









Study Tour

Environmental and Forest Supervision and Control Processes in the Baltic countries

20. - 29.08.2016 | Estonia, Latvia and Lithuania

Documentation

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The Study Tour in brief

Rationale

In December 2015 the Department of Environmental Supervision (DES) of the Ministry of Environment and Natural Resource Protection (MoENRP) asked the German Agency for International Cooperation (GIZ) for support to improve the professional capacity of the staff at central and district level. Until February 2016 a 2-years Human Capacity Development (HCD)-program was developed which includes "Training of Trainers", target-oriented training of staff at different levels and the exchange of experiences concerning supervison of environmental activities with countries abroad. After having analyzed the situation in several East European countries it was decided to realize a study tour to Estonia, Latvia and Lithuania, because of their diverse institutional setting and experiences made after independence in the early nineties.

Venues

Ministries and subordinated bodies responsible for the protection and management of the environment, natural resources and forest as well as protected areas and managed forest areas.

Objectives of the Study Tour

The study tours aimed to learn about:

- 1. Organizational structure in the field of environmental and forest protection and management
- 2. Legislative and organizational structural changes, which have been carried out after independence and during the process of entering EU
- 3. Agencies, responsible for forestry policy, management and supervision and respective distribution of responsibilities
- 4. Responsible body for supervision of forest operations
- Types of forest ownership (private, municipal, state). Elaboration, implementation and supervision of Forest Management Plans
- 6. Requirements, regulations and law enforcement of natural resources use within the forest areas according to forest ownership types (non-timber resources, fossil, underground water, fish resources, animals, birds, etc.)
- Forest inspection procedures, field and office works, field equipment, used for inspection procedures

- 8. System for controlling wood harvesting, transportation and primary processing
- 9. Operation of electronic tracking system (chain of custody from the tree stump until the end product of the sawmill) scheme, modules, users and general topics for using the system
- 10. Visit to the round log processing enterprise (preferably small or medium size sawmill)
- 11. Methods (prevention, identification, response) against illegal harvesting, transportation and processing of wood resources
- 12. Production and provision of fire-wood

Participants

from the Department of Environmental Supervision (DES), the National Forest Agency (NFA) and the Ageny for Protected Areas (APA) from the Ministry of Environment and Natural Resource Protection of Georgia (MoENRP)







GENERAL INFORMATION ABOUT THE FOREST SECTOR OF ESTONIA

compiled from: A Policy and Institutional Analysis of Forest Sector Reforms in Central and Eastern Europe, M. Sotirov, GIZ Working Paper 67/2014

Percentage of forest cover of the country

Estonia's forests cover an area of total 2,217,000 ha. Other wooded land has a total surface of 133,000 ha (FAO 2010a). This corresponds to forest cover of 50% of the national territory. The two main forest types are forests growing on mineral soil (about 70%) and swamp forests (about 30%) growing in the numerous wetland areas of the country. The most common tree species are pine, birch and spruce. About 75% of Estonian forests are commercially used for timber production (1.5 million hectares), with another 25% allocated to some kind of protection status (water, soil, habitats) (Ministry of Environment, Estonia 2013).

Forest ownership: percentage of state, communal and private owned forest

In 2012, the distribution of the total forest area according to type of property was as follows (Parv 2014):

Forest ownership in Estonia			
Type of ownership	Area, ha	% of total forest area	
State-owned forests (state forest districts)	789.000	36%	
Municipal forests and other public forests	67.400	3%	
Private owned forests, including: • Forests owned by private physical persons (individuals) • Forests owned by private juridical persons (companies)	978.000 766.000 207.000	44% 35% 9%	
Other type of forest ownership (forest land subject to privatisation)	368.000	17%	

After the forest restitution process, more than half of the country's forest areas are privately owned with ca. 80.000 Estonians owning their small private patch of forest (PEFC 2013).

Institutional framework: role of state, stateowned enterprises, private enterprises

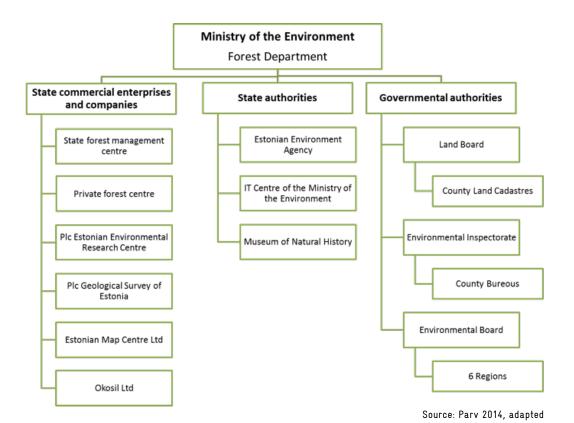
Responsible for the forest sector policy and management is the Ministry of the Environment together with other state authorities in the field of environment and forestry. The State Forest Management

Centre acts as the biggest commercial state-owned agency. Another entity in the field of forestry is the Private Forest Centre dedicated to support private forest owners in the country. A multitude of private sector enterprises operates throughout the country whose shareholders are either from Estonia or international ones. They can be differentiated into the following main categories: timber procurement firms, purchase and sales oriented economic operators, sawmills and pulp and paper companies.

Government authorities

The Ministry of Environment is the central executive government body responsible for the organisation and coordination of environmental protection in general, and forest policy in particular. The Forest Department within the Ministry of Environment is responsible for the field of forestry whereas the Nature Conservation Department is less directly responsible for forest issues. The Head of the Forest Department is directly subordinated to the Minister of the Environment. The primary function of the Forest Department, including all together 8 persons, is to organise, prepare and implement forest and hunting policy. The Ministry of Environment includes different types of state organizations: state commercial enterprises and companies, state agencies and governmental authorities (Figure 2).

The State Forest Management Centre, the Private Forest Centre, the Estonian Environmental Research Centre and the Geological Survey of Estonia are part of the state commercial enterprises and companies. The Private Forestry Centre arranges financial support for private forestry and the private forest owners by applying for national and EU funding for forestry projects and programmes. It also analyses and publishes information related to private forestry. The Forest Department is funded by the state budget while the State Forest Management Centre earns its revenues from timber sales and other commercial sources of funding. The Environmental Board (approximately 70 persons) monitors all of the work carried out in forests, assesses which forest stands are the best suited for providing high-quality forest reproductive material, issues permits for timber felling and supervises reforestation activities. The Environmental Inspectorate (approximately 70 persons) is responsible for the enforcement of forest law. It supervises the use of the natural environment and its resources. It also



deals with environmental violations and since 2011 carries out investigations in criminal cases (Keskkonnaministeerium 2005; FAO 2010a). The Estonian Environmental Agency (approximately 40 persons) collects, processes, analyses and distributes information about the nature, including forests and forestry in the country. The aim is to provide reliable environmental information for domestic decision-makers as well as for the society in general and organisations in the country and abroad. The Estonian Environmental Agency has also control functions and keeps the Forest Register which represents a public database as part of the National Register for Accounting Forest Resources (Pary 2014).

State owned forestry enterprises

In 1999, the State Forest Management Centre was founded in Estonia as a commercial state-owned forestry organization which manages ca. 1 million ha or 99% of all public forests. It is a profit-making state agency (745 employees 2013 vs. 1.200 employees in 2007) that is controlled by the Ministry of Environment (State Forest Management Centre 2007a). As a governmental profit-making organization, the State Forest Management Centre earns its revenues from timber logging and sales. Harvesting operations are done by selling standing timber or by outsourcing timber harvesting services to private firms based on

biddings (oral, written, combined), biddings with negotiations and with negotiated price. All the information about the sales and involved partners/companies has to be published (to garantize transparency). The Centre's main source of income is selling timber that is harvested in areas allocated for commercial forestry. Turnover and revenues from timber harvesting and timber sales amounted to 155 million EUR in 2013 (compared to a turnover of € 131.4 million EUR in 2012 and 71 million EUR in 2007) (State Forest Management Centre 2012). In 2013, the State Forest Management Centre transferred 20 million EUR from its revenues to the state budget (compared to 11.4 million EUR in 2007). Its operating profit in 2013 was 31.5 million EUR (compared to 8.7 million EUR and investments of 8.5 million EUR in 2007) (Parv 2014).

The State Forest Management Centre is structured in divisions comprising supervisory board, management board, audit committee and internal audit. Its structural units are considered as a fourth division. These units mainly encompass the various specialized departments and services, regions, forest districts as well as hunting and recreational areas (Estonian Forest Act 2003, § 11, 15, 20, 22). The supervisory board acts as the highest directing body, which plans the activities and organises the management of the Centre, and supervises the activities of the management

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board (Estonian Forest Act 2003, § 49, Section 1). The management board is the directing body representing and directing the Centre (Estonian Forest Act 2003, § 50, Section 1). These bodies are controlled by the audit committee and the internal audit of the Centre. The committee's task is to ensure that the State Forest Management Centre is managed according to good management and supervision practice, including the assessment of financial risks and its activities compliance with current legislation (State Forest Management Centre 2007b). The internal audit also aims at giving an independent assessment on the law compliance, expedience, economic efficiency and effectiveness of the Centre's activities and its internal control system (State Forest Management Centre 2007c).

Experience with forest sector reforms

After the fall of the Soviet Union and in the time of political and socio-economic changes in Estonia in early 1990s, the forest sector was dominated by unified state forestry service that was responsible for all economic management, including forest industry and regulatory functions. During this time, the role of the private sector was minimal and the economic performance of the forestry sector was bad and inefficient in terms of decreasing revenues and stable or increasing staff costs. A land reform in 1991 had prepared the ground for further policies and programs towards starting and implementing a forest sector reform process. In 1995, a policy and institutional reform in the forest sector was initiated by launching the Estonian Forestry Development Program. The program was designed as a participatory process, including a dialogue among the different stakeholders such as state authorities and non-governmental organizations, private forest owners, private companies and experts (Kallas 2000). This was followed by the 1997 National Forest Policy, the Policy Implementation Plan and the New Forestry Act in the year 1999. Key objectives of these forest policy processes were institutional forestry reforms aiming at separation of economic management and regulatory and supervision functions in state forestry organizations to achieve economic efficiency while respecting sustainable forest management.

There were two rounds of institutional reforms since 1999. First, forest regulatory functions were separated from economic management functions with the latter including forest management (forest management planning, silviculture, afforestation, etc.) and forestry operations (timber harvesting, timber sales). One important reason for the reforms was that the management of state-owned forests was faced with economic challenges such as low industrial labour productivity, too high share of administrative staff in total labour, high cost of administration per m3 har-

vested, and low mechanization in final timber felling and thinning (Tónisson 2007). Therefore, the State Forest Management Centre carried out important and profound organizational reforms towards increased efficiency of state forest management. Second, due to competition and conflicts between public and private organizations, state-run forestry operations were privatized. The State Forest Management Centre was mandated to act as a commercial government agency coordinating and outsourcing forestry operations (timber harvesting) in state-owned forests. At the same time, state regulatory functions were also separated in two sets of functions: forest policy-making on the one hand, and forest policy implementation and law enforcement on the other hand. Between 1995 and 2005 as result of the forest sector reforms, the number of employees in the State Forest Management Centre decreased by almost 300% from 4.000 to 1.200 whereas its turnover increased from 20.000 EUR to 60.000 EUR per capita. As a result of the reforms, the State Forest Management Centre has been transformed to a profitable state forestry organization with lower than average cost of timber management in terms of EUR/ha, low cost of logging, wood extraction and on-road transport, and low cost of seedlings. Achieving the State Forest Management Centre's goal of balanced provision of social, environmental and economic forest functions has remained a challenging task. On the one hand it works very similar to a private sector company when it comes to profitmaking which puts an emphasis on timber production and other economic aspects of forest management. At the same time, the State Forest Management Centre has to provide all public goods services such as maintenance of natural forest landscapes, biodiversity conservation, water and soil protection through environmentally friendly forest management, and developing recreational possibilities that are free for all (Estonian Ministry of the Environment 2000).

Mainly experts and consultants from the Finnish Government supported the institutional development processes in the country with technical assistance and know-how. Therefore it can be concluded that these actors were influential in setting the agenda and providing "blue-print" for the economically-oriented forestry sector reforms in Estonia (Kallas 2000).



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Lahemaa National Park

	Time	Activities
Sunday, August 21, 2016	07:30- 08:30 8:30 12:30 19:30	Breakfast Departure, Visit to Lahemaa National Park Lunch in Lahemaa National Park Leisure time and dinner close to the hotel

DAILYOGRAMME



LAHEMAA NATIONAL PARK

A Tour through the Lahemaa National Park

guided by Riina Kottier, Head Environmental Specialist of the Estonia Conservation Board

The Study tour "Environmental and Forest Supervision and Control Processes in the Baltic countries Estonia, Latvia and Lithuania" started in Estonia with the visit of the Lahemaa National Park in the north of the country. Riina Kottier, Head Environmental Specialist of the Estonia Conservation Board, guided us through the huge National Park. Its surface area is about 75.000 ha, of which about 48.000 ha is land and about 27.000 ha sea.

Lahemaa National Park was established in 1971 to preserve, protect, restore, study and raise awareness about the nature, landscapes, cultural heritage and balanced use of the environment of coastal areas in Northern Estonia.

Lahemaa National Park is situated on the Gulf of Finland. There are 68 settlements of various kinds in the national park. There are about 3,500 permanent residents in the area, but during summer time the population of coastal villages increases many times over.

The national park was established to preserve landscapes typical of Northern Estonia where wooded areas are predominantly unaffected by human activity, semi-natural communities are well-maintained



and great effort is made to preserve and restore cultural values.

30% of the sea area is under protection and the National Park is one of the most forested protected areas in Europe. Forests are the predominant ecosystem in Lahemaa and are considered to have high conservation value. It is estimated that forests relatively uneffected by human activity cover around 73% of the national park's land area, of which ca. 60% are pine forests due to the sandy and dry soil, which is typical for North Estonia and Northern Europe.



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Bogs

The size of bogs and the proximity of lakes and the sea with abundand fish stocks render the area an ideal habitat for the osprey and golden eagle. Sadly, trees are starting to take over in bogs, mainly due to draining. Thus, wader species characteristic of treeless bogs are becoming increasingly rare.



The bog is 3 Meter thick. The guide asked participants: "How old is the bog when it grows 1 mm per year?" The correct answer was 3000 years.



Main stages in the development of a bog



Viru bog, Toomas Tuul: This trail is one of the most popular in Laheema because of its easy access. From the observation tower (see photo on the next page) one has an impressive overview over the region.

Bogs, with their excessively moist, nutrient-poor conditions and ever-thickening peat deposits and peat moss layers, give rise to a highly unique growing environment. In addition, bogs produce more oxygen than forests. In view of their efficient photosynthesis capacity it is important to restore bogs, because days are short and there is only little sunlight during the year at this Northern latitude.

rare bird species such as the white-tailed eagle and Northern goshawk, as well as for large mammals such as the brown bear, lynx, elk and wild boar. Some kind of a problem is the large population of beaver in the National Park. They block the rivers by building dams, which hinders fish species to migrate into rivers from the sea. That's why beavers are beeing hunted in Lahemaa.



Many trails can be found in the national park. Some are closed because lot's of park visitors foster erosion of the trails.



Beaver tree (on the right)

Animals

Like elsewhere in Estonia, songbirds form the most abundand bird population in the national park. Large, unfragmented areas of forests untouched by human activity are invaluable habitats for extremely



Management zones in Lahemaa National Park

Conservation work is based on the restriction rules of Lahemaa National Park.

The management zones in the park are:

- nature reserve (0.1 % of the territory). This zone is strictly protected and closed to the public.
- no management zone (28% of the territory). Picking berries and mushrooms is permitted, but any other economic activity is forbidden.
- limited management zone: Activities which meet the restriction requirements of the restriction rules are allowed.

The management of the national park is done by using state budget. The park itself doesn't generate income since the entrance is free. Some of the area is privately owned. In no-management-zones there are no land taxes requested. The state subsidises these areas with $110~\rm eper$ year and ha. 50% of the subsidies are paid in limited management zones. However, private forest owners complain that this is too less.

Along the coastal line there is a building exclusion, which means 200 m on islands and 100 m on the coast it is forbidden to construct buildings. However, the Management Conservation Act allows management roads. We visisted the coast and could see the building exclusion area as well as some special exeptions, such as fisherman's huts.





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2 MINISTRY OF ENVIRONMENT OF THE REPUBLIC OF ESTONIA, FOREST DEPARTMENT

	Time	Activities
	09:15 – 9:30	Walking to the ministry
	09:30 – 11:00	Welcome; Presentation about legislative and organizational structure changes in Estonia after independence and during the process of entering EU; Presentation about Institutions of the forestry sector in Estonia, Agencies responsible for forestry policy and protected areas, management and supervision, responsible body for supervision for forestry field, protected areas and its responsibilities, types of Forest ownership, Agencies responsible for hunting issues; Questions and answers
	11:00 – 11:30	Coffee/Tea – break
, 2016	11:30 – 13:00	Control and Supervision procedures, forest inspection procedures, field and office works, equipment used for inspection procedure, general structure, development, operation and control procedures of Forest Management plans, System of controlling wood harvesting, transportation and primary processing; Operation of electronic tracking system
ıst 22	13:00 – 14:30	Lunch break
Monday, August 22, 2016	14:30 – 16:00	Control and Supervision procedure of hunting process, fishery, NTFP and biodiversity in general
londa	16:00 – 18:00	City tour
2	19:00	Dinner invitation by Ministry of Environment



MINISTRY OF ENVIRONMENT OF THE REPUBLIC OF ESTONIA, FOREST DEPARTMENT

Welcome



The second day of the study tour was dedicated to information about the forestry sector of Estonia. Topics tackeled were among others the legislative and organizational structure changes in Estonia which have been carried out after independence and during the process of entering EU, agencies responsible for forestry policy and protected areas, management and supervision, types of forest ownership (private, municipal, state), agencies responsible for hunting issues, forest inspection procedures, and operation and control procedures of Forest Management Plans.

"We are glad to welcome you here in Estonia!" With this warm welcome Deputy Secretary General, Mr. Marku Lamp, opened the meeting at the Ministry of Environment in Tallinn. In his welcome speech he underlined the pleasant cooperation between Georgia and Estonia in the past. He emphasized that the Georgian colleagues always have been generous, nice people and keen to gain new experiences. Finally, Mr Lamp wished the Georgian delegation a pleasant stay at the ministry as well as in the country and expressed his hope, that participants may find valuable new experiences to take back home.



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A cordial welcome to the Georgian delegation was also given by the Georgian Ambassador in Estonia, H.E. Tea Akhvlediani. She strengthened the importance of this meeting, because "the sector of environment is one of the significant sectors of negotiation between the two countries, Georgia and Estonia". Pointing out the deep and strong bilateral cooperation between the two countries, she said that she is very glad that the government of Estonia is eager to

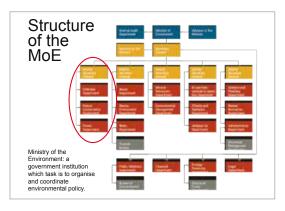
share their experiences with the Georgian delegation. "Most important is", so the ambassador, "that our friends from the Baltic States not only share their success stories but also their failures and gaps."

Ms. Neli Korkotadze, Chief State Inspector, working at the Department of Environmental Supervision in Georgia welcomed the Estonian colleagues and hosts and expressed her gratitudes that this exchange of experience was made possible.

