Republic of Lithuania** (adopted on 25 June 1991 No I-1489, as last amended on 4 July 2007 – No X-1266), nor in the **Law on Higher Education** (adopted on 21 March 2000 No.VIII-1586, last amended on 18 July 2006 ─ No X-769) mentions biodiversity or environment. **Law on Provision of Information to Public** (2 July 1996 No. I-1418, Revised version on 11 July 2006 – No X-752) mentions protection of the environment only in relation to advertisement and teleshopping. **The National Education Strategy for 2003-2012** (No. IX-1700, 4 July 2003) mentions environment in relation to the mission of education (to ensure balanced and knowledge-based development of the economy, environment and culture of this country, domestic and international competitiveness of the economy, national security and evolution of the democratic society, thus strengthening the creative powers of the society).

Although biodiversity is not mentioned in the main legislation concerning formal education system in Lithuania, it is being widely included in the informal education system though different national projects (such as "Nature near us"), environmental clubs and nature schools, lectures, seminars, conferences and other events. Since 1995, Vilnius Pedagogical University organises biannual national conference "Biological diversity in Lithuania: status, structure, ecology", which is a link between biological diversity research and ecological education in Lithuania.
Lithuanian schools also participate in international BSP and GLOBE projects, where pupils learn about environmental issues, also abut biodiversity and sustainable use of natural resources.

Education is an important component in all major projects related to biodiversity conservation. The general public is targeted though publications nature trails, information centres, special events and media, training courses are organized for the target groups.

3.9. Climate change

The adverse anthropogenic impact on the state of ecosystems becomes apparent not only through habitat degradation, land reclamation, development, cultivation of natural areas, direct displacement and destruction of species, deforestation and forest fragmentation but also through global climate change that has intensified in the past few decades. Global warming will lead to further degradation of ecosystems and habitats and extinction of existing and emergence of new species. Protected areas will lose a part of their properties. As the ranges of species change and shift northwards and north-eastwards, species will abandon protected areas due to altered conditions. All this will give rise to new threats in the protection of rare species. Many common measures for species protection and management used in environmental protection will lose their effectiveness. The impact on ecosystems will become apparent through their eutrophication, dehumidification, change of habitats, increased changes in natural succession and disruption of the balance of ecosystems. Research carried out in the recent years allows making the conclusion that global warming rather than the direct anthropogenic impact is likely to have a greater effect on northern species in Lithuania.

As traditional economic activities are terminated and effective nature management measures are not implemented, a threat to protected sites of biological diversity is likely to arise.
The impact from climate warming will be particularly strong on the seacoast of Lithuania. Lithuania's Baltic Sea coastline is 90.6 km in length. It comes under a strong anthropogenic

impact: the area has a large Klaipėda Seaport, several oil and other cargo terminals and the country's main resorts. A number of people who reside there engage in fishing and recreation activities. Scientists maintain that the level of the global ocean is rising due to climate warming. According to the projections, the level of water in the Baltic Sea at the coast of Lithuania may rise by 0.1–1 m in the 21st century. The current rise of the water level makes up about 5 mm per year. If the rate remains stable, at the end of the 21st century the coastline will begin to change in a threatening manner and a part of the coastal area will be flooded (not only the Baltic Sea coast but also the coast of the Curonian Lagoon). The rise of the water level will result in more frequent influxes of saline water into the Curonian Lagoon and in a progressive change of the ecosystem of its northern part. The increased frequency of hurricanes and storms will have an even greater impact on the Baltic Sea coast and the beaches, and coast management will demand new investment and innovation. In the event of failure to take pre-planned actions, the rise of the water level may cause serious social and economic problems.

The **National Strategy for the Implementation of the United Nations Framework Convention on Climate Change until 2012** was approved on January 23, 2008. The ministry of Environment is responsible for its co-ordination and implementation.
The Strategy describes the priorities and principles of the Convention and the Kyoto Protocol; summarizes the scientific information available on Lithuanian nature and economy; carries out strategic analysis of the country's economic, social and regional development; provides information on the Lithuanian climate variability and its projections within the context of global climate change; evaluates strengths, weaknesses, opportunities and threats in different economic sectors associated with problems of climate change; contains objectives and tasks for implementing the requirements of the Convention and the Kyoto Protocol in various sectors of the economy, and develops measures for the implementation of the Strategy, intended for different economic sectors and the fields of environmental protection, science and education.

SWOT analysis in this Strategy includes chapter on landscape, ecosystems and biodiversity. One of its objectives is to ensure the assessment of vulnerability of the landscape, ecosystems and biological diversity, and the planning of adaptation options, while the tasks for achieving these objectives are:

- to carry out the assessment of the landscape, ecosystems and biological diversity (also of protected areas) with a view of establishing the impact of climate change on various ecosystems and their parts.
- to ensure conservation of the landscape, ecosystems, protected areas and biological diversity by developing plans for climate change impact mitigation and by providing for specific adaptation measures.

The measures within the first task include assessment of the impact of climate change on the landscape, ecosystems and biological diversity and to develop adaptation measures; preparation of draft legislation that provides for the establishment of protected areas necessary for the implementation of the ecological network Natura 2000; preparation of projects on nature management in protected areas in accordance with the existing and projected impacts of climate change; preparation and approval of plan of measures for the protection and management of the Baltic Sea coast by providing for the most appropriate development of the coastal land use structure; and preparation and implementation of river renaturalisation projects with a view of ensuring the protection of the natural hydrographic network.

The second task includes measures such as preparation of a plan of measures for mitigating the impact of climate change on the karstic region and other sensitive areas; preparation and implementation of measures for wetland protection and management of closed and unused peat mines in accordance with the future impact of climate change; preparation of projects on the rehabilitation of unused landfills and abandoned quarries; and promoting the development of organic farms.

Another task in this Strategy is to promote the adaptation of the energy, industry, transport, agricultural and forestry sectors to climate change and to conserve and increase forest areas

Afforestation is an important measure in the context of climate change mitigation as forests play a big role for carbon sequestration and biomass production. In the Forestry Strategy of the European Union (1999/C 56/01) approved of December 15th, 1998 is stated that European forests can best accomplish function of carbon reserve accumulation by preserving present forests and afforestation of new areas.

The related measures in Lithuanian Strategy on climate change are implementation of measures of afforestation of unproductive land with a view of increasing Lithuania's forest coverage by 3–5 percent; preparation of projects on reforestation and afforestation on the environmental and genetic basis and to combine afforestation with spontaneous afforestation; promoting the development of nurseries with a view of ensuring quality and assortment of forest seedlings; preparation of recommendations on the choice of tree species for reforestation and afforestation with account of various environmental factors.

Climate change issues are mentioned also in the **Rural Development Programme for the period 2006 – 2013,** in the ***AXIS II - Improving the environment and the countryside.***
Priority II.2. of this Axis (Mitigation of climate change) is aiming at combating climate change through rational use of available land resources, in particular abandoned agricultural land not used for agriculture as well as sustainable forestry development. The measures are described in section 3.4.

3.10. Environmental impact assessment

Environmental impact assessment (hereinafter referred to as the EIA) shall be the process of the identification, description and assessment of the potential environmental impact of the planned economic activity; the principal goal of the EIA shall be to ensure that the competent authority (the Ministry of Environment, the Environmental Protection Agency and regional environmental protection departments) adopting the decision on the admissibility of the activity in the selected site has information about the potential significant environmental impact of that activity and opportunities to reduce this impact, and be familiar with the public opinion.

Beside the organiser of the planned economic activity (contracting authority) and the person preparing EIA documents, the EIA process also involves EIA entities (public authorities responsible for health care, fire protection, protection of cultural valuables, economic development and agricultural development, also local municipal authorities) and the society.

The EIA is performed in Lithuania since 1996 pursuant to the **Law on the Environmental**

Impact Assessment of Planned Economic Activities (*Official Gazette*, No. 82-1965, 1996, No. 84-3105, 2005) regulating the EIA process and mutual relations of the participants.
Annexes of this law contain two lists: the List of Types of Planned Economic Activities Subject to the Environmental Impact Assessment (Annex 1) and the List of Types of Planned Economic Activities Subject to Selection Related to the Mandatory Environmental Impact Assessment (Annex 2).

