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Legal Aspects of European Forest Sustainable Development

Proceedings of the 14th International Symposium
Minsk, Republic of Belarus
19-21 September 2012

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PREFACE

IUFRO research group 9.06.00 has been operating world-wide over decades now to collect, evaluate and document, disseminate and also critically analyze developments in forest law and environmental legislation, with special emphasis on Central and Eastern European countries, not only, but in particular such with economies in transition. This within the unit's general and foremost objective, i.e. to foster exchange of information amongst researchers and practitioners active in the domain of forest law and environmental legislation, and to permanently review the state of the subject, thereby setting priorities concerning research and practice. Thank to the many lawyers amongst that group, it has also been highly successful in accomplishing the scientific transfer between traditional forestry communities and legal circles. The group's work distinctively contributed to ease long-standing deadlocks, by connecting policy and law in research and real life as well as in policy and law design and foremost in policy and law implementation.

Starting from 1998, the former IUFRO 6.13.00, now 9.06.00 research group has regularly been organizing workshops to discuss legal aspects of European forest sustainable development in a non-formal and thus highly productive way. The 1st International Symposium on (then) "Experiences with new forest and environmental laws in European countries with economies in transition" was held in Ossiach, Austria in June, 1998, followed by another such meeting, again in Ossiach, in September/October 1999. The 3rd International Symposium was held in Jundola, Bulgaria in the mid June, 2001, followed by the IUFRO 6.13.00 group meetings in Jaunmokas, Latvia 8 - 10 August, 2002, then in Zidlochovice, Czech Republic in 28 – 31 May 2003, and after that follow-up symposia took place in Poiana Brasov, Romania, in 16 - 20 June 2004; in Zlatibor Mt., Serbia, in 11-15 May 2005; in Istanbul, Turkey, in 10 – 14 May, 2006; in Zikatar, Armenia, in 19 - 23 June 2007; in Sarajevo, Bosnia and Herzegovina, in 7 - 9 May, 2008; in Zvolen, Slovakia, in May 13-15, 2009 as well as in Larnaca, Cyprus, in 30 May - 2 June, 2010. Ten years of intensive research work resulted in the allocation of two sessions on "Sustainable Forest Management through innovative forest laws and environmental legislation" to our group, during the XXIIIrd IUFRO World Congress in Seoul, Republic of Korea, in August 2010. In continuation of this highly successful work, the group met in Kaunas (Lithuania) for the 13th Symposium on "Legal Aspects of European Forest Sustainable Development", in May 2011.

The 14th International Symposium on Legal Aspects of European Forest Sustainable Development will be held in Republic of Belarus in September 19-21, 2012. The symposium will kindly be hosted by the State Scientific and Production Amalgamation "Scientific-practical Centre of the National Academy of Sciences of Belarus for Biological Resources" (http://nasb.gov.by/eng/) and is supported by the Ministry of Forestry and Ministry of Natural Resources and Environmental Protection of the Republic of Belarus. More than sixty researchers and practitioners originating from twenty-five different countries will use this opportunity to get acquainted, involved and familiar with the new legal situation not only in European forests, but, profiting from the presence of participants from across the world, also in Asia (including Japan, Iran, and a number of Central Asian countries) and Africa (Democratic Republic of Congo, Burkina Faso). All participants, above all however the substantial number of representatives of former Soviet Republics (Central Asia, Caucasus, and Europe) will gain considerably from Russian-English simultaneous translation which will be made available due to the generous support of the Eva Mayr-Stihl Stiftung.

Peter Herbst
Coordinator
IUFRO Forest Law and Environmental Legislation, 9.06.00

LEGAL ASPECTS OF CONGOLESE FOREST SUSTAINABLE DEVELOPMENT

ELIKIA, AMANI[1]

Abstract

The Democratic Republic of Congo is the second 'lung' of the planet, after Brazil. It contains 133 million hectares of dense, tropical rainforests, 50% of the total forest area of the Congo Basin. There exists in DR Congo a body of legal texts that constitute a safeguard for the protection of the environment. This includes law number 11 issued on 9 July 2011, which outlines fundamental legal principles relative to the protection of the environment and defines the rights and responsibilities of those who conduct any sort of activity within Congolese forests. There also exist 'Green Codes', Congolese legal texts relating to the environment and natural resources. Lastly, there is a guide to understanding the Congolese Forest Code for local communities. This paper will present the role that the Congolese Foresters Network plays in the fight against forestry infractions and environmental crimes in DR Congo. It will also explain the sorts of local conflicts that exist as a result of the application of forestry laws and environmental legislation. The presence of the Congolese Foresters Network at the 14th International Symposium on the Legal Aspects of European Forest Sustainable Development will be an opportunity for fruitful exchanges concerning the legal aspects of forest exploitation and protection in DR Congo.

Keywords: Congo, forestry, sustainability, legislation, infraction, environment

I. Introduction

Sustainable development emphasizes a holistic, equitable and far-sighted approach to decision-making at all levels. The Global Commission on the Environment and Development affirms: "Humanity has the capacity to implement sustainable development so as to satisfy the needs of the present without compromising the possibility for future generations to meet their own needs." The concept of sustainable forest management is, however, limited by the current state of technological and social organization with respect to forest resources, as well as by the capacity of the biosphere to absorb the effects of human activity.