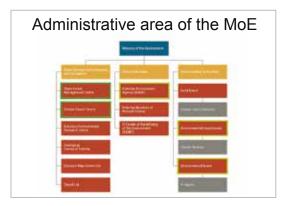
Forestry in Estonia - Structure and administrative area of the Ministry of the Environment

Marku Lamp, Deputy Secretary General, Ministry of the Environment of Estonia

The task of the Ministry of the Environment is to create such prerequisites and conditions which ensure us and the following generations diverse nature and clean living environment as well as the sustainable use of natural resources. Minister of the Environment is Mr Marko Pomerants, geologist and in position for one year now.



Ministry of the Environment consists of 18 departments. Our unit involves Fisheries, Nature Conservation and Forest Department.



The Ministry of the Environment exists in all regions of Estonia.

Responsibilites of the authorities

The Environmental Board is an executive authority—it is responsible for implementation of state's policies, programs and action plans in environmental issues, including forestry. Its tasks in the field of forestry include monitoring (habitats, hunting etc), issuing permits for felling (both in the protected areas and commercial forests), supervising reforestation activities and assessing which stands are the best suited for providing high-quality forest reproductive material. Environmental Inspectorate is supervising the use of the natural environment and its resources; is dealing



with environmental violations and since 2011 also carrying out investigations in criminal cases.

Very important in collecting and analysing data for the forestry is the Estonian Environmental Agency. The aim is to provide reliable environmental information for Estonian decision-makers as well as wider public and organisations both in Estonia and abroad. The Estonian Environmental Agency is keeping the database of the National Register for Accounting Forest Resources (Forest Register). This service is available for free for all.

The Land Board participates actively in the development and implementation of national land policy and provides the society with up-to-date land-related information. They are responsible for land cadaster maintenance; as well as coordinating and organizing land assessment, geodesy, cartography and geographical information, etc.

The majority of Estonia's public forests are managed by the State Forest Management Centre (FMC). That is a profit-making government institution – the only one of its kind in Estonia. Its status means that on one hand it has to earn income for the state through logging and selling of timber, while on the other it is charged with tasks that do not generate any direct revenue but which are useful for everyone: maintaining the unique natural landscape of forests, organising environmentally friendly forest work and

developing recreational possibilities that are free for all. Here are some figures that describe the status of this institution.

The FMC in figures 2015:

- Employees 726
- Turnover EUR 165,2 million
- Profit EUR 36,6 million
- Proprietary income to the state budget EUR 18,3 million
- Land tax 4,6 million EUR

The foundation Private Forest Centre is another non-profitable company, which main objective is to contribute to sustainable forest management on private forest land. Its activities include: arranging financial support for private forestry and private forest owners, applying for funding for forestry projects and programs and analyzing and publishing of information related to private forestry, cooperation between diferent institutions.

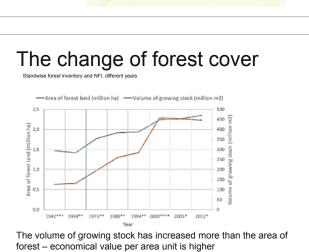
Forest Sector Development in Estonia

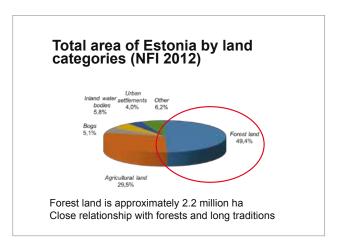
Marku Lamp, Deputy Secretary General, Ministry of the Environment of Estonia

The next presentation tackled the following topics:

- Basic forest data
- Forest sector development (forest policy and legislation, land reform)
- Public participation
- Nature conservation







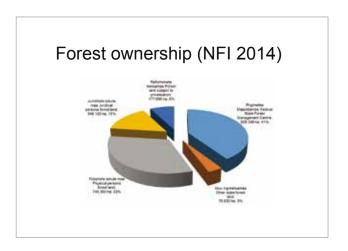
Using these before mentioned numbers, some conclusions can be drawn in Estonia. As it was said in the introduction, the forest area has increased during last 70 years about 1,5 times. But the existing stock volume has increased even more. This is due to two reasons: increase in forest land as well as timber accumulation in older stands because of harvesting less than increment rate. In addition, it is influenced by improved growth conditions: mainly warmer climate, nitrogene and carbon dioxide input, better silvicultural practices.

State forest has higher share of tree species with greater economical value. Probably one of reasons is active reforestation in the state forests after formation of the State Forest Management Centre. If forests are cut down, but not reforested with coniferous trees, then the succession phase will start with deciduous trees (mainly birch, poplar, elder and willow). These species are fast growing, but mostly do not have so high economic value as other species. To improve reforestation in private forests a support program has been set up.

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Distribution of forest land area by dominant tree species Private forest State fores





Forest ownership in figures. State owns more than million hectares, which forms 44% of the forest land in Estonia. Private sector, that includes both physical and juridical persons, owns another 48% of the forest area. 8% of the forest land is still subject to privatization (unclear property rights after the collapse of the Soviet Union) and will likely be privatized in the near future.

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Forest sector development

In the early 1990s the Estonian forest sector was largely organised on the basis of structures left over from the Soviet era. The adjustment to a market economy and new environmental standards proved to be slow and difficult, and it became apparent that a thorough overhaul of the sector was needed:

- · Reforming legislative basis for forest management
- · Setting goals for sustainable forest management
- Reforming of state forest administration
- Establishing of State Forest Management Center
- Establishing of support system for private forest owners

Key issues (in the first half of 1990ies):

A number of changes occurred in the forestry sector after Estonia regained independence in 1991. Most significantly, the forest lands which were privately owned during the former Estonian Republic (1918-1940) were returned to descendants of their historical owners. With the establishment and increase of private forest property came the growth of the timber industry.

The Soviet structure for forestry administration was no longer functional; the government and state forestry department could no longer control forestry effectively. The need for fundamental changes in forestry administration and policy became ever more apparent.

Approval of the Forest Policy led to the 1999 Forest Act, which fundamentally restructured public forestry administration. Both policy documents clearly state that the normative functions of state forests should be separated from their practical management.

Towards this end, the State Forest Management Center (RMK) was established in 1999.

During the Soviet era the forest sector was regulated by a single Forest act: Estonia had to follow a forest code that was basically a copy of what was used in all of the other republics of the Soviet Union. The first new Estonian Forest Act was approved by the Parliament in 1993. The new act had a significant impact on the management of private forests, it set out the conditions for the use of private forests. In 1993 was not foreseen the tremendous increase in fellings, so some illegal activities became possible in the forest.

In order to accelerate development in the forest sector and to improve the basis for legislative reform, the Ministry of the Environment decided, in early 1995, to launch the Estonian Forestry Development Programme, including the task of formulating a National Forest Policy. The objectives set for the policy formulation process were:

- to define the general objectives for the development of the forest sector; and
- to outline the action to be taken by the public sector in order to achieve these objectives.

The Estonian Parliament approved the first Estonian Forest Policy in 1997. The Forest Policy is underpinned by the notion that the Estonian forest sector is capable of providing material and social benefits, and that the use of this potential should be encouraged to the extent that other values and benefits are not lost or reduced.

The Forest Policy outlines the role and responsibilities of the state and public forest administration. One of the most important objectives set by the policy is support for private forestry. In order to achieve this, the Private Forest Centre Foundation was established in 1999 with the aim of contributing to more environmental friendly and efficient management of Estonian forests by improving the knowledge of land owners and administering state funding.

Implementation of the Forest Policy was deficient due to the lack of an integral plan of implementation measures. To coordinate the implementation of activities defined in the Forest Policy and the allocation of the required resources, the Ministry of the Environment began drafting a long-term Forestry Development Programme at the end of 1999.

The Estonian Forestry Development Programme until 2010 was approved by the "Riigikogu" (the Estonian parliament) in November 2002. It is based on the Sustainable Development Act and Forestry Act and defines the strategies that are essential for Estonian forestry and the activities for their implementation.

The process of drafting the forestry development programme for the next decade began in early 2009. It is based on the Forest Policy, the Estonian Environmental Strategy until 2030 and its action plan for 2007–2013. The principles of the programme are closely linked to the Nature Conservation Programme until 2020, which is being prepared simultaneously.

The responsibility for implementing the forest development programme and its action plan lies with the Ministry of the Environment. The process is open to the public and involves all relevant interest groups.

Land reform

Estonia regained its independence in 1991 and began restoring its economy, mainly based on private property. The process of returning land to the previous owners began and conditions were created also for the privatisation of forest land. There is still about 8% of unreformed land, which was not claimed by former owners and has not been sold in public auctions.

The Estonian Constitution states that all persons have the right to freely obtain information circulated for general use. All state and local government authorities and their officials are obliged to provide information on their work, with the exception of information whose disclosure is prohibited by law, and information which is intended for internal use only.

The Estonian Forest Policy and Forestry Develop-

ment Programme were both prepared in an open process involving all interested parties in the forest sector, including representatives of different administrative sectors, the private sector and a large number of other organisations, and private citizens. Cooperation continues in the implementation and follow-up and further development of the programme and Forest Act.

The governmental decree on environmental impact assessment requires public participation in environmental decision-making. This principle was also followed in the preparation of the Forestry Development Programme. This means that decision-makers present their decisions and reasons to the public through the media, paying special attention to the comments made by the public and to the extent that they are considered. Complains and claims made during the process of environmental impact assessment must be submitted to the competent authority, which is responsible for reporting back to applicants about measures taken to solve the raised problem.

Forest Development Program 2020

The main objective of the development programme is to ensure the viability and productivity and diverse and efficient use of forests.

- Sub-objective 1. wood as a renewable natural resource should be used in timber and energy industries as much as is long term increment
- Sub-objective 2. forest renewal work should be done in at least half of the regeneration felling areas to sustain forest productivity
- Sub-objective 3. to maintain a good status of endangered species and populations inherent to Estonia at least 10% of forest area should be under strict protection and the representativeness of strictly protected forests should be improved

Forest owner associations

Besides governmental institutions non-governmental institutions are established to help private owners. These are called Forest Owner Associations and they bring different owners together to simplify paper work and timber selling as well as some costly management tasks (e.g. buying trees for planting). Although these associations are independent from the state and the local government, their establishment is encouraged by the state. For example, forest associations can apply for the support (once a year) for certain activites and operational costs. To be recognized a Forest Owner Association must be:

- Non-governmental and non-profitable
- Not gaining profit, but work in the interests of private forest owners and according to their needs



- Involve different owners: from non-commercial and farm forest owners up to commercial forest companies
- Helping private owners advising and councelling, organising meetings, assistance in applying for supports, joint economic activities, etc..

Summary

Forest reforms involved economic, administrative and ownership changes.

The economic changes were:

- changes in the functions of the forest administration led to the development of private services
- no fixed prices for timber and other products
- economic activities (ranging from forest planting to sale of logs) became available in public forests.

The outcome is that since 1992, the management of public forests has become four times more efficient, and the forest industry has developed to be one of the most important industries.

Administrative changes included:

- Economic activities were separated from supervision functions
- The responsibility of a manager of public forests is restricted to this property only
- special institutions were established to provide extension services and exercise supervision
- and the state monopoly on forest inventory and management was ended.

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These changes resulted in improved cost effectiveness, and better supervision and control to prevent forest crimes. Changes in ownership led to 60% of forests being passed into private ownership and the privatization of forest industries. This resulted in increased harvesting in private forests and fast development of forest industries.

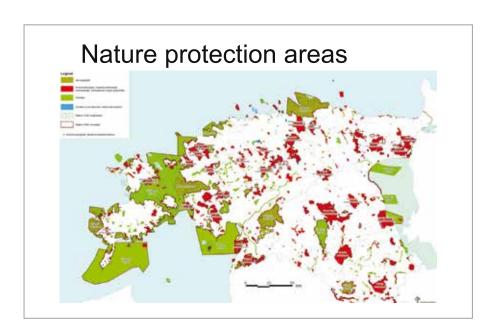
Forest Strategy 2013

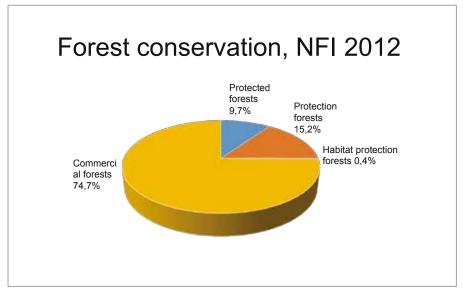
The new Forest Strategy identifies the key principles needed to strengthen sustainable forest management and improve competitiveness and job creation, in particular in rural areas, while ensuring forest protection and delivery of ecosystem services. The Strategy also specifies how the EU wishes to implement forest-related policies.

Forestry and nature conservation

Nature conservation is regulated by national legal instruments, which are in compliance with several international and Eu provisons. Main legal documents are:

- Nature Conservation Law, Nature Conservation Development Plan
- EU Directives including birds directive, habitats directive and zoos directive
- EU also regulates wildlife trade and invasive alien species
- Convention on Biological Diversity, CITES, RAMSAR-Convention.





Commercial forests form most of the forest area — about 75%. Besides this Estonia has about 25% forest area, that have restrictions in forest management. Protection areas involve both private and state forests, but are planned preferably state forests.

Distribution of protected forest area by reasons of protection, NFI 2012

Reason for protection	Area		are of different protection categories (%)			
	(1000 ha)	from total protected area	in SFMC** forests	in other forests		
Strict nature reserves and special management zones	160,6	28,4	39,9	13,7		
Limited management zones	125,5	22,2	16,3	29,7		
Species protection site special management zones	27,7	4,9	5,1	4,7		
Species protection site limited management zones	41,1	7,3	10,7	2,9		
Special conservation areas	51,4	9,1	8,2	10,2		
Water protection forests	103,6	18,3	8,1	31,4		
Other reasons	55,9	9,9	11,8	7,4		
Total protected forest area	565.8	100.0				

^{**} SFMC - State Forest Management Centre

There are different protection types in use, depending on the reasons of the protection.

There are also different restrictions to forest management in use, starting from absolute ban (strictly protected forests) to small restrictions.

Strictly protected forests form slightly more than 10% of the forest area as it was set out in the Forestry Development Program 2020.

Hunting in Estonia

Starting point: Changes in using land

- Privatization/Returning land to previous owners
- · Market economy and economical growth
- Unused lands were taken into use
- Common Agricultural Policy and subsidies.

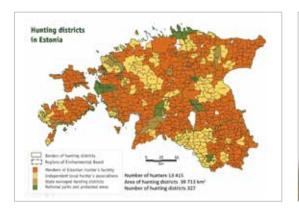
Main task of Hunting Act:

- Maintain the favorable status of game polulations
- Maintain the (low-cost) possibility to hunt for hunters
- Maintain large hunting districts
- Create possibilities for land owners to set their term for using their land.

Changes in the Hunting act from 2013

State formulates hunting districts for hunting big game in areas larger than 5000 ha. Hunting district is given into use with the right to hunt and the obligation to monitor all game within the boundaries of the hunting district. Land owner has the right to participate in the process of giving out hunting district or to launch the process of changing the user of hunting district. The user of the hunting district must have a contract with land owners to use their land for hunting purposes.

Agreement of preventing or compensating game damages is set in the contracts. If no agreement is reached and hunting is not prohibited, land owner can charge for cloven-hoofed game damages in the maximum amount of 100 €/ha. In order to prevent small game damages land owners have the right to hunt or to organize hunt for small game in their own land. State still compensates for large carnivore damages (i.e. wolf). Other damage compensation is hunter's responsibility, including wild boar.



	2010	2011	2012	2013	2014	2015
Elk/Moose	4 255	4 730	5 126	6 532	5815	6873
Wild boar	17 028	18 159	24 042	20 885	24909	32580
Red deer	497	693	829	1 047	1044	1252
Roe deer	5 075	1 211	1 548	2 884	4072	6264
Lynx	181	100	87	16	2	19
Wolf	130	151	80	78	38	103
Brown bear	57	53	55	38	36	49
Wild ducks	14 158	11 905	12 565	9 576	9786	8903
European Beaver	6 592	6 210	5 700	5 572	6557	6678
W					· Ameli	walne



Data Handling and Control in Forest Management

Mati Valgepea, Senior Officer, Forest Department

Main aspects of the presentation of Mr. Valgepea were:

- Forest inventories (NFI, standwise forest inventory)
- Forest notifications
- Related information and communications technology (ICT) solution.

Task set in Forest Act

§ 6. Duties of state in forestry

- (1) The duties of the state in forestry include the following:
- 1) the directing of forestry and the drafting of a development plan of a field covering forestry and legislation regulating forestry for this purpose;
- 2) ensuring the good state of the forest;
- 3) the accounting of forest resources;
- 4) the supporting of private forestry;
- 5) the administration and management of the state forest;
- 6) the organisation of state supervision;
- 7) ensuring the protection of biological diversity of the forest.

Methods of forest inventory

1. NFI - National Forest Inventory

Data used:

- Forest resource statistic at state level
- · Monitoring forest resource changes
- Mid- and long-term forecasts
- Calculating forest carbon balance.

2. Standwise forest inventory on subcompartment level

Data used:

- · Compilation of forest management plans (mainly)
- Forest resource statistic at state level
- Mid- and long-term forecasts
- All data entered into Forest Register.

Forest Act § 11. Forest survey

(41) A forest inventory will be taken as a total area forest survey based on cadastral or management units or using the statistical inventory method. The forest inventory data, except the data obtained by the statistical inventory method, will be valid for ten years as of entry thereof in the state register of forest resource along with the data of the forest map.

NFI - National Forest Inventory

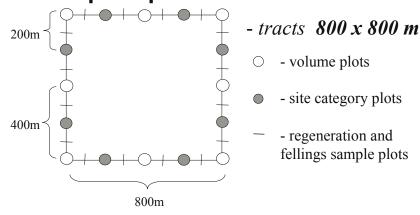
The first National Forest Inventory covering the whole country started in 1999 under the responsibility of the Estonian Environment Agency.

Survey design:

- annual research
- systematic sampling (without prestratification)
- the network of clustered sample plots covers the whole country
- three types of circular fixed-radius sample plots
 - volume sample plots
 - site category sample plots
 - regeneration & fellings sample plots
- Nature conservation.

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Sample plots & Tracts

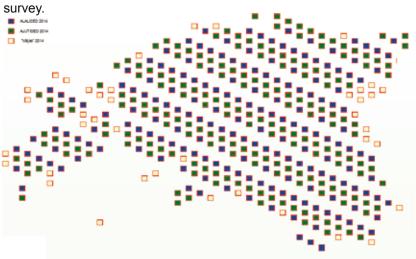


All the permanent sample plots are re-measured in every 5 years.

Ca 5700 sample plots (3000 on forest land) on 360 tracts are measured, 40 000 trees calipered and 4000 model trees measured in 2014-2018 yearly. More than 150 indicators are registered in sample plots.

NFI — tract Network in 2014 Tract network is for 5 years on 5X5 km grid

Sample plots are clustered into tracts to increase the efficiency of the



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NFI - Main objective

The main objective of the NFI is to give a description of forests, but NFI also gives information about, e.g.

- the distribution of land by land use classes
- the afforestation
- · growing stock of non-forest land
- biodiversity indicators, etc..

The results of the Estonian NFI are presented in the form of tables and charts for the whole country (separately for the Estonian State Forest Management Centre and for other owners' forests). All estimates include relative error limits.

NFI - Results

Figures, tables and charts or analysis result in:

- Estonian Statistical Yearbook of Forestry "Mets"
- UNFCCC GHG inventory, LULUCF sector national reports
- UNFAO Global Forest Resource Assessment (GFRA)
- MCPFE national data reporting
- Estonian Statistical Office national statistics
- EC European Forest Data Centre (EFDAC)
- ENFIN (European National Forest Inventories Network)
- COST Action FP1001 "USEWOOD" 2011–2014 and other international and national projects
- Input to Estonian Forestry Development Plan and other strategic policy frameworks.