The environmental impact assessment shall be performed:
1) when the planned economic activity is entered into the List of Types of Planned Economic Activities Subject to the Environmental Impact Assessment;
2) when it is established during the selection process that the planned economic activity has to be subject to the environmental impact assessment;
3) when the implementation of the planned economic activity may have an impact on the areas of the European Ecological Network Natura 2000, and the authority in charge of the organization of the security and management of protected areas (the State Service for Protected Areas) establishes that such impact may be significant, following the procedure prescribed by the Ministry of Environment.

Principal goals of the selection of planned economic activities are to establish whether it is necessary to perform the environmental impact assessment of the specific planned economic activity, and to ensure that environmental aspects will be considered during further stages of the activity planning not only by applying technical measures reducing the impact but also by providing complex measures for the prevention of adverse impact.

The selection is performed by the competent authority with due consideration to information provided by the organizer of the planned economic activity about the site where the planned economic activity is intended to be carried out, and information describing the planned economic activity.

Another procedure of the environmental impact assessment is the preparation and approval of the programme. The scope of the EIA is established during this stage. The EIA programme (prepared according to the provisions set for the preparation of the EIA programme and report) shall be submitted to EIA entities for drawing conclusions. The EIA programme and the conclusions drawn by EIA entities are together submitted to the competent authority for approval. Having analysed the EIA programme and the conclusions drawn by EIA entities, the competent authority shall approve the programme. Based on the approved programme an EIA report is prepared, which shall provide a thorough analysis of the impact on the biota, measures to reduce or compensate the impact, and the alternatives. The prepared report is presented to EIA entities to receive conclusions on the opportunities of the planned economic activity, and to the public during the public hearing.

The EIA report and the conclusions of EIA entities as well as the reasoned assessment of the proposals of the public is presented to the competent authority for decision-making. Having received EIA documents, the competent authority must promptly issue the announcement on the website of the Ministry of Environment. Having analysed the EIA report, the conclusions of EIA entities and proposals of the public, the competent authority shall make a motivated decision whether the planned economic activity is admissible in the selected site with due consideration to its nature and environmental impact.

CHAPTER IV. CONCLUSIONS: PROGRESS TOWARDS THE 2010 TARGETS AND IMPLEMENTATION OF STRATEGIC PLAN

4.1. Progress towards achieving the biodiversity conservation targets until 2010

Key to indicator assessment of change over time:
↑ - Improving
↕ - Little or no overall change
↓ - Deteriorating
√ - Insufficient or no comparable data

Focal area: PROTECT THE COMPONENTS OF BIODIVERSITY			
Goal and targets	**Relevant CBD indicators**	**Progress assessment**	**Assessment of changes**
Goal 1. Promote the conservation of biological diversity of ecosystems, habitats and biomes			
Target 1.1: At least 10% of each of the world's ecological regions effectively conserved	- Coverage of protected areas; - Trends in extent of selected biomes, ecosystems and habitats; - Trends in abundance and distribution of selected species.	- 15,13% of Republic of Lithuania territory covered by the protected area system; - Special Protected Areas (SPA) covered 7%, Special Areas of Conservation (SAC) covered 9% (both SPA & SAC /Natura 2000/ 11% of Lithuanian territory; - 61,4% of territory is under protection of national geo-ecological network (Nature frame), which ensure sustainable development in the area.	↑
Target 1.2. Areas of particular importance to biodiversity protected	- Trends in extent of selected biomes, ecosystems and habitats; - Trends in abundance and distribution of selected species; - Coverage of protected areas.	- Priority EU habitats and species are identified and used in selection of Natura 2000 sites; - Lithuanian fauna and flora hasn't been assessed in totally; - Lack of monitoring data can not ensure estimation of trends in abundance and distribution of selected species and habitats.	↕
Goal 2. Promote the conservation of species diversity			
Target 2.1: Restore, maintain, or reduce the decline of populations	- Trends in abundance and distribution of	- Lithuanian fauna and flora hasn't been assessed in total; - 253 animal, 221 plant and	↕

of species of selected taxonomic groups	selected species; - Change in status of threatened species.	112 fungi species are protected; - Recovery plans prepared and under implementation of selected species (e.g. Capercaille *Tetrao urogallus*, Lynx *Lynx lynx*, Eagle owl *Bubo bubo*).	
Target 2.2: Status of threatened species improved	- Change in status of threatened species; - Trends in abundance and distribution of selected species; - Coverage of protected aras.	- 253 animal, 221 plant and 112 fungi species are protected; - Trends in abundance and distribution of selected species identified.	↕
Goal 3. Promote the conservation of genetic diversity			
Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained	- Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance; - Biodiversity used in food and medicine (indicator under development); - Trends in abundance and distribution of selected species.	- Over 8000 plant taxa specimens are collected in different Lithuanian botanical gardens, parks and research stations; - Plant gene bank established which houses more than 2280 specimens of Lithuanian plant seeds.	↑
Focal area: PROMOTE SUSTAINABLE USE			
Goal 4. Promote sustainable use and consumption			
Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity	- Area of forest, agricultural and aquaculture ecosystems under sustainable management; - Proportion of products derived from sustainable sources (indicator under development); - Trends in	- Biodiversity conservation issues are included in fish pond management plans; - Majority of state forest areas are certified by FSC; - Status of inland water bodies is identified.	↑

	abundance and distribution of selected species; - Marine trophic index; • Nitrogen deposition; • Water quality in aquatic ecosystems.		
Target 4.2. Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced	- Ecological footprint and related concepts	- Sustainable use of plant, fungi and animal species is ensured by amendment of legislation and issuing permits for collection and use, as well as through control over collection and use.	↑
Target 4.3: No species of wild flora or fauna endangered by international trade	- Change in status of threatened species	- EU legislation and CITES provisions are transposed to Lithuanian legislation; - Trade permit system and information management on trade are improved.	↑
Focal area: ADDRESS THREATS TO BIODIVERSITY			
Goal 5. Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced			
Target 5.1. Rate of loss and degradation of natural habitats decreased	- Trends in extent of selected biomes, ecosystems and habitats; - Trends in abundance and distribution of selected species; - Marine trophic index.	- Mapping of EU importance habitats is under preparation; - Loss of forest habitats is increasing.	↕
Goal 6. Control threats from invasive alien species			
Target 6.1. Pathways for major potential alien invasive species controlled.	- Trends in invasive alien species.	- National legislation on controlling of alien invasive species is amended, but regulation of pathways is needed to be improved.	↑
Target 6. 2. Management plans in place for major alien species that threaten ecosystems, habitats or species	- Trends in invasive alien species.	- Management plans for selected alien invasive species are under preparation.	↑
Goal 7. Address challenges to biodiversity from climate change, and pollution			

Target 7.1. Maintain and enhance resilience of the components of biodiversity to adapt to climate change.	- Connectivity / fragmentation of ecosystems.	- 61,4% of territory is under protection of national geo-ecological network (Nature frame), which ensure sustainable development in the area, but not comply with ecological network requirements.	↕
Target 7.2. Reduce pollution and its impacts on biodiversity.	- Nitrogen deposition - Water quality in aquatic ecosystems.	- Status of inland water bodies is identified; - River basin management plans are under preparation; - Lithuanian has reduced pollution loads and emissions, but more remains to be done.	↑
Focal point: MAINTAIN GOODS AND SERVICES FROM BIODIVERSITY TO SUPPORT HUMAN WELL-BEING			
Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods			
Target 8.1. Capacity of ecosystems to deliver goods and services maintained.	- Biodiversity used in food and medicine (indicator under development) - Water quality in aquatic ecosystems - Marine trophic index - Incidence of Human induced ecosystem failure	- Sustainable use of natural resources is ensured through issuing permits and controlling of using them; - Rural development programme (2007 – 2013) provides different measures for sustainable use of natural resources; - Majority of state forest areas are certified by FSC, but private sector is only in the beginning of the process; - System of environment impact assessment is implemented and use of natural resources is incorporated.	↑
Target 8.2. Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained	- Health and wellbeing of communities who depend directly on local ecosystem goods and services - Biodiversity used in food and medicine	- Lithuanian local communities are not depending directly on use of natural resources.	√

Focal point: PRESERVATION OF TRADITIONAL KNOWLEDGE, INNOVATION AND PRACTICES			
Goal 9 Maintain socio-cultural diversity of indigenous and local communities			
Target 9.1. Protect traditional knowledge, innovations and practices	- Status and trends of linguistic diversity and numbers of speakers of indigenous languages - Additional indicators to be developed	Local communities are able to demonstrate knowledge, innovations and practice in different ways, including education events, schools, etc. Relevant legislation is in place.	√
Target 9.2. Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit-sharing	- Indicators to be develop.		
ENSURE THE FAIR AND EQUITABLE SHARING OF BENEFITS ARISING OUT OF THE USE OF GENETIC RESOURCES			
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources			
Target 10.1. All access to genetic resources is in line with the Convention on Biological Diversity and its relevant provisions.	- Indicators to be develop.	Access to genetic resources is regulated by legislation. All the Convention and EU requirements are in transposed to Lithuanian legislation.	↑
Target 10.2. Benefits arising from the commercial and other utilization of genetic resources shared in a fair and equitable way with the countries providing such resources in line with the Convention on Biological Diversity and its relevant provisions.	- Indicators to be develop.	Benefits commercial use and other utilization of genetic resources could be shared according international and national legislation.	↑
Focal area: ENSURE PROVISION OF ADEQUATE RESOURCES			
Goal 11: Parties have improved financial, human, scientific, technical and technological			

capacity to implement the Convention			
Target 11.1. New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.	- Indicators to be developed.	- Lithuanian is under development procedures and legislation to provide financial and technological assistance to developing countries.	√
Target 11.2. Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.	- Indicators to be developed.		