SFI - Standwise Forest Inventory

Aim:

- Stated in Forest Act §11. Forest survey
- (1) Forest survey is carried out with an aim to receive data on the condition of forest and the volume of growing stock, advise forest owners and plan long-term forest management activities.

Importance of inventory data as precondition for forest management:

Forest Act § 11. Forest survey

(42) The inventory data in force is mandatory for a regeneration cutting, thinning and selective cutting. The aforementioned does not apply to an immovable where the area of the forest is below two hectares or, if the immovable belongs to a natural person, below five hectares.

- (43) A forest management plan will be prepared for a forest owner together with forest inventory, unless the forest owner does not wish it.
- (5) The following costs of forest survey incurred by the state will be covered from the state budget: the accounting of forest resource.

Method

The method of standwise forest inventories is eyedraft method (visual assessment). Measuring instruments are used for the specification of the collected data.

During the forest inventory process the surveyor:

- forms (delineates) subcompartments average size of subcompartment
- in state forest is 18 ha, in private forest 1,0 ha;
- compiles stand description for every subcompartment
- registers indicators of key habitats
- registers forest damages
- plans the forest management activities (cuttings, regeneration...).

Activities regulated by Forest Survey Guidelines

Licenced activity:

Since May 2004 forest inventory works can do only state or private enterprises which have a professional license.

Forest Act § 12. License obligation for forest survey activities

A person or profit-making state agency must hold a professional license for carrying out forest survey activities.

Company has to provide:

- enough technical equipment for carrying out forest survey activities
- carries out forest survey activities with a certified forest surveyor
- accurate inventory data (error limits are set);
- fulfill the requirements of Forest Survey Guidelines on planning forest management works.

There are 33 institutions with license including stateprofit organisation and Estonian University of Life Sciences.

Forest Survey Certificate (on personal level)

People working on forest inventory and forest management planning (surveyors) have to pass theoretical examination and to perform practical work to obtain certificate.

- Theory exam: 30 questions with selection answers.
- Practical test work: inventory of 15 subcompartment (stands height, diameter, age, composition, basal area and site type being regitered on each site).
- 236 persons have received the certificate (66 work for State Forest Management Centre).

Parties involved:

- Forest owners: order the forest inventory works (management plan), can claim for state support (subsidy) to cover costs, receive management plan as a result
- Licensed companies (certified surveyors): perform inventory activities and pass data to Forest Register (Estonian Environment Agency), compile forest management plan
- Forest Department of the Estonian Environment Agency: issues the forest management planning licenses and certificates, checks the quality of forest inventory data and holds the Forest Register
- Private Forest Centre: administering state support, private forest consultants and Forest Owners' Associations help forest owners to claim the subsidies
- Forest Department of the Ministry of Environment: responsible for legislation related to forestry (forest management planning).

Forest register

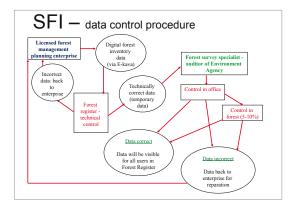
Forest Act § 9. State register for accounting of forest resource

(1) The state maintains records of the location, area, growing stock, state, use and restrictions of use of forest in a state register for the accounting of forest resource.

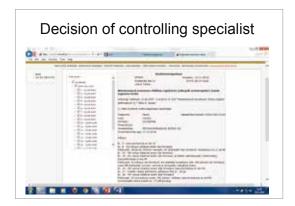
Register includes (all data are geo-reference i.e. GIS database):

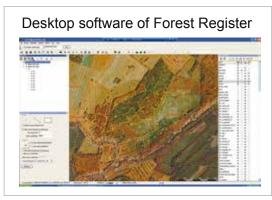
- Forest inventory data
- Forest notifications
- Forest damage and reforestation inventory reports
- Other fieldworks carried out by state institutions.

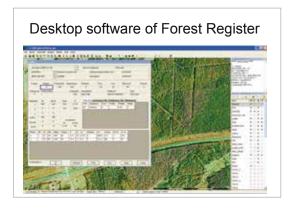
Desktop software of forest register is a tool for state forest officers (software installed in about 300 computers). Ca 1,9 million hectares of forest land (85% of all Estonian forest) are entered into forest register.

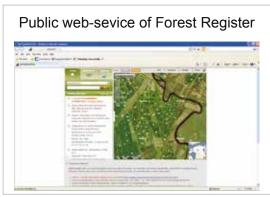












Forest notification

Forest notification is a precondition for felling and forest damage reporting.

Forest Act § 41. Forest notification:

(1) The forest owner or the representative of the owner (hereinafter submitter) must submit a forest notification to the Environmental Board:

- 1) concerning planned cuttings, except cleaning
- 2) concerning serious forest damage.

(14) A forest owner may cut, without submitting a forest notification or without registering with the state register of the forest resource, up to 20 solid cubic metres of wood per immovable per year.

Notification may be passed to the Environmental Board by mail, digitally signed form (e-mail) or forest notification web-service.

Control

The Environmental Board will verify in 15 days the compliance of the cutting planned:

- on the basis of a due forest notification with the requirements of legislation
- and valid inventory data in the events provided by law
- or the actual data (field assessment) about the condition, age, basal are and resources of the forest if the inventory data does not reflect the actual situation.

If the planned activity does not comply with the requirements of legislation, the Environmental Board will have the right to ban the activity, stating the reasons of the ban in writing and making recommendations for bringing the activity into compliance with legislation.

A forest owner may perform cutting after the forest notification bearing a permitting notation has been received from the Environmental Board and do so within 12 months. If forest owner has made in forest register then owner may register notification for the regeneration fellings and thinnings in Forest Notification Web-service i.e. simplified procedure without human intervention and automated control to check the compliance with legislation. Not possible to use for forest lands under protection. Upon receipt of a forest notification about forest damage, the Environmental Board will assess the need for a forest protection expert assessment. The results of the expert assessment will be communicated to the forest owner within 30 days after the receipt of the forest notification.

Forest notification



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Forest register ICT solution

Includes data of:

- Standwise forest inventory
- Forest notifications
- Forest damage expert assessments
- Reforestation area expert assessments
- Other fieldworks.

Forestry data is supplemented with (cross-usage with other datasets):

- Cadastral map
- Base maps
- Ortophotos
- Protected areas
- Access to Land Title Book.

Administered by Environment Agency, Environment Board and IT Centre of the Ministry of Environment.

Includes:

- Desktop software for forest and nature protection officials (ca 300 users)
- Web-application "E-kava" for uploading forest inventory data and controlling by auditors
- Public web-service of Forest register, available for all interested parties (part of the inventory data hidden and accessible to owners and officials only); up to 20 000 visits a day. Main reference point in communication
- Web-service "e-metsateatis" to submit the on-line notifications.

Development works started in year 1999. Now the third generation is in development with the aim to continue with web-based solutions and maximum cross-usage of different data-sources.

Private Forestry in Estonia

Jaanus Aun, Foundation Private Forest Centre, Member of the board

History - land ownership

- Before 1919 more than a half of land belonged to the manors, including almost all of the forestland.
- 1919 1920 rapid and radical land reform: the land of the manors was given to small farms.
- 1940 expropriation of land by Soviet power
- During a Soviet time all land belonged to the state, current private forests belonged to the collective farms
- Forest cover in Estonia before 1940 about 32%.

Land reform

- 1989 Law on Farms right to use land mainly for agricultural purposes.
- 1991 Law on Ownership Reform and on Land Reform.
- § Principles of land reform:
 - From state ownership to private ownership
 - Compensate the losses of former owners
 - To avoid new inequity.

Land reform in practise

Restitution:

The land was given for free to the former owners or to their heirs. The land under the houses used by new owners was not given back.

Privatisation:

The land, that was not claimed back was privatised i.e. sold by the state.

Privatisation of forest land

How can be privatised?

Different models have been used:

- Selling to those who have buildings close to the forest
- Selling to local small-scale farmers
- Selling to those who already have forest
- Giving pre-emption right to the border neighbours

Different favourable terms have been used:

- Payment in privatization vouchers
- Paying only 10% of the value of land, rest by instalments during 20 – 50 years
- Abolishing the payment obligation in case of birth of children
- Only few restrictions for managing the privatised land
- No restrictions for selling the privatised land

Privatisation -,, darker side":

- Often the newly privatised land was sold
- State faced problems with getting the payments

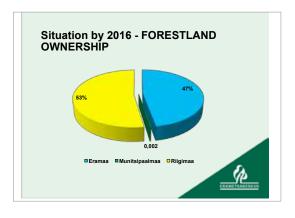
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- Intensive cuttings (sometimes illegal), but not so much silvicultural activities in the forests
- States' response:
 - Free land located close to state forests have been handed over to state
 - Other land sold in public auctions, no preferential terms used (besides neighbour's preemption rights)

Privatisation - "brighter side"

- additional assets for local entrepreneurs
- Intensive cuttings → wood to the market → rapid growth of wood industry







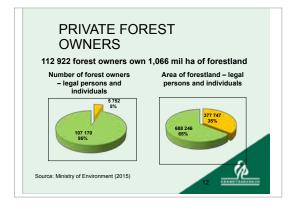
Ownership developments

Developments after land reform:

Very active real estate market – many owners have sold their land due to:

- 1) lack of forestry knowledge
- 2) tax laws, that have favoured selling of land not managing of resources.

Private forest owners

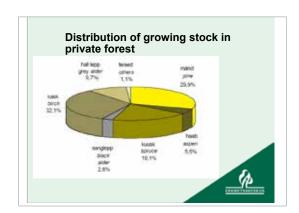


Average size of property:

- Legal persons 65,7 ha
- Individuals 6,4 ha
- 44,4 % of forest owners own less than 2 ha of forestland



- Only 0,5% own more than 100 ha
- Ordinary forest owner: living far from property and having no forestry education.





Challenges for private forestry

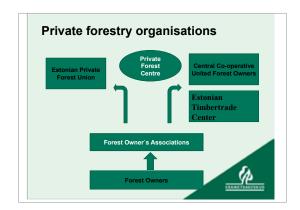
Forestry Development Plan:

- To increase overall felling volume in Estonia (max. is 15 mio m3 a year)
- To increase reforestation in private forests (40% of clear-cut areas have to be regenerated)
- Increase area of precommercial thinnings/cleanings and thinnings
- In summary: we have to do more in our forests!

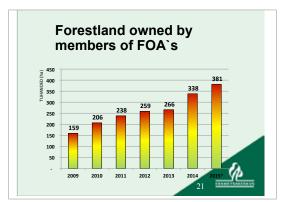
Measures to motivate forest owners

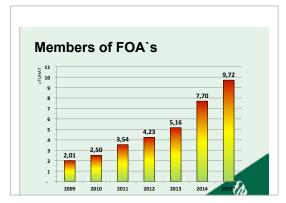
Forest owner makes decisions, need to motivate them:

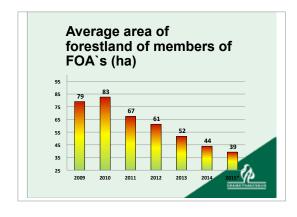
- Tax regulations
- Forestry legislation less bureaucracy
- A well-functioning support system













Private Forest Centre

- Foundation under the Ministry of Environment.
- Private legal body, but financed by the state.
- People: 28 (+12 local controllers)
- Aim: Development of private forestry
- Tasks:
 - Administration of subsidies to private forest owners
 - Development activities for private forestry (supporting of FOA's, advisory system, training courses, information materials, international projects, etc.)

In conclusion

Estonia is rich of forests, but

- more forest management works have to be done in private forests and
- activating small forest owners is a key issue to have better forests in the future

Control and Supervision Procedures

Uno Luht, Head of Nature Protection Department, Environmental Inspectorate

Basic data

- Environmental Inspectorate is the main environmental supervisor in Estonia
- Supervision in all areas of environmental protection (around 20 supervision sectors)
- Structure: centre located in Tallinn and 15 county offices
- Number of employees 182 (as of June 1, 2016).

Classification of our supervision activities

- Environmental protection supervision in the field of water and ground water protection, air pollution, waste management, use of mineral resources, radiation supervision, etc.
- Nature conservation forests, hunting, traditional nature conservation, CITES, etc.
- Fisheries protection all fish-related areas.

Planning

 Supervision based on citizens complaints and planned supervision

- For receiving citizens complaints we have special twenty-four-hour hotline 1313
- Complaints are received also by writing and e-mail
- All complaints will be registered in database and resolving a complaints is traceable
- Complaints, requiring fast intervention, will send to inspector immediately.

Forest supervision

- Planning of supervision based on intensity of forest management
- Our purpose is to control 1% of the total surface of the cutting area
- The main focus is on the shelterwood (regeneration) cutting, improvement cutting (thinning) and sanitary cutting.

Forest inspection procedure

At first, using a state forest register inspector checks for

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- forest notification
- and he forest inventory data
- Cutting area and cutting type must conform to the forest notification
- Cutting type must conform to the Forest Act and to the rules of the forest management
- Inspektor checks an identity document of a person or the representative of a legal person legally entitled to perform cutting in a forest
- Every person or the representative of a legal person performing cutting in a forest must to carry an identity document and must verify the existence of the cutting right or the legality of the possession of timber
- Also inspector checks timber sales documents and timber transporting documents
- The forest owner or timber owner must have specified contract for upon transfer of the cutting right or upon transfer timber
- The transporter of timber must carry a physical conveyance document or have an electronic conveyance document certifying the assortment, quantity and ownership of timber
- All inspection activities recorded in the database
- If necessary, inspector must measure and determine the cutting area, cutting volume, stand stock, basal area and the crop density in a stand after cutting
- If detected violation of forest management requirements, inspector begins misdemeanor proceedings
- If cutting type has made does not comply with the forest inventory data and with Forest Act rules, this cutting may result damage caused to environment
- If damage caused to environment is bigger then 3900 euros, initiated criminal proceedings

Only the supervision does not ensure compliance with the rules. There are several reasons, why number of the logging rules violations decreases:

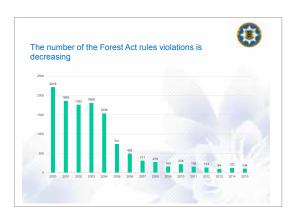
- impact of laws and rules all requirements are working together and supporting each other
- forest owners and forest enterprises are law-abiding and do not violate the rules
- forest owners have the opportunity to get free consulting
- forest land market has stabilized
- timber prices and tax rates are not conducive to logging
- forest management requirements are easy to control
- good technical and IT support for supervision.

Example: How the Forest Act Works

- If the owner of forest has the logging plans, he must submit a forest notification
- Forest notification is document, certifying the existence of the cutting right and the legality of the possession of timber
- If forest owner sells cutting right, he must prove the existence of the cutting right to the person, who acquires the right and the latter must verify it
- If forest owner or timber owner transfer or sells timber, he must prove the legality of the possession of timber to the person, who acquires the timber and the latter must verify it
- The purchasing or sale of cutting rights or timber requires a specified written contract
- In transporting of the timber transporter must carry a conveyance document certifying the assortment, quantity and ownership of timber
- All contracts and transporting documents must storage for seven years.

Summary

The contracts with cutting right or with timber are traceable. No one can give the forest for cutting, selling or transporting timber without forest notification. Anyone can view a public forest register site and make sure, is there a forest notification for the cutting or not.













City Tour Tallinn

Just about 1000 years ago, when the Vikings ruled the Northern seas of Europe a little castle was built near today's Tallinn at the suburban Iru. If they were the first conquers of Tallinn is not to know but 1219 a Danish king named Valdemar II landed in Estonia and through history many followers complied. After the Danes came the Germans then the Swedes (1561-1721) and later on the Russians/Soviets.

Perhaps it was for the beauty of the town and the strategic location the rulers came. Whatsoever it should last until 1918 when Estonia became independent for a short time that lasted until 1940 when Soviet troops occupied Estonia. However on August 20th 1991 Estonia declared its independence and from that day this exiting city is sparkling with optimism and attitude. This city is a thrill to discover and has a beautiful atmosphere.









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3 ESTONIAN FORESTS

	Time	Activities
2016	06:30 08:00	Breakfast and check out Departure to Estonian Forests - Management practices; Timber
	12:30	transportation and control; Sawmill, etc. Lunch with foresters
Tuesday, August 23,	18:00 21:00	Travel with bus from excursion side (in the South of Estonia) to Riga Dinner on the way to Riga
Tue	00:00	Arrival; Check-in hotel

OGRAMME







ESTONIAN FORESTS

Field Visit to a Forest in South Estonia



The next day the group visited a state forest in Sommerpalu, Voru County in the South of Estonia. Mr. Tauno Pino guided this visit. He first described how they select and sort trees, how they measure trees in terms of hight, volume, etc. and how they cut them. The cutting by a special machine was demonstrated. The harvesting machine is directed by a computer and knows to measure every 10 cm of the trunk. From the forest office one can follow online what happens on the plot.

In the age of 80 to 90 years the tree is ready to cut, depending on the species. Mr. Tauno explained that during Soviet times it was obligatory to leave 3% of the trees per ha, even in the case of clear cut.

Today, they still keep this obligation and update their inventory every 10 years.

With the inventory they have all necessary data to decide, when, what and how many trees to cut. Before cutting the forester sends a notification to the Environmental Board. With this he makes the request for the allowance to cut. Clear cut is allowed by law up to 5 ha, in terms of broad leaf trees up to 7 ha. A homogeneous plot can be cut up to 10 ha.

Question

If you do selected cutting, how do you decide?

The better tree has to be left in order to increase the value of the stand. The driver of the harvesting machine is a forest professional and trained to do the selection of which tree to cut and which one to leave.

Looking at the soil, Mr. Tauno explained, that there is a thin organic layer followed by very sandy layer of soil. That is why the danger of soil compactation is rather low by heavy machinery. There is a law that you are not allowed to damage the soil more than 30%. This gives clear advice when to cut, e.g. on sensible soil only in winter, when the soil is frozen.

The volume of cut trees per year is about 1.2 mio. solid cubic meter. The sawmills located in the south of Estonia buy all cut timber. First, the State Forest has an auction with interested buyers and once the price







is set, they start cutting. The buyer gives the parameter concerning length, size, etc.. Every evening, the forester informes the office of State Forest Management Center on how much was cut during the day.

Question

What if the buyer suddenly doesn't want to take all the timber?

If there is a contract, the buyer doesn't have any option. Every five years there is a new procurement for cutting machines. Extra timber is sold via auctions twice a year. In case of small amounts up to 20 qm private people can buy the timber. There is a minimum price of 70€ per qm for high quality timber. If the driver of the harvesting machine cuts the log, he starts with the most valuable part and then makes a "lower price selection". When they bring out the log they separate directly what gows to which sawmill.

What is the net benefit? Up to 60 €.

How exact is the cutting on the log?

Since we are working on a high standard the cut is very exact. The driver first cuts three trees to calibrate the machine. Additionally, the operator does it manually in order to correct the settings if needed. Only afterwards harvesting operation can start.

The operator is payed by the Forest Management Center according to the volume he cuts. All services on the plot are done by external companies. Every truck needs to have transport papers with information on volume, kind of timber, where was it cut, etc.. One truck is only allowed to transport up to 40 qm.

Recently, Estonia started to use an electronical service to measure timber. The application is called "Timbeter", developed by an Estonian start up of software developers. Timbeter is an easy to use timber measurement tool. One simply has to take a photo with an app of the timber whether in a pile, on a truck or in a container.