4.2 Progress towards the Goals and Objectives of the Strategic Plan of the Convention

Strategic goals and objectives	Progress assessment
Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues	
1.1 The is setting the global biodiversity agenda.	Main provisions of the Convention have been transposed to appropriate Lithuanian legislation and National Biodiversity Conservation Strategy and Action Plan (NBCSAP, 1997). Recently NBCSAP and Law on Protected Animal, Plant and Fungi Species and Communities are going to be amended in accordance of new requirements of the Convention Decisions and EU requirements. Lithuania actively promotes the Convention in its international activities.
1.2. The convention is promoting cooperation between all relevant international instruments and progress to enhance policy coherence.	
1.3 Other international processes are actively supporting implementation of the Convention, in a manner consistent with their respective frameworks.	
1.4 The Cartagena Protocol on Biosafety is widely implemented.	Main provisions of the Cartagena Protocol on Biosefety are implemented and integrated into relevant sectors (more details in Chapter 3 of this report).
1.5. Biosefety concerns are being integrated into relevant sectoral or cross – sectoral plans, programmes and policies at regional and global levels	
1.6 Parties are collaborating at regional and subregional levels to implement the Convention	Lithuania collaborates within its region (EU, Nordic and Baltic State) as well as within biogeographic region.
Goal 2: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention	
2.1 All Parties have adequate capacity for implementation of priority actions in national biodiversity strategy and action plans	Lithuania has a institutional and human capacity to implement priority actions, meanwhile funding is not adequate to implement priority actions.
2.2. Developing country Parties, in particular the least developed and the small island developing States among them, and other Parties with economies in transition, have sufficient resources available to implement the three objectives of the Convention	Lithuania is going to provide financial aid to developing countries. First steps are made – Lithuania and Moldova elaborated agreement in the field of nature conservation.
2.3 Developing country Parties, in particular the least developed and small island developing States among them, and other Parties, with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosefety.	Lithuania is under preparation of implementation of the task.
2.4 All Parties have adequate capacity to implement the Cartagena Protocol on Biosefety.	Lithuania has adequate capacity to implement the Cartagena Protocol.
2.5 Technical and scientific cooperation is making a significant contribution to build	Technical and scientific cooperation is developed to achieve conservation and

capacity.	sustainable use objectives.
Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention	
3.1 Every Party has effective national strategies, plans and programmes in place to provide a national framework for implementing the three objectives of the Convention and to set clear national priorities.	Most of sectoral strategies, plans and programmes are in place to fulfill main requirements of the Convention requirements.
3.2 Every Party to the Cartagena Protocol on Biosafety has a regulatory framework in place and functioning to implement the Protocol.	It is regulatory framework in place and functioning to implement the Cartagena protocol.
3.3 Biodiversity concerns are being integrated into relevant national sectoral and cross – sectoral plans, programmes and policies.	Biodiversity concerns are integrated in Lithuanian sectoral and cross – sectoral legislation, policies, strategies, plans and programmes, but it needs to be improved. Please see Chapter 3 of this report.
3.4 The priorities in national biodiversity strategies and action plans are being actively implemented, as a means to achieve national implementation of the Convention, and as a significant contribution towards the global biodiversity agenda.	Please see Chapter 2 of this report for information of implementation of NBCSAP.
Goal 4: There is a better understanding of the importance of biodiversity and the Convention, and this has led to broader engagement across society in implementation	
4.1 All Parties are implementing a communication, education, and public awareness strategy and promoting public participation in support of the Convention.	National Educational Strategy (2007 – 2015) as well as legal acts promotes participation, raise public awareness in environmental protection. There are national and local education programmes targeting different audience. National and local NGOs are active in raising of public awareness.
4.2 Every Party to the Cartagena Protocol on Biosefety is promoting and facilitating public awareness, education and participation in support of the Protocol.	Biosefety issues are under agenda among general public. Governmental organisations and NGOs, especially, developed programmes to raise public awareness, but it is necessary to make more efforts in the biosefety issues.
4.3 Indigenous and local communities are effectively involved in implementation and in the process of the Convention, at national, regional and international levels.	Local communities are involved in implementation and in the process of the Convention through different national and local programmes.
4.4 Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross – sectoral plans,	Key actors and stakeholders (land owners, private sector, non – governmental organisations, general public) are engaged in partnership to implement the Convention through different programmes. Success of

programmes and policies	involvement varied by different groups and sectors.

4.3 Conclusions

Implementation of the Convention on Biological Diversity has been achieved through the National Biodiversity Conservation Strategy and Action Plan (1998), Programme on Biodiversity Conservation, Planning and Management of Protected Areas for the period 2007 – 2013, Law on Protected Animal, Plant and Fungi Species and Communities (1997 with amendments), Act on Protected Areas (2001) and other related legal acts and strategic documents. The legal basis for implementation of the Convention is in place, but in order to implement CoP Decisions and programmes it is necessary to amend the legislation, as well as the strategic plans and programmes.

The National Biodiversity Conservation Strategy and Action Plan (NBCSAP) is a rather comprehensive document and more or less covers the Convention on Biological Diversity Thematic Programmes and cross-cutting issues. However, as it was approved in 1998 and never updated since, it is not surprising that some measures are out-of-date and several CBD targets/measures or Thematic Programmes are not addressed at all. Although NBCSAP has been prepared for 20 year period and its revision was foreseen every 5 years, it urgently needs to be revised. The Programme on Biodiversity Conservation, Planning and Management of Protected Areas for the period 2007 – 2013 was adopted by the Minister of Environment and it is used mostly by the Ministry of Environment and its subordinate institutions. However, on a state level it cannot replace the outdated NBCSAP. Legal acts need to be amended in accordance with new CoP decisions, Strategic Plan and Plan on Work on Protected Areas.

In the field of in situ species conservation, some progress has been made, but on the state level this progress was not sufficient. Several projects on biodiversity conservation funded by PHARE, GEF, GEF Small Grant Programme–Lithuania, LIFE Nature and other EU Pre-accession funds etc. were carried out, and the results of these projects contribute to protect species and ecosystems in the country. Meanwhile some strategic issues are not implemented yet. In spite of attempts to establish a legally binding Species Register, it does not function in practice. It is not applied in EIA procedures and in land management, as well as in forestry development and management. However, some good examples can be found regarding in situ conservation. Forest protection in and outside protected areas, through the mediation of the woodland key–habitats principle can be regarded as one of the most successful examples of implementation of the protection of forest species and their habitats. This concept includes designation of small key habitats in forest management plans and protecting valuable areas through legal and voluntary settlements. Implementation of Rural Development Programmes (for the period 2004 – 2006 and period 2007 – 2013) can be regarded as a successful example of protection of agricultural and forest areas. Less successful examples were noted in management of species and habitats in protected areas, where the main focus during the reporting period was put on spatial planning and preparation of planning schemes, as well as management plans for Natura 2000 sites. Meanwhile practical management activities in protected areas were carried out in selected areas only.

One of the main obstacles to the implementation of the CBD is the lack of financial resources, since protection of biodiversity and sustainable use of natural resources is not a priority for the

Government (economical interests usually override conservation interest). Due to the lack of finance it is not clear when the new NBCSAP will be prepared. It should be also stated that the domestic budget for nature conservation constitutes a small percentage of the national budget and even with the EU funds, the domestic budget for nature conservation should be increased. A lack of political will has been obvious during the reporting period.

Lithuania has a few general strategic programmes that include the Master Plan of the Republic of Lithuania, the Lithuanian National Sustainable Development Strategy, the Long-term Development Strategy of the State, the Long-term Economic Development Strategy of Lithuania until 2015, the National Lisbon Strategy Implementation Programme, and the Programme of the Government of the Republic of Lithuania for 2008-2012. They state that factors of environmental protection will ensure a harmonious and sustainable development of Lithuania in line with the objectives of air, water and biological diversity programmes. The most specific of them all is the Government programme, having included preparation of biodiversity strategy and action plan, ensuring cross-sectoral coordination, integration of biodiversity into sectors of Lithuanian economy, promotion of better and faster implementation of international obligations in order to stop biodiversity loss etc. However, institutions responsible for implementation of these actions are mainly Ministries of Agriculture and Environment and in some cases Ministry of Transport. Even integration of biodiversity related issues into different sectors and preparation of new Biodiversity Strategy is to be implemented only by the three above ministries.

The Ministry of Environment and its agencies are responsible for implementation of the Convention of Biological Diversity in Lithuania. Other ministries are involved in implementation through different development sectors. Activities of the Convention cover a wide field of different development sectors. Lack of coordination between different sectors should be improved by strengthening of conservation issues in other ministries and their implementing agencies. In spite that Lithuania designated new protected areas, it is need to follow designation process in terms of EU requirements. It is necessary to prepare and adopt protected areas strategy and protected areas selection criteria, as well as to improve management of protected areas, especially in terms of involving more closely different stakeholders.

Lithuania will not meet 2010 biodiversity targets in the form that was adopted by the Convention. There are no nationally used targets and indicators and it is difficult to measure the biodiversity loss. But in general progress towards the global targets was made. Progress towards achieving the goals and objectives of the Strategic Plan of the Convention was more evident in comparison with the previous reporting period. There is remarkable progress in implementation of the Programme of Work on Protected Areas: in strengthening of institutional capacity, monitoring and planning. But involvement of stakeholders in the management of protected areas is still lacking. There are gaps in selection and establishment of protected areas, and governance is insufficient.

Priorities for the coming period are associated with sustainable development, climate change, integration of biodiversity issues into development sectors and close cooperation between different governmental organizations and NGOs, improving the management of protected areas, species conservation in situ, capacity building, increasing awareness both of the general public, and officials and politicians. Prioritization of biodiversity conservation issues and

revising the NBCSAP, adoption of protected areas management strategy would be an advantage in implementation of the Convention on Biological Diversity.

The final conclusion is that the implementation of the Convention on Biological Diversity has a positive impact on the status of biodiversity and management of protected areas. In comparison with the previous period, a significant progress has been made in conservation of biodiversity. However, implementation of the Convention on Biological Diversity in the field of protected areas designation and management, as well as species protection in situ should be improved.

APPENDIX I. INFORMATION CONCERNING THE REPORTING PARTY AND PREPARATION OF NATIONAL REPORT

A. Reporting Party

Contracting Party	Lithuania
NATIONAL FOCAL POINT	
Full name of the institution	Ministry of Environment of the Republic of Lithuania
Name and title of contact officer	Kristina Klovaitė Senior officer, Biodiversity Division Nature Protection Department
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CONTACT OFFICER FOR NATIONAL REPORT (IF DIFFERENT FROM ABOVE)	
Full name of the institution	
Name and title of contact officer	
Mailing address	
Telephone	
Fax	
E-mail	
SUBMISSION	
Signature of officer responsible for submitting national report	Dr. Aleksandras Spruogis Vice-minister
Date of submission	23-10-2009

B. Process of preparation of national report

The Fourth National Report on Progress of Implementation of the Convention on Biological Diversity was prepared in accordance with Article 28 of the Convention and Decision VIII/4 of the Conference of the Parties, on the basis of the guidelines provided by the first meeting of Working Group on Review of Implementation.

The Report has been prepared by the public institution "Gamtotvarkos projektai" under contract of Ministry of Environment of the Republic of Lithuania. Project team composed of dr. Pranas Mierauskas (team leader), Edmundas Greimas and Ruta Vaiciunaite, used information and data from the Ministry of Environment and its agencies, as well publications, reports and other documents from different organizations.

APPENDIX II. FURTHER SOURCES OF INFORMATION

Legislation

Law on Environment Protection, 1992 (amended)
Law on Protected Areas, 1993, amended 2001
Law on Protected Animal, Plant and Fungi Species and Communities, 1997
Law on Wild Animal, 1997 (amended)
Law on Wild Plant, 1999 (amended)
Law on Forests, 1994 (amended)
Law on Environment Monitoring, 1997 (amended)
Law on Environment Impact Assessment of Proposed Economic Activity, 1996, amended 2005

Strategic documents

Biodiversity Conservation Strategy and Action Plan, Ministry of Environmental Protection, Vilnius, 1998;
Environment Protection Strategy, Ministry of Environmental Protection, Vilnius, 1996;
Lithuanian Rural Development Programme (2007 – 2013), Ministry of Agriculture

Publications

Habitats of European Union Importance in Lithuania, Vilnius: Ministry of Environment, Institute of Botany, 2001
Important Bird Areas in Lithuania, Ed. R. Raudonikis, Lithuanian Ornithological Society, "Lutute" publ., 2004;
Lithuanian Breeding Bird Atlas, Lithuanian Ornithological Society, "Lutute" publ., 2006;
Protected Areas of Lithuania, State Protected Areas Service, "Lutute" publ., 2006;
Red Data Book of Lithuania, Ministry of Environment, "Lutute" publ., 2007;

Other information sources (websites):

Ministry of Environment: www.am.lt;
State Protected Areas Service: www.vstt.lt;
Environment Protection Agency: www.aaa.am.lt;
Directorate General of State Forests: www.gmu.lt;
Center of Marine Research: www.jtc.lt;
Ministry of Agriculture: www.zum.lt;
Parliament of Lithuania: www.lrs.lt;
Institute of Ecology: www.ekoi.lt;
Institute of Botany: www.botanika.lt;
Lithuanian Fund for Nature: www.glis.lt;
Lithuanian Ornithological Society: www.birdlife.lt;
Nature Heritage Fund: www.wetlands.lt;
Baltic Environment Forum: www.bef.lt;
Green movement club „Žvejonė": www.zvejone.lt;

APPENDIX III. PROGRESS TOWARDS TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONCERVATION AND PROGRAMME OF WORK ON PROTECTED AREAS

APP.III.1. PROGRESS TOWARDS TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION

In the NBCSAP there are only general provisions concerning the conservation of flora species and habitats. More provisions concerning habitats and species conservation are stipulated in the national legislation due to the implementation of the requirements of EU Habitats Directive (92/43/EEC).

In general we can say that Lithuania has not established national targets corresponding to global targets set in GSPC, but the majority of the global GSPC targets are incorporated into relevant plans, programmes and strategies. Below is shortly presented Lithuanian progress towards 16 targets of GSPC:

Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora.

The NBCSAP states to maintain diversity of species by developing a special programme for the conservation of relict, endemic, rare and declining taxa, and by establishing a legal basis for effective protection. During the last 20 years, 6 volumes of Lithuanian Flora have been published which describe 1300 species. The "Lithuanian Dendroflora" was published in 2003. A 3 volume monograph "Flora of the Baltic Countries" was published. The updated Lithuanian Red Data Book was published in 2007. The Lithuanian Red Data Book of Plant Communities was published in 2000. Books on the vegetation of some protected areas have been published. The Botany Institute issues a scientific journal „Botanica Lituanica". In 1990, a multi-volume publication "Mycota Lithuaniae" was started, which has resulted in publication of the 15 volumes. The book "Habitats of EU importance in Lithuania" was published in 2001. The book "Sand Dune Plants of the Curonian Spit" was published in 2001. The book "Sphagnum and Mosses of Lithuania" was published in 2003. The book "Lithuanian Parks" was published in 2004. The book "Lithuanian Mushrooms Atlas" was published in 2007. The book "Wetland ecosystems" was published in 2005. The book "Lithuanian Orchidaceae" was published in 2006. In 2006 were prepared and published recommendations for management of habitats of *Cyprepedium calceolus, Liparis loeseli, Pulsatilla patens, Saxifraga hirculus* and *Haematocaulis verniculosus.*

Lists of fungi, bryophytes, algae are not fully completed and every year a new species are identified. Leading taxonomic centres are Institute of Botany, Vilnius University, Institute of Forests, Vilnius Pedagogical University. Institute of Botany works on inventory of various habitats and species communities.

Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.

An assessment of conservation status of vascular plants, fungi, algae and lichens has been done during the compilation of the Red Data Books (1992, 2007). Six categories are used in the Red

Data Book of vascular plants, fungi, algae and lichens of Lithuania (0 - Extinct or probably extinct species; 1 - Endangered species; 2 - Vulnerable species; 3 - Rare species; 4 – Indeterminate, insufficiently studied species and 5 – Restored species).

The Lithuanian Red Data Book of Plant Communities published in 2000 (prepared by Institute of Botany). When compiling the Book, the syntaxonomic dependence of communities growing in Lithuania was determined and complete inventory of taxa was prepared. 5 categories are in the Lithuanian Red Data Book of Plant Communities: 0 – Extinct communities; 1 – Narrow distribution area; 2 – Rare communities; 3 – Rare and standard (typical) communities; 4 – Communities of undefined status. In order to conserve communities of Category 1, strict nature reserves are necessary for all habitats. Communities of Category 2 must be protected in optimal habitats, and when so needed, declared as protected areas. Communities of Category 3 are to be protected within the existing protected areas. For communities of Category 4, additional research should be undertaken. Most communities which need protection grow in water bodies, meadows and wetlands.

The Red data Book of Lithuania is managed by the red Data Book Commission under the Ministry of Environment. Each year this commission sorts through the information regarding the allocation of species to the correct categories, oversees the implementation of measures for the protection of threatened species, as well as presents the Ministry of Environment with recommendations for necessary protection measures.

The latest updates in the List of Red Data Book species was made in 2007. At present in this Book there are 339 plant species and 175 fungi and lichens species:

Plants	**0 (Ex)**	**1 (E)**	**2 (V)**	**3 (R)**	**4 (I)**	**5 (Rs)**	***In total***
Club moses	-	1	1	-	-	1	**3**
Horsetails	-	-	-	1	-	-	**1**
Ferns	-	5	-	1	2	-	**8**
Conifers	1	-	-	-	-	-	**1**
Flowering plants	12	51	63	67	19	9	**221**
Red algae	-	1	-	-	-	-	**1**
Brown algae	-	-	-	-	1	-	**1**
Charophytes	-	2	1	4	3	-	**10**
Mosses	1	19	19	26	28	-	**93**
In total	**14**	**79**	**84**	**99**	**53**	**10**	**339**
Fungi							
Fungi	3	27	24	27	31	-	**112**
Lichens	12	30	15	6	-	-	**63**
In total	**15**	**57**	**39**	**33**	**31**	**-**	**175**

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience.

The NBCSAP states that the preparation of Special Action Plans (SAP) are proposed for species and communities listed in EU documents on biodiversity protection, species and communities included in the Lithuanian Red Data Book. The priority species for which SAP

should be prepared are the plant species listed on Annex II of the Habitats Directive.

Nature management plans of particular protected areas also contain a practical guidance to ensure the plant conservation and sustainable use activities. During 2004-2008 55 nature management plans (Strategic planning documents) for various protected areas were approved by the orders of the Minister of Environment and many of them sets measures for management of protected plant species and habitats.

Legal basis for preparation of SAP is ensured (provisions set in the Law on Protected Plant, Animal and Fungi Species and Communities (1997, amended in 2001 and 2009).

During Phare project „Protection of endangered species of flora and fauna and their habitats through implementation of CITES and the Bern and Bonn Conventions and the related EU legislation" (2005-2006) recommendations for management of habitats of *Cyprepedium calceolus, Liparis loeseli, Pulsatilla patens, Saxifraga hirculus* and *Haematocaulis verniculosus* have been prepared and published.

Target 4. At least ten percent of each of the world's ecological regions effectively conserved.

The NBCSAP ecosystematic level goals (E1-E7) are linked with this target (see Chapter II, question (a)).

At present protected areas cover 15,13 % of Lithuanian territory (increased from 12,05 % in 2004). In Lithuania there are 30 Botanical Nature Reserves; 38 Mires Nature Reserves; 16 Botanical – Zoological Nature Reserves. Various rare flora species are also protected in 4 National Parks, 3 Strict Nature Reserves and 1 Biosphere reserve and on local level in 33 Municipality Botanical Reserves, 23 Municipality Botanical – Zoological Nature Reserves, 2 Municipality Mires reserves. Additionally in Lithuania there are 255 Botanical Nature Heritage Objects which are protected according to the national legislation. More information about protected areas in Lithuania is available at the website of State Service for protected Areas: www.vstt.lt or look at the next chapter (Programme of work on protected areas).

Inventory of Annex I habitat types and Annex II species of the Habitat's Directive was carried out and the list of potential Sites of Community Importance (pSCI) for habitat types and species now contains 298 sites (9 % of the State area) and 99 of SCI are already approved by the Government of Lithuania.

Target 5. Protection of fifty percent of the most important areas for plant diversity assured.

One of the NBCSAP geosystematic level goals – G6 - is more or less linked with this target (see Chapter II, question (a)).
Information about Lithuanian protected areas is presented above (Target 4). After the analysis of inventories made during the designation of Natura 2000 sites network in Lithuania, it was assumed that majority of the most important areas for plant diversity conservation are already state protected.

Legislative measures:
Order of the Minister of Environment on the limitation of use of certain plant species (1997) regulates the use of certain plant species.
Law on Wild Flora (1999, amended in 2004) regulates the conservation and use of plant species.
Law on on Protected Plant, Animal and Fungi Species and Communities (1997, amended in 2001 and 2009) prohibits gathering of specially protected species in wild.

Target 6. At least thirty percent of production lands managed consistent with the conservation of plant diversity.

The NBCSAP goals G6 (geosystematic level), E1, E6, E8 (ecosystematic level) and R6 (species level) are linked with this target (see Chapter II, question (a)).
One of the measures of the Rural Development Programme (2004-2006) of Lithuania was Agro-Environment. Also the same measure is adopted in the Rural Development Programme for 2007-2013 (comprehensive information about Rural Development Programmes for 2004-2006 and 2007-2013 is given int the Chapter III of this report). In May 2004 Minister of Environment approved the list of areas with special environmental restrictions concerning agriculture. This order states that farmers in certain areas can get the compensations for the land use restrictions.

Forests cover 32,7% of Lithuania territory (during 2001-2006 increased by 1,8%). Private forests cover 35,4% of all forests. I group (strict nature reserves) forests occupy 1,2%, II group (ecosystem protection and recreational) – 12,3%; III group (protective) – 16,1% and IV group (commercial) – 70,4% (2006 data). Mainly native tree species from local seed populations are used in tree plantations. More information about forests and forestry statistics in Lithuania is available in the official website of the State Forest Survey Service – www.lvmi.lt

During Lithuanian – Swedish project „Full-Scale Woodland Key Habitat (WKH) Inventory in Lithuania“ were identified 8902 WKHs (26427,5 ha) in forest enterprises and National parks. Woodland key habitats are such sites in the forest where the forest has existed for hundreds of years and where no significant management has been done for a long time, and which provide conditions for the living of rare and endangered species having highly specific demands for the habitat.

Baseline of environmental restrictions on forestry activities in protected areas differs depending from the type of protected area. This baseline is set in following legal acts: 1) Law on Protected Areas, 2) Law on Forests, 3) Statutes of individual protected areas approved by the Government or Minister of Environment.

Depending on the type of protected area as well as on species and habitats to be protected different combinations of restrictions for ongoing forestry practice from most common 4 have been set:

1) final forest cutting operations shall be forbidden or postponed;
2) final forest cutting operations shall be carried out in non-clear cutting way;
3) additional number of living trees shall be preserved and left in clear cutting areas;
4) sanitary felling is restricted, e.g. drying trees or dead wood shall be preserved.

In the end of 2004 the Government approved the compensatory order for the

restrictions in forestry in the protected areas.

Target 7. Sixty percent of the world's threatened species conserved *In-situ*.

The NBCSAP states to prevent the further reduction of the species composition of biocenoses, protect locally characteristic species and natural populations and ensure conservation of species of international importance. The Action Plan for the protection of species has been developed to attain the priority goals of species level (R1, R2), and partially to attain the goal of geosystematic level (G6) presented in Chapter II of this report. Methods of species protection include:

- protection of species from persecution and intensive use,
- conservation of habitats by establishing protected areas and managing them in accordance with the requirements of their flora and fauna;
- environmental protection by limiting activities causing destruction of landscape and habitats and by reducing air, water and soil pollution.