Then, Timbeter determines the number of logs, volume and diameter of each log. The app allows to filter the diameters to see how many logs are in the specific range. Every pile has geotag that makes tracking of the timber origin easier.

Every measurement is stored in a cloud providing a real-time overview of measurements related to specie and quality. Timbeter enables the user to re-measure every pile in the web in case it is needed to.











Visit of the Sawmill Toftan

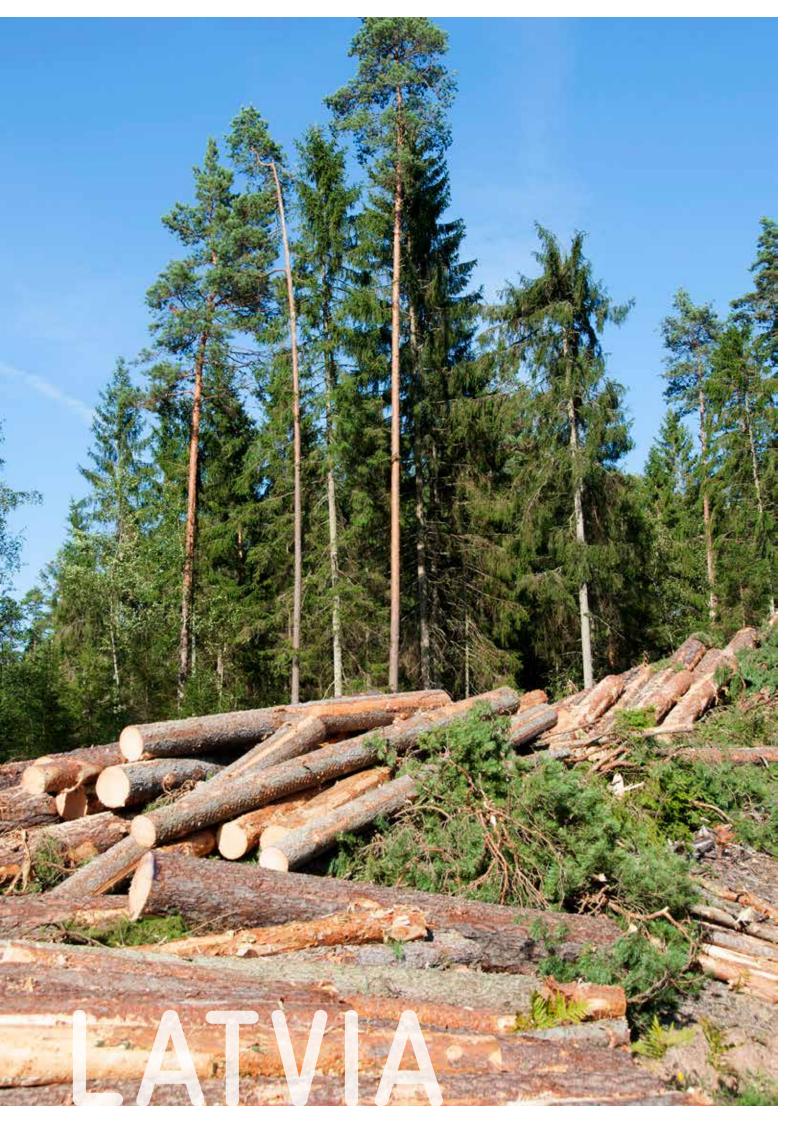
After lunch the group visited the sawmill AS Toftan. The company is a member of the Estonian Forest and Wood Industries Association. The sawmill has their own forest property, Toftani Metsad, which is one of the biggest South-Estonian private forest owners. AS Toftan was founded in 1995. In this year, second hand sawmilling equipment was brought from Toftan village, Middle Sweden. Throughout the years the sawmill, initially producing 35000 m3, has developed to one of the biggest sawmills in Estonia and in the Baltic region. Almost 200.000 m3 of sawn timber was produced in 2012.

Skills of the team and right investments have formed a unique technological setup providing flexibility of products and batch sizes combined with high yield and productivity.

Toftan is buying conifer logs such as pine and spruce. The logs are individually, electronically measured on a log sorting line. Payment is done according to measurement results. Prices vary according to species, diameters, lengths and grades.







GENERAL INFORMATION ABOUT THE FOREST SECTOR OF LATVIA

compiled from: A Policy and Institutional Analysis of Forest Sector Reforms in Central and Eastern Europe, M. Sotirov, GIZ Working Paper 67/2014

Percentage of forest cover of the country

Latvia's forests occupy an area of total ca. 3.5 million ha which corresponds to forest cover of 52% of the national territory. The most common tree species are scots pine, spruce and birch. 75% of Latvian forests are commercially used (ca. 2.7 million ha), with the remaining 25% enjoying some kind of protection status (e.g. biodiversity, water, soil).

Forest ownership: percentage of state, communal and private owned forest

In 2005, the distribution of the total forest area according to type of property was as follows:

Forest ownership in Latvia				
Type of ownership	Area, ha	% of total forest area		
State-owned forests	1.781.000	50.7%		
Municipal forests (local governments)	90.000	3.3%		
Private forests Individuals Private business entities and institutions	1.500.000 1.365.000 147.000	45.9% 41.4% 4.5%		
Other types of ownership	3.000	0.1%		

Source: FAO 2010b

There are about 150.000 private forest owners who own ca. 8.5 ha average forest area.

Institutional framework: role of state, stateowned enterprises, private enterprises

Regulatory, supervision and law enforcement functions, and economic management functions in the forest sector in Latvia are separated. The regulatory and supervision functions are vested with specialized forest departments of the Ministry of Agriculture. The Forest Policy Department in the Ministry of Agriculture formulates the national forest policy and drafts forest legislation. The State Forest Service which is subordinated to the Forest Policy Department carries out supervision and law enforcement in all for-

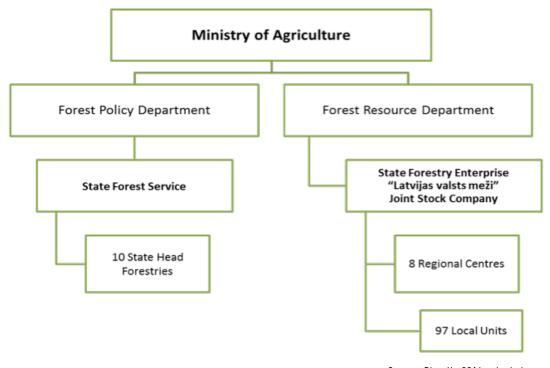
ests regardless ownership type. The state as a forest owner also performs economic management functions which are carried out by the State Forestry Enterprise "Latvijas valsts meži" Joint Stock Company. The State Forestry Enterprise with its eight regional divisions and 97 local forest units is responsible for economic management of public forests and subordinated to the Forest Resource Department of the Ministry of Agriculture (Figure 3). The main nationwide associations representing the interests of private enterprises and private forest owners are the Latvian Forest Owners Association and the Latvian Forest Industry Federation (among others). The Latvian Fund for Nature, among others, represents several environmental and nature protection interests. There are organisations for other interest groups, e.g. for hunters. The forest sector in Latvia is a net exporter of timber (sawn wood and round wood) and timber products (furniture) and as such the largest exporting industry of the country. The contribution of the forest sector (forestry and forest industry) to the gross domestic product in the country was 12% in 2006 (Birgelis 2007, 2014; MCPFE 2007a, 2010).

Government authorities

The Ministry of Agriculture is responsible for regulatory functions in terms of formulation of forest policy and preparation of forest legislation. The two forestry departments, the Forest Policy Department and the Forest Resource Department are subordinated to the Ministry of Agriculture. The State Forest Service with its 26 regional and 197 local entities (the number of territorial entities corresponds to the administrative division of the country) is responsible for supervision, law enforcement and regulation of forest management and utilization in forests of all types of ownership. The State Forest Service is also responsible for monitoring, maintenance of forest databank, forest fire control and research activities. Forest ranger districts and a forest research institute are subordinated to the State Forest Service (Forest Law 2000; MCPFE 2007a, 2010; Acti & Kore 2006).

State owned forestry enterprises

The State Forestry Enterprise is a state-owned company responsible for the economic management of state-owned forests belonging to the Ministry of Agri-



Source: Birgelis 2014, adapted

culture. The main economic activities of the State Forestry Enterprise include key forestry operations and business activities such as forest management, production of seedlings and seeds, production and sale of timber products, hunting and rendering of recreation services and real estate management. Forestry activities and economic profitability of the State Forestry Enterprise have grown every year. Main income source for the State Forestry Enterprise is the production, use and sale of timber. Other income sources are the production of seedlings and plants, hunting and game management and some of the recreational services offered. Most of the recreational sites provided by the State Forestry Enterprise are free of charge (Forest Law 2000; Latvijas valsts meži 2012). The State Forestry Enterprise's turnover in 2013 amounted to 260 million EUR which is a considerable increase compared to the turnover of 24 million EUR in 2000. In 2013, the company paid 71 million EUR to the state budget as a fee for the use of state-owned forest capital and assets, invested 40 million EUR and retained a net profit after tax in the amount of 60 million EUR. The State Forestry Enterprise delivers saw-logs, veneer logs, industrial wood, pulpwood, and fuel-wood to its customers. Saw-logs and veneer logs are supplied to woodworking enterprises in Latvia. The state-owned company supplies also fuel chips to produce renewable energy in Latvia and abroad. The company produces forest tree seeds and the forest and

ornamentals planting stock and offers at its recreational services at its facilities, especially hunting services for local as well as foreign customers. The company offers and provides mineral resources such as sand, gravel, as well as peat for excavation. The State Forestry Enterprise outsources certain economic management activities to 850 private companies as service providers on contractual basis. These include services such as forest management, timber harvesting and transport, construction of forest roads. The Ministry of Agriculture is the 100% shareholder of the State Forestry Enterprise. The meeting of the shareholders is represented by the state secretary of the Ministry of Agriculture. The highest executive body of the state-owned company is the Management Board composed of one chairman and three members. It controls the company's affairs and is responsible for economic activities and the bookkeeping. Subordinated to the board is the President followed by the Corporate Management and various departments. As every other forest owner, the State Forestry Enterprise is controlled by the State Forest Service in terms of forest law enforcement.

Experience with forest sector reforms

The forest sector in Latvia went through two waves of institutional reforms. First, between 1990 and 1993, the Latvian forestry sector was regulated by the Ministry of Forestry where forest management was shifted

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from the Forest Production Association "Latvijas Mezs" and placed onto the newly established Ministry of Forestry with 35 regional State Forest Directorates. In 1993, the Ministry of Forestry was eliminated and the State Forest Service was created under the Ministry of Agriculture. In 1997, the formulation of forest policy and law was transferred to a newly established Forestry Department under the Ministry of Agriculture. In this transformation period between 1991 and 1998, the forest sector dealt with issues of land reforms, transition towards market economy, privatization of state-owned forest industry and companies, setting favourable conditions for export of forest production, development of private forestry, inefficient management of state forests, fixed prices and export custom tax. The second wave of institutional reform took place between 1998 and 2000. The main goal and first achievement of the reform process was the separation between the state's economic management functions and regulatory, supervisory and support functions. Policy baselines of the forest sector development were developed by a working group in cooperation with the experts and consultants of FAO taking into account international commitments and the Forest Europe/MCPFE participatory approach to National Forest Programs in Europe. In addition, the forest sector policy actors considered experiences from other countries, mainly through international development cooperation projects and exchange projects funded by the EU. The formulation of national forest and related sectors' programme, according to the Forest Europe/MCPFE principles, started in 2003 just after the second institutional reform had been completed. The implementation of forest policies and programmes is periodically evaluated (Birgelis 2007; MCPFE 2007a, 2010).



4 MINISTRY OF AGRICULTURE OF THE REPUBLIC OF LATVIA

Activities Time Breakfast 08:00 - 9:0009:00 - 13:00 Meetings with: Forest Policy Department; Forest Resource Department Wednesday, August 24, 2016 13:00 - 14:00 Lunch in the Ministry's restaurant 14:00 - 14:30 After lunch walking to State Forest Service 14:30 - 17:00 State Forest Service 17:15 - 19:00 Guided city tour 19:00 Leisure time and individual dinner

DAILYOGRAMME

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MINISTRY OF AGRICULTURE OF THE REPUBLIC OF LATVIA

Welcome of the Georgian Delegation

Arvids Ozols, Director of Forest Department



The director of the Forest Department at the Ministry of Agriculture welcomed the Georgian delegation. He underlined the importance of sharing experiences on both sides because since the independency of Latvia there are substancial changes in legislatory

and forest policy. "We are always trying to learn, to do, and to learn from doing", said Mr. Ozols in his welcome speech.

Looking back at the first half of the 90ies, Mr. Ozols mentioned, that it was important to establish different interest groups in forestry such as forest owner associations, etc.. This made it possible to start in 1996 with the Latvian forest policy. Members from state and private side were sitting at the same table discussing key aspects of forest policy. In 1998, the Latvian forest policy served as a basis for all reforms like a new legislation, new forest law and generally a new set-up.

There had been a number of steps in development. All these components led to the current situation. Mr. Ozols described the system as "working quite well, but there is still big room for optimizing and learning in the forest sector".

"That's why we are more than happy", finished Mr. Ozols his speech, "to share with you our experiences. Count on us, if we can contribute to develop your forest sector in Georgia."

Welcome from Georgian Side Neli Korkotadze, Chief State Inspector



With a brief introduction into the current state of development of the Georgian forest policy, Ms. Neli Korkotadze opened the bilateral exchange of experiences. Georgia has a considerable number of forest resources: 2.8 Million ha of forest cover and 600.000 ha protected areas. But the country faces several challenges:

- Consumption of fire wood
- Lack of forest inventory
- Lack of qualified personnel
- Lack of financial resources
- Lack of forest education

Ms. Korkotadze stressed the fact, that during the past 20 years forest education was less important for young people. "That's why we are keen to transfer knowledge from the older to the younger generation", explained Ms. Korkotadze. "This study tour is very important for us. We see ourselfs as ambassadors to take the message back to our country." Finally, she expressed her deep gradituted to all partners for organising this study tour.

The Forest Sector and JSC "Latvijas valsts meži" (LVM1)

Normunds Struve, Deputy Director of Forest Department

Mr. Normunds Struve gave a general overview on the Forest Sector in Latvia and introduced to the JSC "Latvia's State Forests" (LVM).

Latvia, the land of forests, is with 3.4 million ha of forests among the most forested countries in Europe. 52% of the countries territory is covered by forest. The amount of forestland, moreover, is constantly expanding, both naturally and thanks to afforestation of infertile land and other land, which is not used for agriculture. The volume of timber in the forest is increasing three times more than the area of forestland. This proves that the forest area in Latvia is not expanding because of bushes. On the contrary, forestry work in Latvia has been very targeted. An average of approx. 12 million m3 of round wood have been harvested each year in Latvia's forests during the past decade. That is less than the annual increment, and so forestry in Latvia can be described as sustainable.

The forest sector is one of the cornerstones of the national economy at this time. Forestry, wood processing and furniture manufacturing represented 5,2% of GDP in 2014, while exports amounted to EUR 2 billion – 19% of all exports.

In historical terms, the intensive use of Latvia's forests for economic purposes began comparatively later than in many other European countries, which allowed to preserve extensive biological diversity. Limitations on economic activity apply to 13,7% of Latvia's forests, and most of this territory is owned by the state.

The Latvian state owns around one-half of the countries forests, while most of the rest of the forest belongs to approx. 144,000 private owners. Nearly everywhere, people are free to hike through the forest and to pick mushrooms and berries. The number of places for recreation increases every year and the territories in which recreation is one of the main goals of forest management represent 8% of all forestland in Latvia.

The Joint Stock Company "Latvia's State Forests" (LVM)

JSC "Latvia's State Forests" (LVM) manages half of Latvia's forests. With a Cabinet order, Joint Stock Company "Latvia's State Forests" (LVM) was established in October 1999. The company pursues state interests in forestry by sustaining and increasing the forest value, while gaining maximum possible value from forest management.



The major product of the company is timber. Along with forest management LVM also develops other business lines such as hunting and recreation services, produces genetically improved forest tree seeds and plants for forest regeneration.

The total area managed by LVM accounts for 1.63 million ha, of which 1.60 million ha are forestlands. Forest is the companies most valuable asset with forest management as the main source of value and profit. Conifers account for 68% of the LVM forestlands, 46% are pine trees. Birch is the most common species of deciduous stands.

Conservation of biodiversity

Conservation of biodiversity is of great importance in the forest management system at LVM. It is the main management objective for 20% of LVM forestlands (forests and marshlands). No management intervention of final felling are carried out in these areas, with the exeption of the activities needed for maintaining biodiversity.

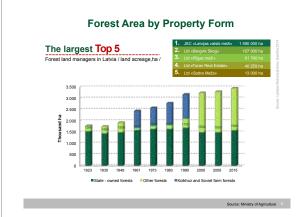
In order to preserve biodiversity, LVM not only manages protected nature areas (including Nature 2000) and forest stands for the preservation of tree species genetic resources, but also identifies new sites and fields of protected species, protected bird nesting areas, and ensures protection and care of habitats. LVM assesses the impact of the planned activities on the environment and plans measures for reducing such impact, including restrictions on logging in spring and summer – during the season of animal breeding.

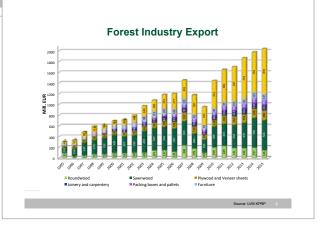
Social responsibility

Balancing different public interests, LVM plans and ensures forest management that would both now and in the future give maximum added value and more job opportunities. LVM also takes care of a safe working environment within the company, as well as controls and calls to establish safe working conditions in its partner companies.

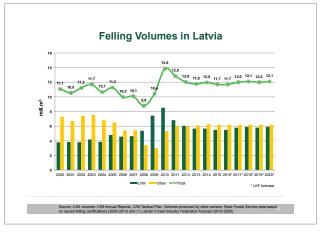
Every year LVM implements environmental clean-up projects, paying particular attention to involvement of children and youth in outdoor activities, promotion of wood buildings and wood finishing, adding to creation of a harmonious and healthy living space. LVM also offers a number of environmental education activities, raising public awareness and promoting responsible attitude towards the environment.











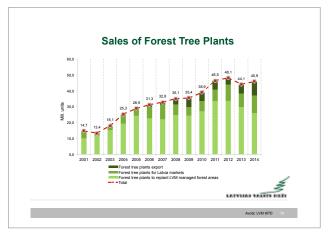
¹ Latvia's State Forests (LVM)



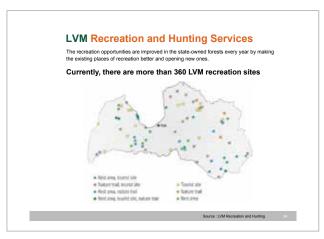


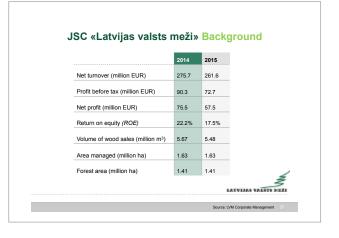


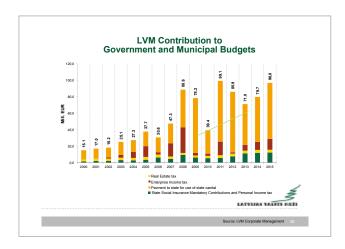


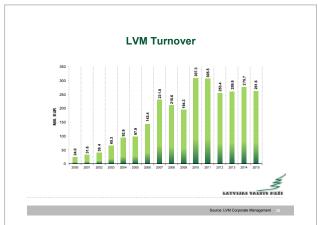












Game Management and Legislation, Agencies Responsible for Hunting Issues, Law on Game Management

J. Bars

The presenter gave the general overview about game management on state as well as private lands. He overviewed shortly legislation issues in Latvia related to hunting as well as limitations and prohibitions (restrictions).