Measures taken to achieve target:
Inventory of habitats and species listed in the Annexes of the Habitats Directive (92/43/EEC) carried out in 2000-2003 and all the known most important territories for flora conservation are included within Natura 2000 sites.

During 2004-2008 55 nature management plans (Strategic planning documents) for potential Sites of Community Importance were approved and their implementation launched.

Law on Protected Areas (1993, amended 2001).

Law on Protected Plant, Animal and Fungi Species and Communities (1997, amended in 2001 and 2009).

Law on Wild Flora (1999; amended in 2004).

Target 8. Sixty percent of threatened plant species in accessible *Ex-situ* collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes.

The NBCSP genetic level (ex-situ) goals Ex1, Ex2 and organizational level (ex-situ) goals Ex3 and Ex4 are linked with this target (see Chapter II).
Since 1994 the state finances research programmes of plant genetic resources.
In Lithuania there are 2 large herbaria of plants: Vilnius University (650 000 specimens) and the Institute of Botany (446 000) specimens). Now the Herbarium of the Institute of Botany consists of:

1. **Herbarium of Vascular Plants of Lithuania** (about 50 000 specimens). The most abundant collections are of the following families: *Cyperaceae* - approx. 4 000 specimens, *Poaceae* - approx. 4 000 specimens, *Rosaceae* - approx. 3 500 specimens, *Asteraceae* - approx. 3 500 specimens. The most plentiful collections are of the following genera: *Alchemilla* - approx. 1 200 specimens, *Populus* - approx. 900 specimens, *Salix* - approx. 900 specimens, *Hieracium* - approx. 600 specimens. This herbarium includes over 8 000 specimens of adventitious plants;

2. **General Herbarium** (about 6 000 specimens). This herbarium of foreign plants has been started not long ago and we hope to enlarge it by means of exchange;

3. **Herbarium of Mosses of Lithuania** (8 000 specimens). The major part of herbarium collections (excluding *Characeae* and specimens of fragile and small plants) are kept unmounted in covers (44 x 30 cm). Collections are arranged according to the system of Dalla Torre et Harms. The collections are stored in metal hermetic safes produced in Hungary. The computer data base for the herbarium data processing has been developed. At present this data base is transformed into dBASE type.

4. **Collection of Macromycetes**. It contains ca. 20 000 specimens ascribed to 1800 species;
5. **Collection of Micromycetes** (ca. 10 000 specimens);
6. **Collection of Myxomycota** (ca. 1500 specimens ascribed to 180 species);
7. **Collection of Lichens and Lichenicolous Fungi** (ca. 3700 specimens ascribed to 450 species).

Vilnius University also houses about 6000 lichen specimens, about 10 000 fungi specimens, over 10 000 mosses specimens, over 1000 algae specimens.
Plant Gene Bank and coordination centres of national plant genetic resources (5) established in 2004 by Governmental order, but started to function in 2005. Plant Gene Bank is a subordinate institution of the Ministry of Environment. Plant Gene Bank coordinates researches of genetic resources and stores plants genetic material, organizes and coordinates the work coordination centres of national plant genetic resources, protecting genetic resources in-situ and ex-situ. Seeds of 157 species plants (2475 specimens) are stored in the Plant Gene Bank (2009 data).

Coordination centres of national plant genetic resources: 1) Agricultural plants; 2) Forest trees; 3) Fruits and vegetables; 4) Ornamental plants; 5) Medical plants. Commission on Plant Genetic resources established in 2004.
Law on Lithuanian Republic Plant National Genetic Resources (adopted in 2001) and 18 supplementary legal acts.

Target 9. Seventy percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.

The NBCSAP states to avoid degradation of forest populations; prevent further degradation or extinction of the gene pool of domesticated taxa.

Plant Gene Bank and Coordination centres of national plant genetic resources makes genetic resources researches and stores specimens of these plant groups and species: 1) cereal and grain legume crops; 2) yellow lupine, blue forage and blue sideral lupine; 3) forage grasses and legumes; 4) potato; 5) genetic resources of flax; 6) vegetables; 7) traditional horticultural plants; 8) wild small fruit and nontraditional horticultural crops; 9) medical and aromatic plants; 10) ornamental plants; 11) natural and induced mutants; 12) forest genetic resources; 13) genetic resources of *Salix.* More information on the website of Plant Gene Bank: www.agb.lt

Introduction and acclimatization of plants is performed in botanical gardens. The largest collections are botanical gardens of Kaunas Vytautas Magnus University (7000 taxa) and Vilnius University (is not only the largest in Lithuania (the total area of 199 hectares) but also

have the richest collections of plants: here grown about 10,000 taxa of plants belonging to 190 families, 886 genera), and in the arboretum of Girionys (1000 taxa). Kaunas Botanical Garden (www.botanika.vdu.lt) boasts the largest (718 taxa) collection of trees and has a large section of medical herbs. The fruit section of Vilnius University Botanical Garden (www.botanikos-sodas.vu.lt) carry out selection of species of Ribes and Grossularia.
Spontaneous introduction of plants occurs in individual collections.

The Institute of Agriculture of Lithuania has established a modern plant seed storage facility which examines and maintains 25 collections of species of agricultural plants, containing over 4000 specimens. At the gardening and farming Institute of Lithuania there are 25 garden plant species, containing over 2000 specimens. Collections of agricultural plants are also maintained at the University of Agriculture of Lithuania.

Target 10. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.

The NBCSAP states to protect locally characteristic species and natural populations by preventing the spread of adventitious and invasive species, and by enhancing research.
Law on Wild Flora (1999, amended in 2004) and Law on Protected Plant, Animal and Fungi Species and Communities (1997, amended in 2001 and 2009) states regulations for introduction of alien species.
Law on Plant Protection (1995, amended in 2003) states regulations for import and export of plants.

A programme of introduction, reintroduction, control and elimination of invasive species approved by the Order of the Minister of Environment in 2002.
State Plant Protection Service established in 1998.
Heracleum sosnowskyi invasion researches were done in 2005 and the action plan to prevent it's spread was prepared and approved (by the Order of the Minister of Environment).

In the Biodiversity Conservation and Protected Areas Planning and Management Programme for 2007-2013 (prepared to implement priority actions of EU Structural Support Strategy), is foreseen to prepare action plans for the management of *Heracleum sosnovskyi, Acer negundo* and *Lupinus polyphyllus*. And also it is foreseen to manage 30 habitats of each species in the protected areas.

The list of invasive fauna and flora species approved by the order of the minister of environment in 2004. This list includes 4 alien plant species: *Acer negundo; Heracleum sosnowskyi; Lupinus polyphyllus; Impatiens parviflora.*

Target 11. No species of wild flora endangered by international trade.

The NBCSAP states to conserve species of wild flora endangered by international trade.
Lithuania ratified the Convention „On International Trade in Endangered Species of Wild fauna and Flora" (CITES) in 2001. State Environmental Protection Inspection (subordinate institution of the Ministry of Environment) is responsible for issuing CITES permits.
In Lithuania exists "Trade Order of Wild Plants and Mushrooms" (order of the Minister of Environment, 2000).

Lithuania is implementing the requirements of EU Habitats Directive, which Article 13 stipulates the restrictions concerning trade and requirements of EC Regulation 338/97 on the protection of species of wild fauna and flora by regulating trade therein.

Target 12. Thirty percent of plant-based products derived from sources that are sustainably managed.

The NBCSAP ecosystematic level goal E1 and species level goal R6 are linked to this target (see Chapter II). The NBCSAP also states that in order to maintain biodiversity in agrarian areas it is necessary, to the broadest extent possible, to introduce specific agricultural practices and technologies, from diverse agricultural landscapes that conserve natural conditions, apply specially adapted economic/organizational and legal measures (institutional regulation) and educate or train farmers. Any programme aimed at restructuring agriculture, including sustainable or „organic" (biological) agriculture, should contain measures for biodiversity conservation.

The Rural Development Programme for 2004-2006 states to encourage application of environment-friendly methods in the environmentally vulnerable areas; to support ecological farming. In this Programme there are foreseen activities which concern accumulation of information and education of farmers and also activities for restoration of pastures, meadows, wetlands and cultural heritage are included. Now exists the new Rural Development Programme for 2007-2013 (more detailed information in Chapter III, question 3.2)
The Law on Forests of Lithuania (1994, amended in 2008) determines sustainable forest management (more detailed information in Chapter III, question 3.4)
In Lithuania exists the pilot programme „Tatula". Implementation of this environmental programme is based on the „Tatula Fund", which offers long-term interest-free loans to farmers, whose participation is voluntary. These credits, and other advantages and services, have been successful.