How is hunting regulated in private land? Private owners manage themselves the hunting quotas. He also talked about the certification process on rights of hunting. This process is regulated by the State Forest Agency. In order to receive the rights on hunting, the person should take 40 academic hours and needs to pass 2 exams: one in theoretical part and second in practical. These 40 hours of teaching consists not only the use of weapons but also includes biology of hunting animals, it also consists of animal reproduction. They learn about limitations on hunting as well as the rules of hunting.



Control and Supervision Procedures in the State Forest Service

Baiba Rotberga, Director, Department of Forest Resource Management

After lunch the group had a 30 minutes walk through the old city center of Riga to the State Forest Service. Ms. Rotberga, Director of the Department of Forest Resource Management welcomed the group and introduced them to control and supervision procedures in the State Forest Service.

The Functions of the State Forest Service

State Forest Service (SFS) with the Ministry of Agriculture is a state administration agency which:

- ensures sustainable forest management, is responsible for pursuing the Forest Policy throughout the country
- controlles the observance of law in forest management and utilisation

- supervises of hunters and game management;
- organises the monitoring of forest fire safety and the containment of fires.

Other responsibilities according to different regulations.

SFS regional structure since 2012:

- 10 Head forestries
- 29 offices
- 360 ranger areas
- 650 employees.

Main principles of control and supervision of forest management activities:

- Each process has written procedure with flowchart defining responsibility of the officials
- The recommended amount of controls is defined for each process, e.g. Forest inventory is 40 %
- Risk assessment before control and supervision activities must be done

- Main risks are defined in procedures
- Each check must be documented (also registering points in GPS receiver)
- Criteria for selection what has to be checked derives also from the State Forest Register (SFR).
 Definitions are given e.g. max size of clear fell according to forest type, protection signs, age.

SFS Control:

- Once per year most risky processes are determined
- SFS control strategic plan for five years determines how often control of each activity is carried out, depending on the risk analysis of the priorities
- Annual plan of SFS Control
- SFS control procedure establishes a common procedure for checks
- The Regional Forest Officer must yearly check 65% of area under its responsibility, after two years the total area has to be covered.

Control plan for year 2016

Main processes:

- Forest inventory
 - Adding forest inventory data to SFR after implementing new SFS GIS.
 - Changes of forest inventory data
- Timber extraction
 - Issuing of cutting licences after implementation of GIS
 - thinnings, sanitary fellings
- Nature protection
 - Forest health supervision
 - Supervision of regulations in protected areas and microreserves
- Forest fire protection.

GPS receiver used by SFS employes:

- ASHTECH MobileMapper 100 (real-time submeter accuracy)
 - 260 units
- Magellan MobileMapper CX (real-time sub-meter accuracy)
 - ~ 200 units
- Magellan MobileMapper 6 (real-time 2-5m accuracy)
 - ~ 80 units





General Structure, Development, Operation and Control Procedures of Forest Management Plans

Baiba Rotberga, Director, Department of Forest Resource Management

Types of Forest Management Plans

There is no overall obligation for preparation of Forest Management Plans, except:

- Forest properties larger than 10 000 ha (approved by board or boss of company, valid for 10 years, must be published and content is defined by regulations of the Cabinet of Ministers)
- All properties in National Parks (including special nature value inventory, approved by Park administration, valid as long as forest inventory, content is by individual regulations of definite park. Not available for public, but SFS has electronical access)
- 3. State forests for scientific purposes (approved by Ministry of Agriculture every year together with budget).

Required minimal information of a Forest Management Plan:

- Forest management goals, size of managed area and location
- Groups of forest land according the regulations of forest Inventory and State Forest Register
- Summaries of forest stands by species and bonities, age classes
- Description of non- timber forest values, nature and cultural values registered in State Information systems - protected areas, biotopes, genetical resource forest stands, number of culture heritage objects; number of nature and cultural values identified by forest manager
- amount of forest infrastructure (roads and melioration systems)
- recreation sites and water and nature objects, forest parks etc., defined by spatial planning documents
- forest management activities (amount and spatial dispersion) – felling, regeneration, tending, forest protection, road construction, protection and management of nature and cultural values, landscape fellings, intensity of goals



 Forest management impact on forest resources, as well as requirements for evaluation of environmental and social aspects

Cartographical ammendments to plan:

- Plan of forest land: in State IS registered protected areas, microreserves, protected biotopes, genetical stands and cultural monuments
- Nature and culture values defined by forest manager; public recreational areas
- Amount of final and precommercial felling spatial distribution (only in plans for public forests)
- Distribution of landscape fellings with sight perspectives and points.

Forest Inventory:

- Inventory for each forest property should be done at least once per 20 years. In two cases must be done extraordinary inventory: when property is splitted and created new one and in case of closing of deer park
- Forest Inventory since year 2000 is private business
- Inventory should be performed only by certified specialist
- Issuing certificates and keeping register of «taxators» is responsibility of certification organization (regulations of certification)
- There are two certification organizations and 478 certified forest inventorists.

Valid forest inventory is precondition for:

- Felling activities in forest (except in cases of wind blown and dry trees under special requirements and when trees are dangerous for forest infrastructure)
- Deforestation and EU and State support for financing forestry activities and Natura 2000 compensations
- Reduction of Land tax in case of young stands (till age of 20 and 40 years) and restriction of forest management activities due to different environmental and nature considerations.

According to «Regulations on Forest Inventory and State Forest Register» before field work «taxator» must gather all relevant information:

- From state information systems different cadasters, registers and municipalities development plans
- Textual and cartographic information from State Forest Register.

Regulations on Forest Inventory and State Forest Register determines:

- Conditions for structure and format of data
- Classificators for preparation of plans
- Calculation algorithms of forest secondary parameters.

Forest Inventory and SFS

SFS (forester) checks each Forest Inventory and decides wheather or not to add this information to SFR. (Risk evaluation before: age, protection signs, etc., historical reputation). In case of refusal there is an administrative act to forest owner and inventorist. This administrative act could be challenged to higher official or even in court. SFS informs also certification organization.



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Control and Supervision Procedure of Hunting Process

Baiba Rotberga, Director, Department of Forest Resource Management

SFS main tasks in game management

Hunting and game management in Latvia is under supervision of the three governmental authorities:

- 1. State Forest Service at the Ministry of Agriculture (estimates, quotas, permits, inspection, damages, hunters' register);
- 2) State Police (weapons, inspection);
- Ministry of Environment and Regional Development (management of protected game species, e.g. lynx, reporting under Habitat Directive, specified hunting regulations in protected areas).

Main tasks are

- the evaluation of hunting resources (population assessment);
- hunting related laws and regulations compliance control;
- register of hunters and hunting leaders, the hunting rights of users (hunting districts);
- hunters and hunting leaders skill development (examination assurance).

To optimize game management and exclude parceling out the hunting grounds a minimum size of the management area for limited game is set as follows:

• For roe deer – not less than 200 ha of woodlands and farmlands.

- For wild boar not less than 1000 ha, incl. at least 200 ha woodlands.
- For red deer hinds and calves not less than 1000 ha of woodlands.
- For red deer stags not less than 2000 ha of woodlands.
- For elk not less than 2500 ha of woodlands.

Register of hunting areas

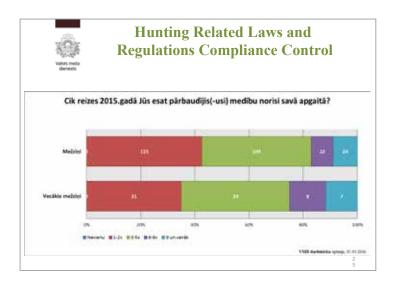
- registered 2074 hunting grounds;
- average total hunting ground area 2204 ha;
- registered 253860 land units.

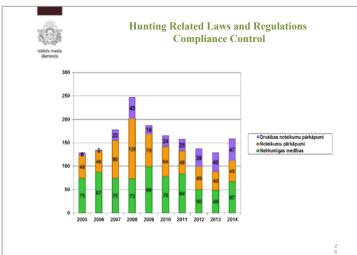
Unauthorized hunting methods and gear

In Latvia, the prohibited hunting methods, firearms, and gear are mostly the same as elsewhere in Europe: for instance, poisonous substances, sound recording, explosives, self-starting weapons, non-selective hunting methods and gear, etc.

Latvia has a number of specific norms and restrictions:

- A ban on using arbalets and bows,
- No hunting of the wildlife, escaping from natural disasters.
- Using only a weapon specified by the Latvian law as a hunting weapon.







Note: use of automatic or semi -automatic weapons that can be loaded with more than three cartridges or shooting is possible but ripple fire is prohibited. The same refers to the laser-type back sights and sights with electronic magnification for night use (except wild boars, foxes and raccoon dogs hunting).

Hunting related laws and regulations compliance control:

- Procedure of hunting control
- Unified methodical management for violation detection and characterization (qualification)
- Agent network in society
- Cooperation with State Police Inspection Group

Staff involved in hunting control:

- 5 hunting inspectors (one per two regional forestries)
- 10 hunting senior officers (mainly office work)
- 360 foresters.

Register of hunters and and hunting leaders

- Around 180 exams per year
- Average number of applicants for hunters license is 1500 and for hunting leaders 140 persons;
- SFS issues more than 1200 hunting licenses and 140 hunting leaders licenses per year.
- Number of active hunters is stable average 21000 hunters .
- Each year more than 1200 foreign hunters from 31 countries receive a permit for hunting in Latvia's territory. Most active hunters are from Denmark, Germany and Finland.









City Tour Riga

The late afternoon was forseen to explore Riga, the capital of Latvia during an old-town-walking-tour. The guide presented us the romance of Medieval Ages, the merchants and craftsmen town, founded more than 800 years ago.

Riga is included in the UNESCO World Cultural and Natural Heritage list. It is located in the central part of the country, on the south coast of the Gulf of Riga.

Riga is home for more than 700,000 inhabitants and is the largest city in the Baltic States. As Riga has developed at the crossroads of trade, it has become a

multicultural city in which one can always find a large number of things that are of interest.

Each century has left its mark in the city's features. They can be seen in the architecture of the Old Town and the City Centre. This cultural heritage coexists harmoniously with the quick pace of modern living. Riga is also known as the pearl of architecture – a city in which one can see together in one place churches that were built at the city's very origin, the medieval buildings of the Old Town, plus unique Art Nouveau examples, as well as wooden architecture which has survived for centuries.









FIELD VISITS TO LATVIAN FORESTS

Time **Activities** Breakfast and check out 07:00-08:00 08:00 Departure from Riga 09:30 Arriving at 1st forest site (Talsi region, Andumi) Forest site excursion, introduction to Latvia's forest management (forest inventory, forest thinning, forest regeneration, hunting management, forest infrastructure) 11:30 Departure to Sawmill Company "Vika Wood" 13:15 - 13:50 Lunch Thursday, August 25, 2016 13:50 Departure to tree nursery "Mazsili" Presentation and excursion by director Mr. Guntis Grandans 15:30-16:00 Coffee and discussions 17:30 Departure to 2nd forest site Talsi region, Stende Harvest planning and evaluation Dinner on the way to the hotel 19:00 Arrival in Kaunas, Check-in 21:30

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FIELD VISITS TO LATVIAN FORESTS



On 25th of August the group visited the forest which is managed by the state enterprise (LVM). During the field trip the presenter provided information about the peculiarities of forest infrastructure (roads, amelioration canals) and hunting procedures. He explained procedures for selecting and marking trees for cutting inside the cutting area and demonstrated measuring tools and methods.

The company involves more or less 1000 persons (permanent staff and contracted people) in the management of Latvian state forests. It is controlled by the State Forest Service, which is subordinated to the Ministry of Agriculture of Latvia. In accordance to the Forest Policy Document of Latvia, economical, ecological and social factors should be considered during forest management, which represents the principle of the company. Though, from the three mentioned factors, priority is given to economic considerations.











The company was founded in 1999. Initially, they received only 1.4 million Euro from the state. During the first two years, they provided strict control over the selling of timber resources. They prohibited other companies, which had been operational before, to sell timber and became the only company to have the right of selling timber. Therefore, only they were getting income from timber selling, which enabled them to plan the budget for the next two years. Income from 2000 to 2015 increased 12 times. The company's contribution to the state budget is 100 million Euro annually.

The company pays taxes for land use, profit and etc.. The company is managed by the Management Board and President and it includes the following departments: LVM Forestry, LVM Seeds and Plants, LVM Real estate, LVM Recreation and Hunting.

The territory, managed by the Company, includes 360 plots (mammadaba), which are visited by 150 000 visitors annually.

The company issues licences for hunting and fishing. It imposes control over the hunting process and hunters can take out hunted animal only after binding plastic tag with unique code on it. In order to assist the process of procreation of wild animals, biotechnical activities are carried out and proper infrastructure is set up on hunting areas. The company employees are also registering objects of wild fauna during the whole year and record them in a log book (was not available on the site).









Field visit in forest district and nursery

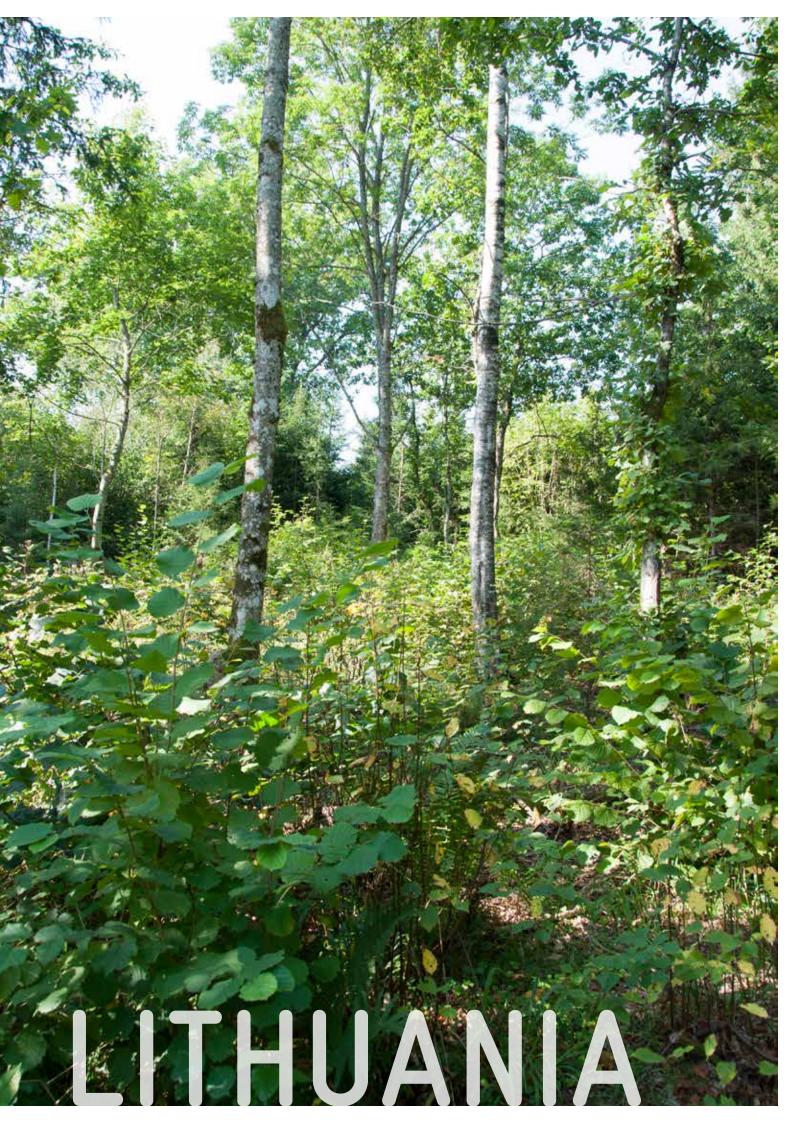
Study tour participants walked around the forest district including plots where reforestation works are being carried out, also protected forest district with different ages of trees. As it was mentioned on the site, management plans are approved for five years. It was indicated that any activities on protected areas are prohibited. At the nursery the Director held the presentation for the group regarding activities, structure and management of the company.

Participants walked around the territory of the nursery and were introduced to the technological cycle, planting procedures, soil fertilization, plant breeding in containers in greenhouses and advantages of using containers for root system development.

Last site which was visited by the end of the day was the forest site in Talsi region. Participants were introduced to the cutting area, the way cutting is carried out, the number of remaining trees, the preparation of cutting area, main requirements for tree cutting, equipment for timber cutting machinery.







GENERAL INFORMATION ABOUT THE FOREST SECTOR OF LITHUANIA

compiled from: A Policy and Institutional Analysis of Forest Sector Reforms in Central and Eastern Europe, M. Sotirov, GIZ Working Paper 67/2014

Percentage of forest cover of the country

Forests cover 2.172.900 ha or 33% of the territory of the Republic of Lithuania. The dominant tree species are Scott's pine (Pinus sylvestris) - 35.4%; birch (Betula pendula) – 22.1% and Norway spruce (Picea abies) – 20.8% (Ministry of Environment 2013). The average forest stand age is 52 years which is mainly due to high extent of reforestations between 1947 and 1967 (Malinauskas et al. 2003). Decrease of coniferous and increase of deciduous stands can be observed in the last 20 years (Glazko 2011). Over 600.000 hectares or nearly 30 % of the total forestland area are designated for ecological functions (water and soil protection, biodiversity conservation), whereas the remaining 70% of the forests are allocated mainly to economic use for timber production.

Forest ownership: percentage of state, communal and private owned forest

In 2013, the distribution of the total forest area according to type of property was as presented in the table on the right.

The ownership structure of Lithuania's forests has changed due to the ongoing Land Reform of 1991. There are ca 247.000 private forest owners with an average size of 3.3 ha. Ca. 28 % of all forest holdings are organized in joint ownership (Gaižutis 2013). The Forest Owners Association of Lithuania, initiated in 1993, currently has 34 cooperatives and companies with around 6.500 active members (Brukas et al. 2013).

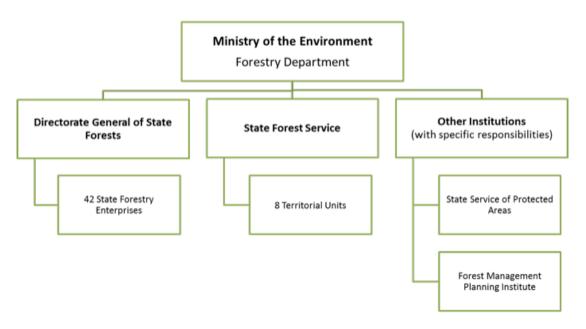
Forest ownership in Lithuania				
Type of ownership	Area, ha	% of total forest area		
State-owned forests (forests of state significance)	1.090.000	50%		
Private forests (private physical persons and private juridical persons)	848.000	39%		
Other types of ownership (forestlands set aside for restitution)	252.000	11%		

Institutional framework: role of state, stateowned enterprises, private enterprises

The main directions of Lithuanian forest policy are being determined by laws as defined by the Parliament. The Ministry of Environment acts as the centralised executive governmental body which delegates separate tasks to subordinated state forestry institutions. These include the Forestry Department which is responsible for forest policy formulation; the State Forest Service (policy implementation) and the Directorate General of State Forests (management of stateowned forest enterprises). The remaining state-owned forests are managed by administrations of nature reserves, national parks, municipalities, and other state enterprises and organisations (Figure 4). Private forests are managed, used and reforested by private forest owners following the Forest Act as well as Regulations on Management and Use of Private Forests and other legal acts regulating forest management. The state has committed itself to promote and support private forestry development by providing consultancy and management services to organizations of private forest owners. So far, the private forest owners have had very limited room for influencing forest policy and regulation. Fragmentation of forest ownership is as an issue and a big obstacle for achieving an economically sustainable private forestry. According to the Forest Act, it is forbidden to split forest holdings into parcels smaller than 5 ha. Forest industries are hardly involved in policymaking and have to adapt to fixed timber supply levels. The forest sector (forestry and forest industry) is important for the national economy since it is among the export-oriented economic sectors with 4.2% contribution to the gross domestic product of the country in 2006.

Government authorities

The Forestry Department in the Ministry of Environment is directly responsible for policy-making and formulation of the national forest strategy, and represents Lithuania's forestry on the international level. With the aim to separate policy-making and management, the Directorate General of State Forests was created in 1996. It soon became an influential actor coordinating and organizing regeneration, maintenance, protection and the commercial use of forest resources as well as establishing mandatory quotas for forest regeneration



Source: Kupstaitis 2014, adapted

and protection in all State Forestry Enterprises. The State Forest Service (177 employees in 2012) including 8 territorial units (108 forest inspectors) at the Regional Environmental Protection Departments are in charge of forest supervision and law enforcement on both national and local levels. The State Forest Service also organizes uniform state fire prevention and sanitary forest protection systems. It consults private forest owners, issues timber harvesting permits and organizes protection against illegal activities. Lithuanian forestry is governed by a high degree of centralization with the local authorities having limited autonomy (Daugirdas & Mačiulytė 2006). State forestry organizations dominate the forest policy arena in Lithuania to a considerably higher degree than in the Baltic neighbours Latvia and Estonia (Lazdinis et al. 2004). A political struggle for policy influence between the Forestry Department and the Directorate General of State Forests can be observed. The number of forestry specialists in the State Forest Service and other state forest institutions (excluding the State Forest Enterprises) has remained relatively stable and amounts to about 300 (Kupstaitis 2014).

State owned forestry enterprises

Since 2001, all 42 State Forestry Enterprises were transformed from public institutions to state-owned companies (Lazdinis et al. 2009). The average area of a State Forestry Enterprise is ca. 25.200 ha (Directorial General of State Forests 2013). The mission of the Directorate General of State Forests is to enhance the

ecological, environmental, economic, recreational and other socially important values of the state-owned forests by managing them on the principles of sustainability. It should balance forest management by rationally using, restoring and increasing forest resources. About 300 foresters are employed in the 42 State Forestry Enterprises whose main function is the management of state-owned forests. All State Forestry Enterprises operate on the principle of self-financing: their income is generated from the revenues collected from the forest goods and services provided which come mainly from timber harvesting and sales. They are generally no longer funded from the state budget (with some exceptions concerning individual measures towards silviculture, water, soil and biodiversity protection). State Forestry Enterprises pay different taxes to the state budget on the revenue collected from timber sales and services. Compared to earlier years, the State Forestry Enterprises pay 16 times more business and profit taxes to the budget and the ratio of all taxes to the income earned account for 42 % (the highest percent in Europe). They also pay 5 % deductions from revenues from sales of round-wood to the state budget. The Directorate General of State Forests and the State Forest Service are financed from a special programme for financing of common forestry needs. This programme is financed from the timber deductions paid to the state budget by the State Forestry Enterprises. As such, the main state forestry institutions such as the Directorate General of State Forests, the State Forest Service, and the State Forestry

Enterprises are basically financed "from the forests". Recently, the State Forestry Enterprises seek to diversify their income sources by providing a variety of services to private forest owners and managers such as land preparation, timber harvesting and transportation and sales of seedlings. In contrast to the state forest administration, the number of forestry specialists in the State Forestry Enterprises has decreased significantly during the last decade from 3.000 employees in 2002 to 2.000 in 2012. Like all private-state companies, State Forestry Enterprises are subjected to accountability through annual reporting and auditing of the accounts. The internal control of the Directorate General of State Forests in terms of financial and operational audit is carried out by the National Audit Office of Lithuania. The budget and financial control is carried out by the state under the Financial Regulation Rules signed by the Director General (Kupstaitis 2014).

Experience with forest sector reforms

The forest reform process started in 1991 after regaining independence. The Lithuanian Parliament adopted the Law on Procedure and Conditions for Restitution of Rights of Ownership to Existing Real Property and the Law on the Land Reform. Lands that had been nationalized during the period of 1940-1945, had to be resituated to their former owners and their descendants. First forestry legislation in Lithuania had been passed with the Forest Act in 1994, followed by amendments in 2001 and 2011. The restoration of national independence caused a challenging societal transition that inevitably affected forestry in various ways. This included transition to market economy and privatization, including forestland restitution as well as exposure of forestry to multiple external influences such as democratization of society and the remake of governmental institutions (Brukas et al. 2013). At the start of the institutional reforms all forests were state property. Lack of economic incentives, entrepreneurship and managerial skills, and top-down decisionmaking were the main characteristics of the inherited Soviet forestry system (Lazdinis et al. 2009). Since 1996, the institutional set-up for management of state-owned forests has resisted any significant reforms despite various attempts coming from higher political levels. Several reforms aiming at improve the governance of state-owned forests by reducing the number of state forest organizations and creating one or nine state-owned forestry companies failed in 2006 and 2009. Main reasons for the reform failures were the strong reluctance of state forestry organizations. As a result, the status quo represented by the institutional set-up with the General Directorate of State Forests and the 42 State Forestry Enterprises

has been maintained (Kupstaitis 2014).

International assistance to formulate the first National Forest Policy was provided first by Sweden and later by Denmark. The FAO outlined a strategy for private forestry development, and Japan helped with the feasibility study of a large scale exportoriented pulp and paper mill. The Government approved the first National Forest Policy in 1994. After its expiry, the second National Forest Policy was formulated in 2001. Therein, the participation of society, development and strengthening of international relations, and efficiency of forestry activity and rural development goals were emphasised more strongly and the formulation process involved a mix of government bodies, business actors and environmental NGOs. The latest approved National Forestry Sector Development Programme for 2012-2020 was elaborated under consultations with different stakeholders for almost two years. Among other targets it seeks to increase the forest coverage by a further 1% to 34.2% by 2020. If the current speed of forest expansion remains, it may be expected that the goal in 2020 will be exceeded (Ministry of Environment of the Republic of Lithuania 2013). This programme also foresees to afforest 25.700 ha new forests, to increase oak trees occupation from 2 to 2.4 %, and to increase a quantity of waste volumes of timber cuttings used for bio-fuel from 155.000 to 500.000 m³.







5 STATE FOREST SERVICE

	Time	Activities
	07:30 – 08:30	Breakfast
	08:30 - 09:00	Travel from hotel to State Forest Service
	09:00 – 12:00	State Forest Service
		Presentations and discussions:
		- Institutional set-up of forest sector
		- State Forest Service structure and functions
		 National Forest Inventory Standwise Forest Inventory and management planning
		- Standwise Polest Inventory and management planning
	10:20 - 10:40	Coffee break
	10:40 - 11:30	Presentations and discussions:
		- Forest databases (incl. State Cadastre on Forests)
9		- Forest use and its planning; implementation of EU Timber regulation
201		- Forest legislation, regulation of forest management responsibilities of forest
()		owners and users
26		- Forest law enforcement; control of forest operations – scope and procedures
Friday, August 26, 2016	11:30 – 12:00	Demonstration of forest officer's equipment
Ā	13:00 – 18:00	Dubrava Experimental and Training State Forest Enterprise
iday,	20.00	Presentation – Forestry activities in Dubrava Experimental and Training
Ę.	18:00	Dinner in the forest

DAILYOGRAMME

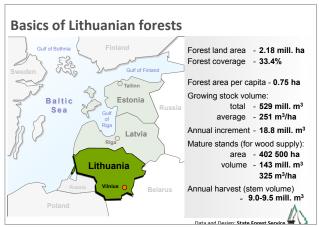
STATE FOREST SERVICE

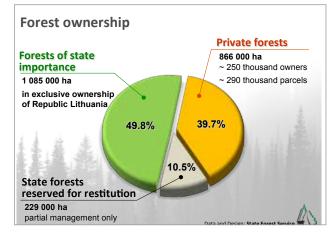
Lithuanian Forest Policy: Institutional Set-up

Nerijus Kupstaitis, Department of Forests, Ministry of Environment



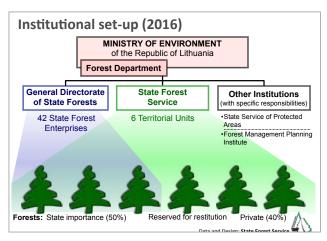




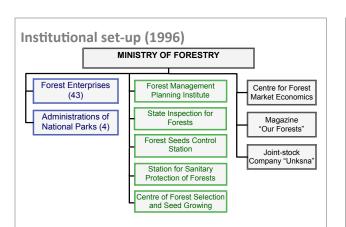


Socioeconomic importance of forests Forestry and forest industry (forest sector) are important branches of Lithuanian economy • forest sector generates about 4.5% (~1.4 billion € value added) and forestry – about 0.6% (~190 million € value added) of the Lithuanian GDP; • forest sector employing ~60 000 pers. or about 6% of total employment in the country is an important labor market; • consumption of fuelwood (incl. cutting and industry residues) for energy production reaches ~4 mill. m³ yearly (about 12 % of total country's fuels and energy consumption)

Main national forest policy decisions (since 1990) Restitution of forests (restoring the caused by national ownership situation of 1940) political decisions · creation of small-scaled private forest sector from outside the · competition in roundwood supply forest sector: to return the land Use of market-based economy in ownership to forest management · profit making state forest enterprises to create marketmarket-based roundwood prices based economy private companies in management of forests Afforestation of abandoned (former agricultural) land coming from the soviet time forest · further increase of forest coverage policy · rational use of abandoned land







Main steps of institutional Ministry of reorganization (1) Forestry 1990-1996 (1) Separation of policy-making and Ministry of Agriculture and management coordination functions: Reorganization of the Ministry of 1997-1998 Forestry Forestry Department of Establishment of General Directorate Forests and of State Forests (1996) ne Protected Areas at the Ministry of 1998-200⁻ an authority for the coordination of the management of state forests assigned to state forest enterprises Ministry of organizes and coordinates the Environment regeneration, maintenance and protection Since 2002 Department of Forests of such forests and the use of forest resources

Main steps of institutional reorganization (2)

(2) Creation of advisory and supervision services for private forestry:

- Establishment of <u>Private Forests Division</u> at the ministry level (since 1997)
- Establishment and Development of Private Forests Services (1996-2001)
- Establishment of **Units for Forest** Supervision at the State Inspectorate of Environmental Protection (2001)
- Attribution of the forest supervision functions to the <u>Regional Environmental</u> Protection Departments (2004)

Private Forest Advisory Service at the Forest Management Planning Instit 1996 Private Forest Services at the State Forest 1996-200° Enterprises (45) Units for Forest Supervision at the State Inspectorate of Environmental 2001-2003 Protection (8) Regional Environmental Protection Departments (8) and its units 2004-2011

Main steps of institutional reorganization (3)

(3) Improvement of forest sector governance and concentration of forest administration:

Establishment and enlargement of State Forest Service (2010-2012)

State Service of State Service of Sanitary Forest Protection

Forest Genetic Resources, seeds and plants service

Forest Control Unit at the State Inspectorate of Environmental Protection

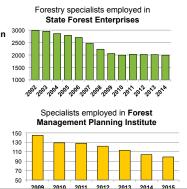
State Forest Service with 8 (6 since 2016) territorial units

ttribution since 2012

Forest inspectors (108) at the Regional Environmental Protection Departments (8) and its units

Human resources in forest administration

- The number of forestry specialists in forest administration (including in State Forest Enterprises) decreased significantly during last decade
- The number of forestry specialists in State Forest Service and other forest institutions (excluding State Forest Enterprises) remains relatively stable (about 300)



Financial implication of forest administration

Main institutions of forest administration are basically financed "from the forests"

State Forest Enterprises and Forest Management Planning Institute is functioning on selffinancing basis

General Directorate

State Forest

financed from the state budget special programme for financing of common forestry needs

> 5 % deductions from revenues from sales of roundwood

State Forest **Enterprises** (42)

Other governors of state forests (since 2014)

Private forest owners (since 2015)

In summary (1)

- Institutional set-up of the forest administration is basically adapted to current situation and sufficient
- Institutional set-up of forest administration remains strong centralized
- State regulation of forests is mainly focused on the control and supervision of forestry activities

All fields of regulation are covered The number of institutions is reduced State Forest Service – main institution for implementation of Lithuanian forest policy

There is no one institution of forest administration subordinated to municipal aovernment

In Lithuania the forestry activities in state and private forests are strictly regulated and particular prescribed by legal acts – more capacity for supervision is needed

In summary (2)

Management system of state forests resists any institutional reform since 1996 (status quo: General Directorate of State Forests and 42 State Forest Enterprises)

Advisory services for private forest owners still fragmented in several institution

(as additional function, not as the main activity)

Attempt to improve governance of state forests by reducing the number of institutions and creating one or nine state owned companies failed in 2006, 2009

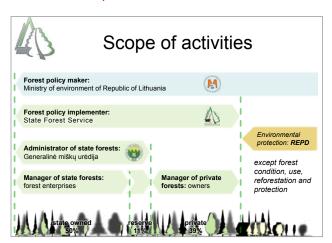
About 100 forest inspectors in State Forest Service (main function – control of private forests) About 300 foresters in 42 State Forest

Enterprises (main function – management of state forests)



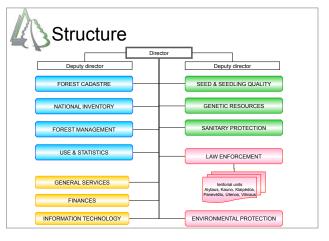
State Forest Service: Structure and Functions

Paulius Zolubas, State Forest Service









Functions of the State Forest Service

- Forest information management
- Strategic forest resource planning and teritory planning
- Service and advise for forest owners and managers
- Business supervision and forest law enforcement

Forest information

- Runs Forest cadastre
- Carries out National forest inventory
- Runs forest condition monitoring (ICP-Forests)
- Assess forest resources
- Records greenhouse gas emissions and absorption balance in land, land use and forestry sector
- Selects, evaluates and approves forest genetic
- Monitors forest pests and diseases and predicts outbreaks

Strategic planning

- Calculates felling quota for state forests
- Prepares forest planning schemes
- Prepares forest assignment to groups projects
- Issues territory planning conditions and approves projects
- Supervises conservation of forest genetic resources and tree breeding
- Determines forest pest and disease management system

Service and advice

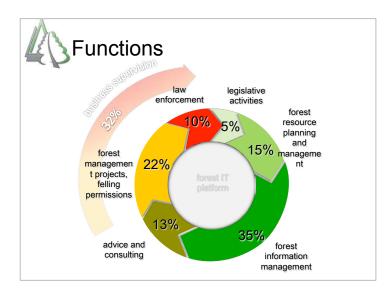
- Consults forest owners and managers
- Classifies forest seeds and seedlings, issues sertificates of quality and origin
- Checks validity of reserved forest land for auctions
- Calculates compensations for forest land conversion (land use changes)

Business supervision

- Approves forest management plans of private holdings
- Issues harvesting permits
- Registers suppliers of forest regeneration material; issues permits to import forest regeneration material
- Supervises independent timber measurers

Forest law enforcement

- Controls forest condition, use, reforestation and protection operations
- Impelements Regulation (EU) No 995/2010 laying down the obligations of operators who place timber and timber products on the



Questions

How do you carry out national inventory?

It is a stand-wise forest inventory done

It is a stand-wise forest inventory done region by region. The inventory finally covers the entire country within 10 years.

Is the information supply free of charge or does one have to pay for it?

Information supply is our monopol. The payment is very little and only covers the preparation costs.

Are there any cases where forest owners come to you and ask to control their forest?

No. They only come for advice.

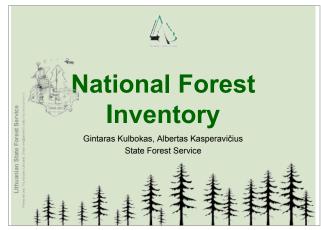
What kind of violation does exist for forest misuse? Any. The most often forest misuse is illegal logging. Confiscation of timber or tools is the consequence.

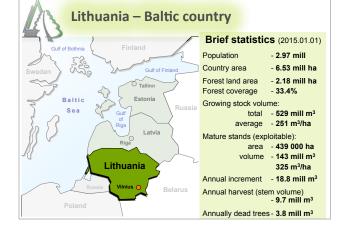
Who is conducting inventory? It is within our service.



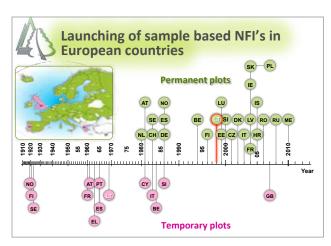
National Forest Inventory
Gintaras Kulbokas, Albertas Kasperavicius, State Forest Service



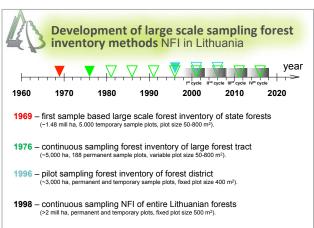


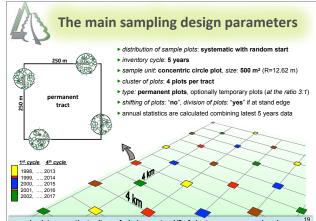


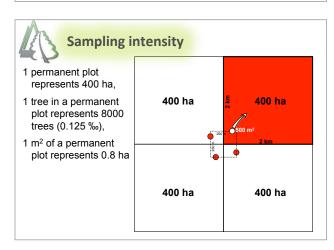


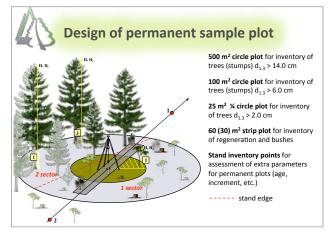


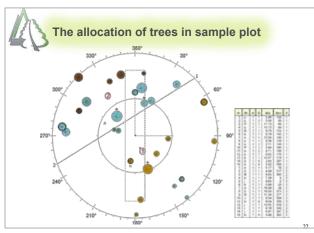










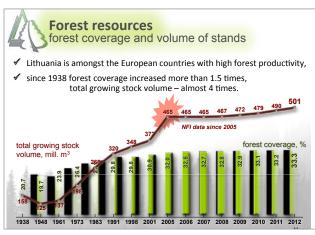


Extent of sampling NFI observations

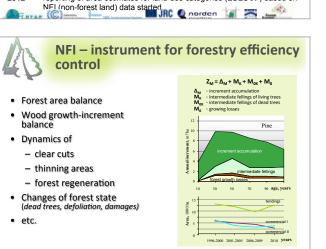
- Permanent plots on country's territory >16 000 (~3200 annually)
 - permanent sample plots on non-forest land >10 000 (~2000 annually)
 - permanent sample plots on forest land ~6 000 (~1200 annually)
 - permanent sample plots on forest land ~6 000 (~1200 annually
 - total number of sectors ~22 000;
- · Permanent observations:
 - >180 000 sample trees (6% outside forest);
 - > 50 000 subsample trees (7% outside forest);
 - > 20 000 sample stumps (2% outside forest);
 - >500 000 small trees and shrubs (12% outside forest);
 - > 18 000 soil descriptions (60% outside forest);
- · More than 100 variables assessed;
- 5% of all measurements are regularly checked.