Target 13. The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.

One of the goals of the NBCSAP (Species level goal R6 (see Chapter II)) is to protect or restore non-timber forest products by ensuring rational use, by preparing and implementing a programme for resources restoration.
Over 100 medical plants, about 400 edible mushroom species (about 2500 of macromycetes are identified in Lithuania), and 20 plant species with edible fruit and berries grow in the forests of Lithuania.
Gathering of mushrooms and wild berries is very popular in Lithuania. In Lithuania is also popular traditional health care in terms of using herbal tees (there are several companies producing herbal tees from medical plants gathered in wild).

The resources of wild fruit, berries and mushrooms are still diminishing as is the volume of forest medical material. A more serious problem is the unsustainable harvesting of bear-berry, the fruit of juniperus, bunches of Iceland lichen, blackberries, and spores of medicinal lycopodium. Excessive collecting also contributes to the degradation of mushroom, mountain

cranberry and cranberry areas. Measures taken to achieve target:

Legislative measures.

General provision are set in the Law on Wild Flora (1999, amended in 2004) and concrete rules a set in the supplementary legal acts:

"Order of the Use of Wild Flora" (Order of the Minister of Environment, 2000);

"Order on Trade of Wild Plants, their parts and Mushrooms" (Order of the Minister of Environment, 2000, amended in 2003);

"Rules on Gathering Mushrooms in the Forests of Lithuania" (Order of the Minister of Environment, 1998, amended in 2001).

Order of the Minister of Environment on the limitation of use of certain plant species (1997) regulates the use of certain plant species.

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.

The NBCSAP states the following actions: 1) society should be informed continually on progress in the life of protected areas via mass media; 2) secondary schools and schools of higher education need a special programme on the background of biodiversity. Ecological clubs in secondary schools should be enlarged, and their activities intensified; 3) publish posters on protected species and ecosystems conservation; 4) publish maps of Lithuanian protected areas (forests, meadows, wetlands, etc.); 5) prepare an educational films on various ecosystems and nature conservation; 6) produce and distribute informative displays at protected areas.

Public information and environmental education is one of the key measures seeking to implement the goals of environmental protection and sustainable development. It is identified as such by the **National Strategy for Sustainable Development**, the **National Educational Programme 2007-2015 for Sustainable Development**, and other national strategic documents (see Chapter III, question No. 3.8).

The public awareness on importance of plant diversity is rising gradually. Increasing number of ecological clubs in schools and their member's number.

Posters, leaflets, books and video films on nature conservation issues including plant conservation are regularly prepared by different NGO's, projects and state institutions (Ministry of Environment, Administrations of Protected Areas, Municipalities). Public education and awareness rising activities are included in all nature conservation projects and management plans of protected areas. Annual events within the framework of Biological Diversity day are organized for public. In 2005 a Coalition of NGOs of Lithuania created a website, which is regularly updated with a new information on nature conservation issues (including plant conservation).

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

The NBCSAP states that it is equally necessary to strengthen the regional departments of the Ministry of Environment and the agencies of cities and districts. Planning positions for biologists responsible for the protection of biodiversity should be introduced in the

administrations of regions and municipalities. Every year advanced courses in the field of nature protection are especially needed by officials who make decisions at state, regional and local level, by staff of administrations of protected areas, and regional departments or district agencies of the Ministry of Environment.

There are 8 Regional Nature Protection Department (RNPD) under the Ministry of Environment of Lithuania. In each RNPD there is a Division of Wild Nature Protection (4-5 people are working in these divisions, but usually majority of them are not botanists).
Administrations exists for all 4 National Parks; Zuvintas Biosphere Reserve; 3 Strict Nature Reserves; 30 Regional Parks. Zuvintas Biosphere Reserve has a specialist in botany; all 3 Strict Nature Reserves and 4 National Parks have a botanists as staff members. From 30 Regional Parks only few have a specialists in botany.

Protected Area Strategy Division established in Nature Protection Department of the Ministry of Environment of Lithuania in 2001 (5 specialists are working in this division).
In August 2005 division on Natura 2000 network and biodiversity established in the State Protected Areas Service under the Ministry of Environment of Lithuania.
Different training activities and workshops for environmental inspectors, ecologists and biologists from the administrations of protected areas are organized by various state institutions and NGO's (inputs of various local and international projects). The number of specialists working on nature conservation issues in the Ministry of Environment of Lithuania and subordinate institution increased during 2004-2008 period.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels.

There is no network designed exactly for plant conservation in Lithuania. However, some NGO's dealing with different nature conservation issues have regional branches. Institute of Botany is closely cooperating with institutes of various countries. Institute of Botany is also a partner of various NGO's.

In 2005 a Coalition of NGO established in Lithuania. One of activities of this coalition is biodiversity and nature resources protection (including conservation of plants).
Since 1950 in Lithuania exists Lithuanian Botanists Society.

Summary. As the National Biodiversity Conservation Strategy and Action Plan (NBCSAP) was adopted in 1998 and the Global Strategy for Plant Conservation (GSPC) was approved 4 years later, the particular provisions of GSPC are not addressed in the NBCSAP. As it was stated in the beginning of this chapter: Lithuania has not established national targets corresponding to global targets set in GSPC, but the majority of the global GSPC targets are incorporated into relevant plans, programmes and strategies. However the main progress in the plant conservation is not directly linked with GSPC targets, but with the implementation of requirements of EU Habitats Directive.

The big problem is that the NBCSAP is relatively old (prepared in 1998) and there is no idea when the new will be prepared (lack of finanacial resources to hire experts from various institutions for preparation of it). Another problem is that the NBCSAP is not revised every 5 year (as it was planed) and not updated.

Main constraints in the implementation of GSPC targets is insufficient funding, lack of flora specialists in the Governmental institutions (Ministry of Environment, State Service for Protected Areas, Administrations of Protected Areas), sometimes – lack of political will to take nature conservation decisions.

APP.III.2. PROGRESS TOWARDS TARGETS OF THE PROGRAMME OF WORK ON PROTECTED AREAS

Recent national protected areas system was established by Law on Protected Areas (1993, amended 2001).

Table III.2. System of protected areas by categories (numbers, areas) by 01.08.2009

Protected Areas Categories			
Category	**Number of Sites**	**Area [1] (ha)**	**Portion of total Lithuanian territory (%)**
Strict nature reserves	**6**	**18769,14**	**0,29**
Nature	3	18406,72	0,28
Culture	2	242,90	0,004
Strict microreserves	1	119,52	0,002
Reserves	**367**	**158024,24**	**2,42**
State reserves	**256**	**144927,23**	**2,22**
Landscape	47	47010,34	0,72
Geological	10	629,95	0,01
Geomorphological	40	22752,51	0,35
Hydrographical	34	12858,73	0,20
Pedological	11	1272,06	0,02
Botanical	30	5065,56	0,08
Zoological	29	15681,91	0,24
ornithological	*10*	*2897,37*	
ichtiological	*9*	*12178,17*	
teriological	*1*	*8,00*	
herpetological	*3*	*123,62*	
entomological	*6*	*474,75*	
Botanical - zoological	16	17260,70	0,26

Telmological	38	22395,47	0,34
Talasologinical	1	14027,10	-
Municipality reserves	**111**	**13097,01**	**0,20**
Landscape	20	5515,04	0,08
Geomorphological	4	574,49	0,01
Hidrographycal	3	333,05	0,01
Botanical	33	2816,24	0,04
Zoological	26	1529,74	0,02
ornithological	*12*	*821,82*	
teriological	*12*	*490,47*	
herpetological	*1*	*0,33*	
entomological	*1*	*217,12*	
Botanical - zoological	23	2253,50	0,03
Telmological	2	74,95	0,00
State protected nature monuments	**497**		
Geological	154		
Botanical	255		
Geomorphological	32		
Hydrogeological	34		
Hydrographical	22		
Restoration (recuperation) areas	**3**	**875,42**	**0,01**
State parks	**35**	**589170,51**	**9,02**
National parks	5	144469,31	2,21
Regional parks	30	444701,20	6,81
Biosphere reserves	**1**	**18489,69**	**0,28**