Important Lithuanian NFI achievements nian NFI is the main data provider on Lithuanian forest resources. It is continued already 19th years, covering entire country each year, based on direct repeated measurements of permanent plots. As a comprehensive tool NFI serves many domestic and 1998 - first NFI in the Eastern Europe started after the collapse of Soviet Union; 2003 – Lithuania joined European national forest inventory network (ENFIN); 2004 - Lithuania joined Cost action E43 and participated in harmonization of parameters until the end of the action in 2009; 2005 int'l reporting (FRA-2005) based on NFI data launched; 2008 – int'l reporting on forest health (ICP-Forests) based on NFI data started; 2010 reporting of carbon pools (LULUCF-KP) based on NFI (forest) data started: 2010 - Lithuania joined E-forest consortium and is supplying NFI data; 2011 - Lithuania joined Cost action FP1001 "UseWood"; reporting of area estimates for land-use categories (LULUCF) based on 2012



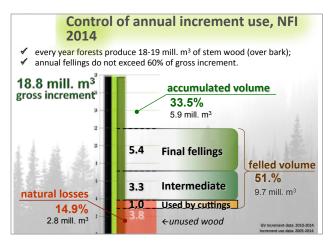


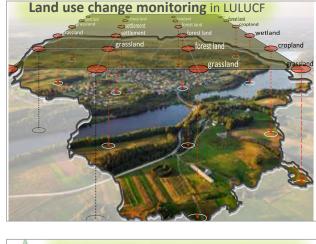
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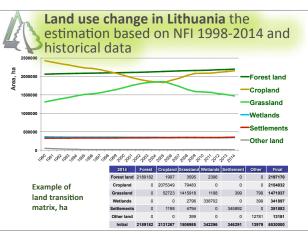
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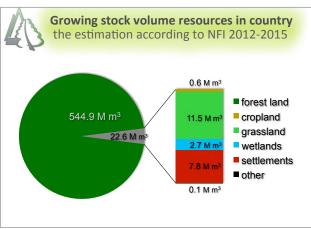
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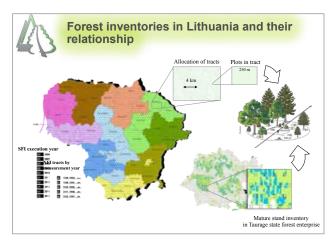


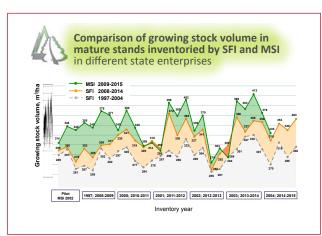












Question

When you make the sample plot, what is the space? 400 ha

Can you compare NEA data with stand-wise inventory data?

Here we have a continous inventory. There is about 10% difference between sample and stand-wise inventory.

Standwise Forest Inventory and Management Planning

Alfredas Galaune, Lithuanian Forest Inventory and Management Institute

Legal base

Laws

Forest law Law of protected areas

Law of territory planning

Rules

Forest management

Forest cutting

Afforestation and forest regeneration

Others



FOREST MANAGEMENT REGIMES (forest groups) Forests of special 12%

FELLING MATURITY

Prevaling tree species	forests of IV group		Nature maturity (main felling ages for II group forests)
Pine, Larch, Ash, Maple, Elm	101	111	171
Spruce	71	81	121
Oak	121	141	201
Birch, Lime, Black alder, Hornbeam	61	61	91
Poplar,	41	41	61
Grey Alder, Willow	31	31	51

YIELD REGULATION

- ■Amount of allowable cut is approved by goverment
- ☐ Calculation of amount of allowable cut is based on age class method (iii and iv forest groups)
- ☐ Valid forest management plan

STANDWISE FOREST INVENTORY: METHODS AND CONTENT

Forest stand inventory

Regular (every 10 years) inventory of each forest stand by : Instrumental, using

angle count sample plots, age borrers, heightmeters, calipers, measurement tapes, compasses.

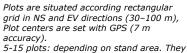
Visual, using

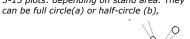
ocular.

evaluation and description.

STANDWISE FOREST INVENTORY: METHODS AND CONTENT

Instrumental, using angle count sample plots, age borrers, heightmeters, measurement tapes, compasses,









STANDWISE FOREST INVENTORY: **METHODS AND CONTENT**

Visual, using

ocular, measurement elements, evaluation and description.

1-3 points depending on stand area, in tipical stand places tree measurements must be done

In each of these places measurements of 3 tree diameters of prevailing tree speaces are done (for each stand store) and 1 tree diametres for each of other tree species are done.

Mean tree according to height is found from trees measured for diametre and length of stem is measured and age is determided too.

STANDWISE FOREST INVENTORY

Ortophoto after field works



under development since

GIS

orthophotos (from 1997) are used both as a cartographic background and for interpretation



GIS

ESRI ArcGIS, ArcSDE and MS SQL Server. around 1,2 Mil. of polygon (forest compartments) more than 3 Mil. of linear and near 1 Mil. of anno

Atribute DB (since 1984) for all forests of the

country more than 1,4 mil. records
more than 100 parameters for a stand (e.g. Indice than 100 parameters for a stand (e.g. land cover type, forest group or sub-group, ownership, soil type, tree species composition, ages, volumes, undergrowth and underbrush, forest health condition, planned and carried-ou slivicultural treatments, price of forest land and timber, etc.) annual up-dating using

growth models and information on silvicultural treatments





FOREST MANAGEMENT PLAN

The main tasks of forest management plan

- ☐ divide forest according to their purpose and way of management
- $\hfill \square$ inventory forests, taking into account peculiarities of individual forest groups and categories
- assess forest resources, their growth and exploitation potential, define forest use priorities
- co-ordinating economic, environmental, social and management requirements.

FOREST MANAGEMENT PLANS

Solves all Forest Management tasks:

- ·calculating annual cutting budget
- planning of silvicultural operations
- •economic assessment
- •planning forest fire prevention
- •environmental and biodiversity issues
- •recreational forest planning •game management etc. ...



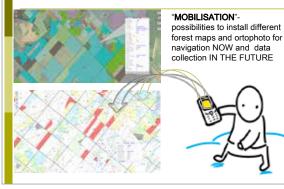




THEMATIC MAPPING



PROSPECTS



ACTIVITIES of FOREST INVENTORY and MANAGEMENT INSTITUTE

Forest stand inventory and mapping

regulary covers ~ 215 000 ha anually

Forest Managemet plans (projects) for State forest enterprises regulary 3-6 plans (projects) in 1,5 - 2 year

Forest management Schemes on County level regulary 2-3 schemes per year

Cadastre measurements of real estate

Game management

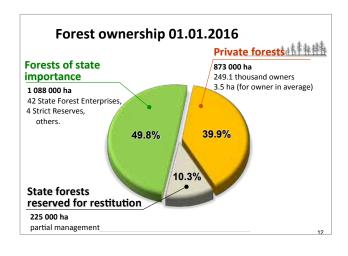
Others

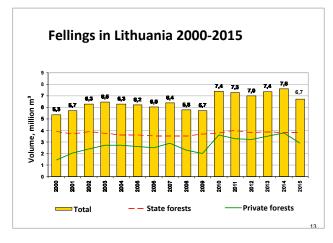




Forest Use and its Planning, Implementation of EU Timber regulation

Darius Vižlenskas, State Forest Service





Forest use in state forests

Main documents which determinate amount of fellings:

- Rate of final fellings in state forests for 5 years period approved by Government (11 200 ha);
- Rate of final and intermediate fellings for state forest managers approved Ministry of Environment;
- Forest management plan for 10 years period;
- Notification and permit for fellings.

State forest enterprises felled 97 percent of available are during the 5-year period.

Forest use in private forests

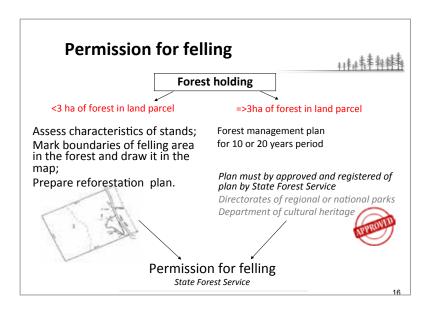
No notification or permission

- Pre-commercial thinning (in stands up to 20 years);
- Trees near boundary of parcel (up to 1.5 m);
- Dead and windthrow trees;

Notification

- Commercial thinning (from 20 years in stands);
- Non-clear fellings in grey alder, aspen, willow, sallow stands of III-IVA forests group;
- 3 m³ from 1 ha, but not more than 15 m³ from land parcel annualy;
- Salvage (sanitary) fellings (clear) in cases of natural disasters;
- Non-clear salvage fellings.

In other cases permission is necessary





Timber Regulation and obligations on EU Member States

EU "Timber Regulation" it is Regulation No 995/2010 of the European Parliament and of the Council of 20 October 2010) lays out the obligations of operators, who place timber and timber products on the European market first time, and traders.

Main task of TR prevent the placing of illegally harvested timber and products derived from illegally harvested timber on the EU market.

Main obligations on Member States:

- Each Member State shall designate one or more competent authorities responsible for the application of this Regulation;
- The competent authorities shall carry out checks to verify if operators comply with the requirements;
- Member States shall submit to the Commission, by 30 April of every second year a report on the application of this Regulation.

Timber Regulation and obligations on operators and traders

Main obligations on operators and traders:

- to exercise due diligence first time placing timber or timber products on the EU market (operators);
- to keep records enabling basic traceability of supply chains. (traders)

The three key elements of the "due diligence system" are:

- Information: The operator must have access to information describing the timber and timber products;
- Risk assessment: The operator should assess the risk of illegal timber in his supply chain;
- Risk mitigation: When the assessment shows that there is a risk of illegal timber that risk can be mitigated by requiring additional information and verification from the third party verification.



Forest Legislation

Paulius Zolubas, State Forest Service

Constitution of the Republic of Lithuania

- All persons shall be equal before the law, courts, and other state institutions and officials
- Property shall be inviolable
- While implementing their rights and freedoms, persons must observe the laws and must not impair the rights and interests of other people

Constitutional Court

 Particular ecological, social and economic significance of forest conditions certain limitations and restrictions on the right of ownership of forest owners

Legislation - national level

- Forestry Law
- Law on Protected Areas
- Law on Protected Species, Law on Wildlife, Law on Wild Flora ...
- Law on Environmental Protection
- · Law on Territory Planning
- Law on Hunting
- Law on Public Administration
- Administrative code
- Law on Environmental Protection, Law on Environment Control

Legislation - government level

- Special conditions on land and forest use
- Regulation on private forest management and use
- Annual harvesting rate of state forests
- Regulation on Forest group assignment procedures
- Regulation on Forest regeneration and afforestation

Legislation - ministry level

- Regulation on fellings
- Regulation on forest regeneration and afforestation
- Harvesting permit issuance procedures
- Regulation on Forest regeneration material
- Forest land planning procedures

The Forestry Law

- establishes rights and duties of all forest owners, managers, and users to utilize, reproduce, grow and protect forests
- strikes a balance between the interests of forest owners and society
- establishes the main principles of forest management

Who is who: forest owner

- the state
- individual
- legal entity
- · organization of foreign countries

having acquired the right of ownership to forests within the manner prescribed by law

Who is who: forest manager

- forest owner
- state forest enterprise, reserve, national park
- other individual and (or) legal entity

having acquired the right to use forest land

Who is who: forest user

- individual
- legal entity

having acquired right to utilize forest and forest resources

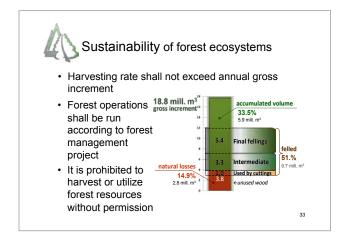
Duties of forest managers

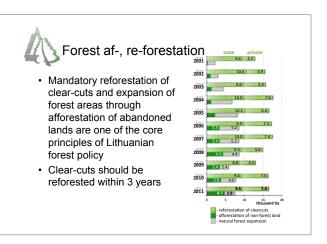
- to protect the forests from fire, pests, diseases and other negative factors
- to restore the felled forest in due time and properly
- to utilize the forest in such a way which could diminish the negative impact upon the environ-
- to rationally manage the woodland
- to preserve its biological diversity

Forest management principles

Reforestation, forest protection and forest utilization shall comply the principles of sustainable forestry:

- Keep the balance between three main pillars: ecological, economic and socio-cultural
- Sustainability of forest ecosystem shall be ensured





Forest Law Enforcement, Control of Forest Operations

Paulius Zolubas, State Forest Service

Forest Control Department Main objectives:

- perform control of all forest (state/private) management activities, monitoring, reforestation, afforestation and forest protection;
- consult private forest owners and managers on silviculture, reforestation, afforestation and forest protection;
- organize fulfillment of delegated functions and measures by European Agricultural Guidance and Guarantee Fund (EAGGF) and by European Agricultural Fund for Rural Development (EAFRD).

Main functions:

- Organize state control over all forest (state and private) condition, management, reforestation, afforestation and protection;
- Organize and control work of regional subdivisions:
- Consults and performs control of forest condition, silviculture, reforestation, afforestation and protection in forests run by State enterprises;
- Organizes training and courses for department officials;
- Advises and analysis use and distribution of state forest service funding;

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- Prepares instructions, recommendations, reglaments and other documents within the field of competence; is involved in making legislation projects;
- By procedures investigates, solves and replies to public complaints, statements and suggestions;
 Within competence participates in various work groups, commission by giving suggestions and findings. Also cooperates with Ministry of Environment departments and institutions under the Ministry of Environment;
- By the State forest service directors approval work in cooperation with Lithuanian and foreign legal bodies (state enterprises, international or nongovernmental organizations) to maintain fulfilment of departments main objectives;
- Uses "carrot-STICK-sermon" (regulation) to imply forestry laws for forest management, reforestation, protection and other law violations (submits lawsuits to repay damage done to environment);

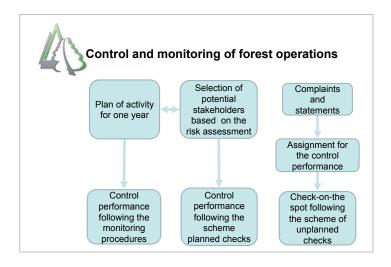
Main functions of forest officials in Regional subdivisions:

- Evaluates and approves private forest management plans;
- Issues felling permissions for private forest owners and managers and for state forest managers;
- Aproves felling notices for state forest managers and private forest owners and managers;
- Evaluates harvest site and preparation quality of forest felling documentation;
- Performs quality control of forest management activities in private forests;

- Controls quality of reforestation;
- Performs planned and unplanned private forest inspections;
- Fines for the offence relating to Forest low, other stated regulations and rules);
- Prevents illegal logging and other law violations;
- Consults private forest owners and managers on forest condition, silvicultural treatments, reforestation, afforestation and protection;
- By procedures investigates, solves and replies to public complaints, statements and suggestions;
- Writes reports and checks private forest owners estates, if they are following their commitments to National payment agency, which is funding them by the European Agricultural Fund for Rural Development (EAFRD) program.

Structure of Forest control department:

- Manager of the department;
- Deputy manager of the department;
- 2 forest officials coordination work in regional subdivisions and managing supply of gear;
- 3 forest officials performing control of state forest enterprises (forest management, reforestation, monitoring and protection);
- 6 managers of regional subdivisions, directly in control of subdivision specialist and performing control over other state run forests (management, reforestation, monitoring and protection);
- 84 forest officials in regional subdivisions, performing control of private forest (management, reforestation, monitoring and protection);





Demonstration of Forest Officers' Equipment

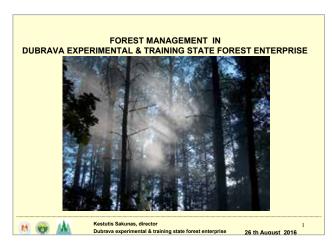
Before lunch break participants got a detailed presentation of forest officers' equipment. The different tools were of great interest among participants.

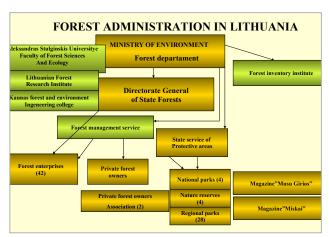


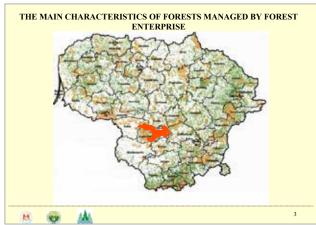
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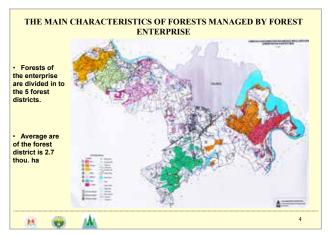
Forest Management in Dubrava Experimental & Training State Forest Enterprise

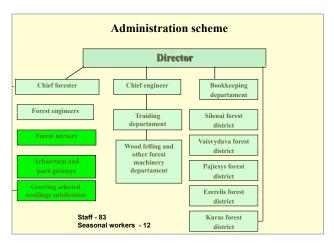
Kestutis Cesnavicius, State Foret Service

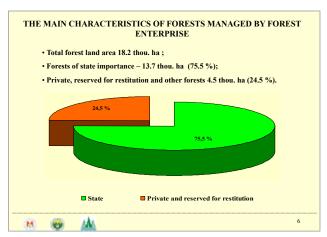


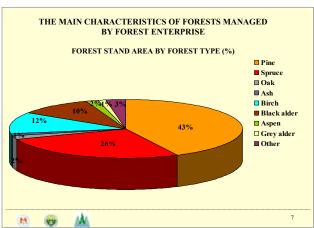


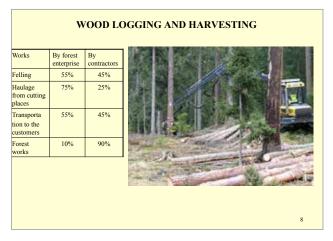


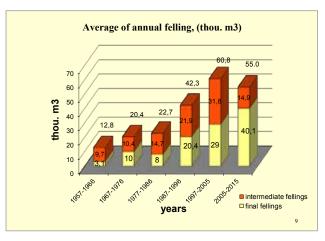


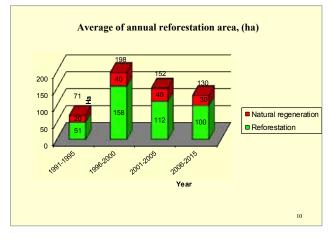












FOREST NURSERY, CONE SHELLING

- In the 52 ha forest nursery of the Forest Enterprise, about 1.5 million of standard saplings and seedlings of coniferous and deciduous trees are grown annually;
- 200 species and forms of coniferous and deciduous trees, bushes, lianas usable for urban sprouting as well as Christmas trees are being grown in the forest nursery.





- At the cone shelling department (the most modern and powerful in Lithuania), cones of spruces, pines and larches are being shelled for almost all national forest enterprises as well as for the owners of private forests.
- About 80 percent of all conifer seeds produced in Lithuania are kept in the seed storehouse-cooler upon the optimum conditions.

11



16

SCIENTIFIC AREAS





There are over 500 objects of scientific research, manufacturing and training in Dubrava ETFE, where employees of LFI and Kaunas College of Forestry and Environmental Engineering (KCFEE) carry out various experiments and observation



Many thousands of young trees were engrafted with grafters from the best pines, spruces, larches, oaks, black alders and other trees in greenhouses of Dubrava Growing Select Seedlings subdivision.

GROWING SELECT SEEDLINGS SUBDIVISION

RECREATIONAL OBJECTS







• There are 49 recreational objects in the forests of enterprise (cogitative paths, campings, resort-sites, sites for short-term recreation, sightseeing grounds);

- Citizens can visit these objects, pick berries, mushrooms free of charge;
- · About 20 thou, EUR forest enterprise is spending for recreational purposes annually .

19

FOREST FIRE PREVENTION, DETECTION AND SUPPRESSION IN **DUBRAVA ETSFE**



- For the forest fire prevention and monitoring some years ago forest fire towers were used;
- During dry period forest fire observer was observing surroundings from this tower;
- This forest fire prevention method is effective, but working conditions for the observer is harmful (high temperature, height)

FOREST FIRE PREVENTION, DETECTION AND SUPPRESSION IN **DUBRAVA ETSFE**

- In 2002 forest enterprise agreed with telecommunication company to install special equipment for forest fire detection;
- · This was first step towards modern fire detection;
- In 2011 new forest fire detecting system "Fire Watch" was established;
- System consists of 2 special detecting cameras mounted on telecommunication towers and monitoring center established in the building of the forest enterprise.
- · This system identifies forest fire smoke itself and sends signal to monitoring center.





FOREST FIRE PREVENTION, DETECTION AND SUPPRESSION IN **DUBRAVA ETSFE**

- Every year in the beginning of April 2 special forest fire fighting brigades are organized;
- These brigades are equipped with special forest fire fighting equipment:

Fire truck:

Off-road car-

Tractor with water tank

Radio communication syst



FOREST FIRE PREVENTION, DETECTION AND SUPPRESSION IN

DUBRAVA ETSFE

Annually forest enterprise is renewing over 80 km of mineralized zones

CERTIFICATION OF STATE FOREST

- Forest sertification process in Lithuania started in 2001;
- Directorate General of State Forests has chosen Forest Stewardship Council (FSC) as a international certification system;
- The main certification assesment of state forest management of Lithuanian forest enterprises was finished in 2004.





CERTIFICATION IN DUBRAVA ETFE

- In November 25 th, 2002 director Kestutis Sakunas have made contract with Danish company Nature, Ecology and People Consult (NEPCon) to perform the certification and annual audits, according to the Forest certification System of the Forest Stewardship Council (FSC);
- In July 1, 2003 Dubrava ETFE got FSC certificate.



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forest nearby.

CERTIFICATION IN DUBRAVA ETFE

- Certification process have changed usual understanding about forest;
- Increasing biodiversity, protecting rear species, height standards to work safety- this is the most important things from our point of view;
- · As a result of certification we can mention these changes:
 - few particularly dangerous pesticides are forbidden to use in the enterprise;
 - \bullet we are leaving more deadwood and biological diversity trees in final felling areas ;
 - maps with information about rear species, Natura 2000 territories, birds nests are printed and distributed to forest districts.

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CERTIFICATION IN DUBRAVA ETFE

- In 23 th of May 2008 director Kestutis Sakunas and "SGS Polska Sp. Z o.o" have concluded new Contract to perform the certification, according to the standarts of Forest Stewardship Council (FSC)
- In 6 th of May 2009 Dubrava ETFE has got new FSC certificate.
- •In 6 th May 2014 Dubrava ETFE has got new FSC certificate from





In the afternoon participants first visited the tree nursery of

In the evening, the Georgian delegation was invited to a delicious Lithuanian BBQ out in the forest (see pictures below).

the forest enterprise and afterwards harvesting activities in a





















DZUKIJA NATIONAL PARK

	Time	Activities
Saturday, August 27, 2016	7:30 - 8:30 08:30 - 10:30 10:30 - 17.00 13:00 - 14:00 17:00 - 19:00 19:30 - 20:30	Breakfast and check out Travel from hotel in Kaunas to Dzūkija National Park Sight seeing of Dzūkija National Park Lunch Travel to hotel in Vilnius, Check-in Dinner

DAILYOGRAMME



DZÚKIJA NATIONAL PARK

Introduction to Dzúkija National Park Mindaugas Lapelé, Head of Nature Division of the Dzúkija National Park



The largest preserved territory in Lithuania is the Dzūkija National Park. It occupies more than 58 thousand hectares and involves 4 municipalities in the South of Lithuania. The National Park was established in 1991 in order to preserve the pine forests, the landscape, and the villages of the region.

In order to preserve the unique natural and cultural features of the Dzūkija ethnocultural region, a

dense network of protected territories has been formed in the Park's territory. The Park is divided into four functional zones: conservational, protective, recreational, and economic (commercial). The conservational zone, which occupies an area of 26,580 hectares (47.5% of the park's territory), consists of three reservations and 28 reserves: eight landscape reserves, 16 nature reserves, and four cultural reserves.

The strictest protective rules are applied in the three nature reservations, the total area of which is 2,080 hectares. No economic (commercial) activity is permitted there.

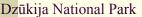
The largest single part of the Park in terms of area is composed of landscape reserves, which occupy 13,060 hectares. They protect not only the Park's most valuable landscapes, but also habitat for animals and plants as well as ethnographic villages.



Dzūkija National Park and Čepkeliai Strict Nature Reserve – features of nature and culture

Mindaugas Lapelė Administration of Dzūkija National Park and Čepkeliai State Nature Reserve







√Protection of some areas since 1961, National Park from 1991

√The largest protected area in Lithuania (58,500 ha);

✓Double Natura 2000 territory;

√Forests cover 84.6% of area; √36 rivers and rivulets;

√80 villages, about 3600 inhabitants:

✓Unique cultural landscapes mosaic of small villages, fields and pastures, scattered in the



- Picturesque valleys of rivers, inland dunes, hills and
- √Traditional way of living, old wooden architecture,

Dzūkija National Park – key area for biodiversity

The high biodiversity of this region was determined by:

- the geographical position and history of landscape;
- a unique combination sandy plains and moraine highlands, the specific climate and the hydrology;
- river valleys serving the purpose of migration corridors;
- vast areas of forests and big wetlands in southern part; comparatively soft influence of human activity on nature;
- mosaic of forests and small villages with traditional

Species protected according EU Birds and Habitats directives

The Cepkeliai Reserve and forests of Dzukija National Park are designated as Internationally Important Bird Areas and Natura 2000 areas, especially for protection of such forests species as

- Black Grouse (*Lyrururs tetrix*)
- Wood Grouse (*Tetrao urogallus*)
- Grey-headed Woodpecker (Picus canus)
- Roller (Coracias garrulous)
- Nightjar (Caprimulgus *europaeus*)
- Woodlark (Lulula arborea) and others

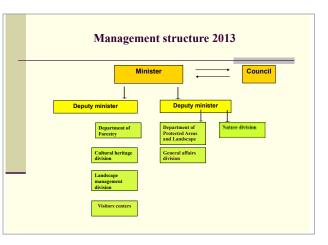
Only in Dzukija National Park there are 25 habitats, 66 species of animals and 6 plant species protected in EU.

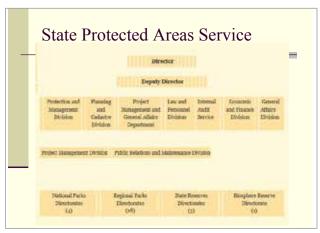
Habitats protected according EU Birds and Habitats directives

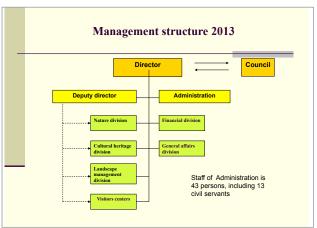
- 21 areas in Varena municipality will be nominated as Natura 2000 areas to protect threatened on European level species and habitats, such as
- western taiga
- alliuvial forests with Black Alder
- herb-rich Norway Spruce forests
- Inland dunes
- Bog woodlands
- Wooded pastures

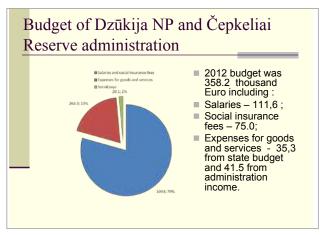
Land cover according CORINE classification LAND COVER OF DZŪKIJA NP (%) Agricultural land ■ Artificial surfaces Waters and wetlands Other land

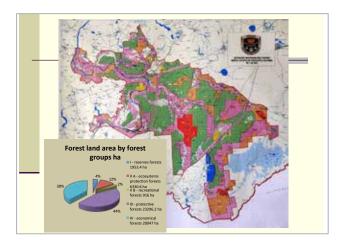


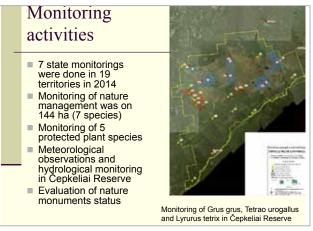




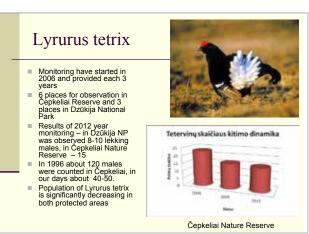








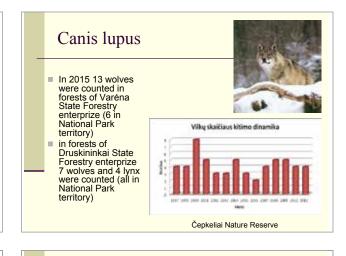




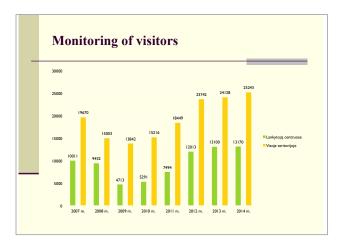
Alces alce

Estimated population of elks in Čepkeliai Nature Reserve and Dzūkija NP is about 100 individuals

In all Lithuania in 2012 were 8666 (+1196 comparing with 2011) elks and 25672 (+2177) red deers, 109707 (-6420) roe deers, 250 (-50) Wolves

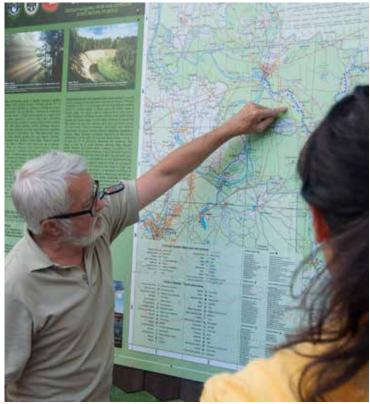


















Visiting the Dzùkija National Park























CITY OF VILNIUS

	Time	Activities
2016	9:30-10:30	Breakfast
28,	11:00 – 13:00	Visit of the city Beginning: from the Cathedral Belfry
Augu	13:00 – 14:00	Lunch
Sunday, August	14:00 onwards	Leisure time and individual dinner

OGRAMME









VISIT OF THE CITY OF VILNIUS





Vilnius is the capital of the Republic of Lithuania and the largest administrative heart with all major political, economic, social and cultural centres. History reveals that Vilnius was first mentioned in 1323. Today, Vilnius is the largest city in the country, with the population of approximately 560 thousand.

The city displays a variety of both architectural expression and willpower. This is perhaps due to the interesting history that rests in this attractive town, which not always has been the capital of Lithuania. However, for over five centuries, until the 18th century, Vilnius had been political and cultural centre

of Grand Duchy of Lithuania. The Old Town of Vilnius was included in the UNESCO World Heritage List in 1994 just because the town "has preserved an impressive complex of Gothic, Renaissance, Baroque and classical buildings as well as its medieval layout and natural setting". 2009 Vilnius was the European Capital of Culture.

The people of Vilnius has for many times been forced to go along with different kind of conquerors. The city has therefore a long history of being occupied and that has of course left its mark on the whole of the city.





9 DIRECTORATE GENERAL OF STATE FORESTS & TRAKAI STATE FOREST ENTERPRISE

Time **Activities** 08:00 - 09:00Breakfast 09:00 - 13:00 1st group Travel from hotel to Directorate General of State Forests Directorate General of State Forests Presentations and discussions: Monday, August 29, 2016 - State Forests of Lithuania - Use of wild flora and fauna resources regulation - Control of the use of wild flora and fauna resources in Vilnius Regional Environmental Protection Department 2nd group Travel to Trakai State Forest Enterprise Forest fellings, control and supervision procedures, field trip Private forest holding and sawmill 15:00 - 16:00 Travel to the airport

DAILYOGRAMME

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DIRECTORATE GENERAL OF STATE FORESTS (GROUP 1)

Study Tour participants split in two groups: one group visited the Directorate General of State Forests of Lithuania. The presenter introduced the management system of the state forests in Lithuania. State forests are managed by State Forest Enterprises (49%). Every year foresters plant 1000 ha of forest. Fire detection system was established in 24 state forest enterprises in 2010-2013. Directorate is responsible for fire prevention, disasters, accidents and afforestation (both for state and private forests). State forest enterprises finance infrastructure activities and from last year – road maintenance.



As for the game management in Lithuania, 24 State forest enterprises have professional hunting plots. Hunting permit is issued for 10 years and will be prolonged for 10 more years if the user comply with all permit conditions. Size of average hunting area – 1000 ha (minimal area defined by law). There are 4 Hunting Associations, 30000 hunters in the country and 900 hunting clubs.

Regarding timber harvesting: Annually up to 4 million m3 trees are being cut and the state plans to decrease cutting up to 35% by 2020. Timber is only sold by electronic auction (international) and no preferences are given to local industry. Biofuel is sold by exchange stock and for firewood, there are two ways of selling: by auction and retail selling (sold to population – 5% of all sales). Presenter introduced regulation of wild flora and fauna resources.

Presentation also covered regulation of ground-water and quarry extraction. In case of ground water, only passport is required to extract up to 10 m3 of ground water and for more quantity, consumer should have proper license, issued by Lithuanian Geological Survey and Tax for using ground water. As for the quarries, there are two types: small quarries and industrial quarries. Requirements for quarry extraction are also different. For small quarries only passport is required and for industrial extraction, user should have passport, license and paid tax for natural resources use.



LITHUANIAN FOREST OWNERS ASSOCIATION (GROUP 2)

On the last day of the Study tour through the Baltic countries one part of the group met the Lithuanian Forest Owners Association (FOAL) and the best managed forest owner's title-winning Casimir Šiaulio. The group visited his private forest and his sawmill in Trakai district.

The Forest Owners Association of Lithuania (FOAL) is the national organization representing the interests of family forest owners.

FOAL's mission is to unite Lithuanian private forest owner and private forestry organizations into a selfsufficient association, which represents members of the association and protects their legitimate interest.

The association was established in 1993, as demand for knowledge in forestry was increasing and a growing community of forest owners with increasingly common purposes emerged. The creation of a strong and independent private forestry movement in Lithuania, based on shared values, has been a major goal of FOAL since its creation.

After the post-soviet restitution of land owner-ship rights, farming in private forests has become an important element of rural and regional development and employment in Lithuania. Forests are managed not only by professional foresters, but people, who have received the property after restitution or have purchased it. Such a diversity of forest owners calls for an organization that can offer qualified consultations carried out by forestry specialists, offer up-to-date information on private forestry issues and provides strong representation in matters affecting the interests of private forest owners.

FOAL represents the interests of family forest owners at both, national and international levels. After more than 20 years of activity it has grown into a social organization, uniting over 6.500 members. Accepted as a member of the Confederation of European Forester Owners (CEPF), European Landowners Organization (ELO), International Family Forestry Alliance (IFFA), and supported by Danish, Swedish and other organizations, FOAL unifies private forest owners. As a member of the Chamber of Agriculture of The Republic of Lithuania, the Lithuanian Association of Impartial Timber Measuring Professionals, and a participant in the round-table of Forest Owners' Associations' of the Baltic Sea Countries, FOAL is well placed in the forestry sector. A partnership with the Lithuanian Agriculture Advisory Service, Lithuanian Biomass Energy Association "Litbioma", and The Lithuanian District Heating Association is currently being developed and a cooperation agreement with the Association of Wood Working Industries "Lietuvos mediena" is in effect.

FOAL is actively engaged in the private forest policymaking process with The Parliament, The Government, and The Ministry of Environment, which is responsible for implementation of forest policy in Lithuania, as well as the Ministry of Agriculture and National Paying Agency, which administers European Union support for rural development.

Casimir Šiaulio presented his approach regarding planning and management of his forests. Under his ownership is 1.300 ha of forest. The group had visited owner's sawmill as well.









Visit to a private forest owner

After the independence of Lithuania in 1991, restitution of land to private persons took place. A lot of state forests were given back to the former owners and a landscape of small and medium forest properties was created. Many people did not know, what to do with small pieces of woodland and they sold it. A concentration process towards medium and some big forest owners could be observed.

The owner of the visited forest bought a lot of small pieces having now 1367 hectares. Because of the former diverse owners, the forest stands are also very heterogeneous in age and in tree species composition. This gives the owner many management options. The landscape is hilly and formed by glacial moraine sedi-

ments. In comparison to fluvial glacial sediments, the soils are relatively rich in nutrients. This is reflected in spruce (*Picea abies*) as dominant species and the occurrence of broad-leaf trees like ash, maple, alder and oak, in addition to birch. Harvesting is done in small clear-cuts less than 5 hectares. The cleared area is replanted or, if enough natural regeneration is present, this is used to re-start the new production cycle (more or less 100 years).

The forest owner has also a sawmill, where he is processing the conifer and broad-leaf wood. Spruce wood is used to make pallets, which are exported to Germany. Boards of broad-leaf timber go to the local and national furniture industry.





Annex

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Annex 1: Evaluation

Feedback from participants

Dear colleagues,

It is our aim to improve permanently our Human Capacity Development offer. Your feedback on the study tour ""Environmental and Forest Supervision and Control Processes in the Baltic countries Estonia, Latvia and Lithuania" will support us in this effort.

Thank you very much! Erich Mies, Maka Katsitadze

PN 11.2197.9-007.02

Project Integrated Biodiversity Management, South Caucasus, IBiS

travel dates 20-29.08.16 country of origin Georgia number of participants 19

		l agree fully	l agree	I agree only to some extend	l do not agree	Ques- tion not applica- ble
1	The study tour was a complete success	16	3			
2	The travel and the program were very well prepared	14	5			
3	For the technical meetings good professional partners were selected	14	5			
4	The thematic content of the study tour was comprehensive	11	8			
5	I will be able to use the gained knowledge and experiences in my home country (with needed adaptions, of course)	10	8	1		
6	The cultural program was carefully selected	15	1	2		
7	Transport worked without problems	13	4	2		
8	We were satisfied with the accommodation	19				
9	We felt well attended by the colleagues from Baltic countries	17	1	1		
10	All in all I felt well during this study tour	16	3			
1						

11 Comments: What do you like to advice us for future study tours?

Thank you!

It will be desirable if similar tours will be conducted in other countries as well

Thank you to GIZ, to Mr. Erich and Ms. Maka

Thanks for organizing a nice tour

Keep up the good work!

Complex tour – supervision, forest agency, protected areas, forest policy. It was successful. It will be also interesting to conduct similar tour within Georgia with the involvement of all four agencies. It will be good to learn about other countries experiences regarding environmental supervision. Once again thank you for an interesting tour!

Thank you very much!

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