Biosphere monitoring areas	**27**	**202368,34**	**3,10**
Total:		**987697,34**	**15,13**

Goals 1.1. To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals.
Target: *By 2010, terrestrially and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals – particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation.*
Progress: Recent Lithuanian system of protected areas was established under the law of Protected Areas (1993, amended 2001). Lithuania made a progress in designation of new protected areas, especially Natura 2000 in order to fulfill EU requirements. Recently 15,13% of Republic of Lithuania territory covered by the protected area system. Special Protected Areas (SPA) covered 7%, Special Areas of Conservation (SAC) covered 9% (both SPA & SAC /Natura 2000/ 11% of Lithuanian territory. 61,4% of territory is under protection of national geo-ecological network (Nature frame), which ensure sustainable development in the area with certain restriction for developments. In 2009 new Natura 2000 sites are going to be designated. In 2004 – 2005 an independent project (Phare/EUROPEAID/114746/D/SV/LT) team carried out evaluation of protected areas management effectiveness. Conclusion are published.
Obstacle encountered: lack on protected areas management strategy, biodiversity conservation orientated management of protected areas, insufficient involvement stakeholders in management.
Goals 1.2. To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function.
Target: *By 2015, all protected areas and protected area systems are integrated into the wider land- and seascape, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity and the concept, where appropriate, of ecological networks.*
Progress: Lithuanian Nature Frame integrates all protected areas in the system of protected areas. State Protected Areas Service under Ministry of Environment is coordinating protected areas administration activities. The areas which do not have administrations, are under the management of neighboring state park administrations. It is establish network of state parks and reserves administrations.
Obstacle encountered: The Nature Frame is designated on the geo – ecological criteria, but not on biodiversity features. Ecological networks (biocorridors) could be designated inside frame areas, but criteria for selection ecological network are not adopted yet.
Goals 1.3. To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries.

Target: *Establish and strengthen by 2010/2012 transboundary protected areas, other forms of collaboration between neighbouring protected areas across national boundaries and regional networks, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation*
Progress: There is Curonian Spit national parks as international transboundary protected area (Lithuania – Russian Federation). Transboundary protected areas cooperation issues are included in bilateral agreements (Belarus, Latvia, Russian Federation).
Goals 1.4. To substantially improve site based protected area planning and management
Target: *All protected areas to have effective management in existence by 2012, using participatory and science-based site planning processes that incorporate clear biodiversity objectives, targets, management strategies and monitoring programmes, drawing upon existing methodologies and a long-term management plan with active stakeholder involvement.*
Progress: Ministry of Environment has laid down the programme on biodiversity conservation and management of protected areas (2007 – 2013). In compliance with programme and relevant Minister of Environment Orders management plans are prepared and are under preparation. The schedule for preparation of management plans for Natura 2000 areas are set by State Protected Areas Service till 2013. Spatial (territorial) management plans and schemes are prepared for majority of protected areas (state parks, strict nature reserves), but for reserves would be done in the future.
Obstacle encountered: disproportion of financial and human resources between territorial planning and nature management planning and not sufficient quality of prepared plans.
Goals 1.5. To prevent and mitigate the negative impacts of key threats to protected areas.
Target: *By 2008, effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas are in place.*
Progress: Monitoring and analysis of key threats to protect areas and other high conservation value territories are carried out. Environment impact assessment and Strategic environment impact assessment are carried out according the Law (see for details Chapter 3). Meanwhile there are frequent conflicts in protected areas development activities, especially in housing sector. There are conflicts also in forestry: illegal cutting, not following forest management plans. Legal background to mitigate negative impact is more or less in place, but practical implementation not always is in line with the legislation.
Obstacle encountered: limited human, technical and financial resources for controlling of activities in protected areas. Insufficient analysis of key threats to protected areas.
Goals 2.1. To promote equity and benefit sharing.
Target: *Establish by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and management of protected areas.*
Progress: Lithuanian legislation grants all citizens the influence over development, physical an strategic planning, establishing and management of protected areas, as well as benefit from the areas resources.
Obstacle encountered: insufficient involvement of stakeholders and lack of communication, issues are complex with various stakeholders on use resources and development of territories.
Goals 2.2. To enhance and secure involvement of indigenous and local communities and relevant stakeholders.
Target: *Full and effective participation by 2008, of indigenous and local communities, in full*

respect of their rights and recognition of their responsibilities, consistent with national law and applicable international obligations, and the participation of relevant stakeholders, in the management of existing, and the establishment and management of new, protected areas.
Progress: According the legislation local communities have possibility to participate in management of protected areas in full respect of their rights and recognition of their responsibilities. Meanwhile participation of relevant stakeholders not always is in line with legislation.
Obstacle encountered: lack of communication between protected areas administrations and local communities, inperception of people towards protected areas.
Goals 3.1. To provide an enabling policy, institutional and socio-economic environment for protected areas.
Target: *By 2008 review and revise policies as appropriate, including use of social and economic valuation and incentives, to provide a supportive enabling environment for more effective establishment and management of protected areas and protected areas systems.*
Progress: The nature protection and related legislation is in accordance with EU and international obligations.
Obstacle encountered: lack of professional to conduct evaluation.
Goals 3.2. To build capacity for the planning, establishment and management of protected areas.
Target: *By 2010, comprehensive capacity-building programmes and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards*
Progress: Efficiency in planning of planning management of protected areas at national level. Nature management plans are prepared for certain amount of protected areas. 55 nature management plans are approved by the Order of the Ministry of Environment and more than 100 are prepared for approval.
Obstacle encountered: insufficient knowledge in planning at regional and local levels.
Goals 3.3. To develop, apply and transfer appropriate technologies for protected areas.
Target: *By 2010 the development, validation, and transfer of appropriate technologies and innovative approaches for the effective management of protected areas is substantially improved, taking into account decisions of the Conference of the Parties on technology transfer and cooperation.*
Progress: Sufficient financial, technical and other resources to meet costs to effective implementation and management at national and regional level are insufficient, but there are a lot of efforts to improve.
Obstacle encountered: lack of resources and knowledge.
Goals 3.4. To ensure financial sustainability of protected areas and national and regional systems of protected areas.
Target: *By 2008, sufficient financial, technical and other resources to meet the costs to effectively implement and manage national and regional systems of protected areas are secured, including both from national and international sources, particularly to support the needs of developing countries and countries with economies in transition and small island developing States.*

Progress: there is a big progress in financial and technical supply in protected areas mainly from EU funds. Support countries in transition is under development.
Obstacle encountered: lack of financial resources.
Goals 3.5. To strengthen communication, education and public awareness.
Target: *By 2008 public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased*
Progress: Public awareness on protection and management significantly increased during the reporting period, but not sufficient still.
Obstacle encountered: lack of education material, communication between protected areas administrations and general public.
Goals 4.1. To develop and adopt minimum standards and best practices for national and regional protected area systems.
Target: *By 2008, standards, criteria, and best practices for planning, selecting, establishing, managing and governance of national and regional systems of protected areas are developed and adopted.*
Progress: there are some attempts to share best management practice.
Obstacle encountered: lack of political will to adopt protected areas strategy and selection criteria.
Goals 4.2. To evaluate and improve the effectiveness of protected areas management.
Target: *By 2010, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and trans-boundary protected area levels adopted and implemented by Parties*
Progress: In 2004 – 2005 an independent project (Phare/EUROPEAID/114746/D/SV/LT) team carried out evaluation of protected areas management effectiveness. Conclusions are published.
Obstacle encountered: Insufficient monitoring of management activities, evaluation of management effectiveness.
Goals 4.3. To assess and monitor protected area status and trends.
Target: *By 2010, national and regional systems are established to enable effective monitoring of protected-area coverage, status and trends at national, regional and global scales, and to assist in evaluating progress in meeting global biodiversity targets*
Progress: established monitoring systems and there are equipment to carry out monitoring. The main legal act for monitoring is the State Environment Monitoring Program for 2005-2010, and other acts as Monitoring Program for Sites Important for Habitat and Bird Protection, approved by the Order of the ministry of Environment in 2002.
Obstacles encountered: lack of human resources.
Goals 4.4 To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems.
Target: *Scientific knowledge relevant to protected areas is further developed as a contribution to their establishment, effectiveness, and management.*
Progress: some research publications came out on biodiversity in the reporting period. Increased publications on public awareness in relation with protected areas.
Obstacles encountered: lack of overview publications and assessments on biodiversity, best management practice.