To realize sustainability in the future, development in the forestry sector must be tridimensional. First, such development must neither damage nor destroy the system supporting the key elements of life on planet earth: air, water, soil, and the biological web – limiting the emissions of CO_2 and habitat destruction are of critical importance – nor degrade natural resources on which humans depend for economic and social activities. Second, forests must be developed in such a way that they can continually furnish the goods and services generated by their resources in a sustainable manner without exhausting these resources. The third dimension of a good forestry project in the framework of sustainable development is that there should exist a social system that is also sustainable at the international, national, local and even family levels.

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According to the International Tropical Timber Association (ITTO) and the Food and Agriculture Organization (FAO), forestry offenses can take different forms that range from the ignorance of rules and regulations to fraudulent practices, including abuses of power and the illegal exploitation and commerce of forestry products. They can also include the illegal conversion of forest areas to other uses (deforestation) and the irrational usage of forests in general (resulting in forest degradation). Deforestation and forest degradation have an important and largely negative impact on the means of subsistence and the well-being of rural communities. It is however difficult to evaluate to what extent the non respect for legislation and weak governance influence local livelihoods and the national economy and the best way to confront these shortcomings with a view to realizing sustainable forest management. The FAO and the ITTO judge that the application of laws and good governance in the forestry domain is essential for the countries and local communities that depend upon forests.

II. The geographic and socioeconomic situation of DR Congo

Overview

- The DR Congo is located in central Africa
- Surface area of 2,345,000 km^2 (905,354 sq mi)
- Population = 70 million
- It is the second largest country (by area) in Africa
- GDP per person = $300 per capita
- 250 ethnic groups
- Languages: mainly French and Kikongo, Tshiluba, Swahili, and Lingala.
- 80% Christian
- Literacy Rate: **67%**
- **< 30%** of homes have electricity (fuelwood demand is high)
- **59%** of population below international poverty line of US$1.25 per day (2005)

Natural resources and environment

A century ago, Congo was referred to as a "geological scandal" because of its mineral wealth. It is the world's largest producer of cobalt ore and a major producer of copper and industrial diamonds. It has cadmium, cassiterite, gold, silver, tantalum, tin, zinc, uranium and other minerals. Regrettably, mineral wealth has not produced dividends for ordinary Congolese, as demonstrated by the fact that the majority of the country's population lives in poverty.

This immense territory can also be considered a "biodiversity scandal". Congo's diverse and multi-use forests cover 1.5 million km², over half of the national territory; they represent 47% of the tropical forest area on the African continent and 6% of global tropical forest reserves. The central basin alone, in large part covered by dense primary forest, occupies 100 million hectares or 80% of the country's total forest area. The country's dense tropical forest, the world's second largest after the Amazon and is home to over 500 species of mammals, 1000 types of birds and 100 species of primates. Endemic species such as okapi and bonobo live in the threatened habitat of this equatorial region. According to the national Permanent Forest Inventory and Management Service (SPIAF), 708 tree species have been identified, although the total number is much greater.

Half of Africa's water resources are in Congo and constitute one of the country's greatest assets. Inga, a series of hydroelectric dams located on the Congo River that has twice the capacity of China's Three Gorges Dam, is a potentially clean and renewable source of

significant revenue. Industrial logging also has great potential but is another sector that has not provided dividends to ordinary people. The large forest reserves present enormous potential and could conceivably permit annual production in the order of 6 million m^3 of timber per year. Unfortunately, like mining, this sector is run by mafia-type networks with close connections to the political establishment.

III. The legal texts concerning forests and the environment in DR Congo

What does each text stipulate, generally speaking, from an ecological, economic, and social point of view?

a. The Constitution of the DR Congo

Article 53 of the Congolese Constitution stipulates that every citizen has the right to a safe environmental favorable to his or her fulfillment in all domains. According to Article 45, any act, accord, convention or arrangement that has as a consequence the deprivation of the nation, individuals, or legal entities of all or part of their means of existence obtained from their resources or their natural riches – without prejudice towards international dispositions concerning economic crimes – is contracted illegally, considered pillage, and punishable by law.

b. The Forestry Code of the DR Congo

The key text that governs the forestry sector in DR Congo was issued on 11 April 1949. The application of this text has proved difficult as a result of multiple political, economic, social, and cultural factors. As a result, 52 years after its independence, the forestry sector in DR Congo is not yet endowed with an appropriate system of regulation. It lacks a legal framework that would permit forests to fulfill their ecological and social functions, allow forest administration to contribute to national development, and guarantee the active participation of local communities in forest management in order to ensure that they share in the benefits of development in this sector.

The Guide to Understanding the Forestry Code was initiated by nongovernmental organizations working with local communities and indigenous peoples and the governmental administrations responsible for forests and rural development. It was conceived in order to permit local actors in the forestry sector to understand their rights and responsibilities relative to the usage of forest resources. The publishing of the document and associated awareness raising was intended to promote the rights of concerned communities with respect to forest exploitation.

c. The Green Code

The Green Code refers to the body of Congolese legal texts that concern the environment and natural resources. These texts have particular relevancy with respect to climate change, given the direct and indirect links that exist between natural resource exploitation and global warming and the potential contribution of the application of these texts to climate change mitigation.

d. National environmental legislation

This law outlines fundamental principles relative to environmental protection and was recently issued on 9 July 2011. The promulgation of this law demonstrates the priority of this sector in RD Congo.

e. International texts relative to the environment

The international community has become increasingly aware of the importance and the necessity of environmental protection. To illustrate, it suffices merely to count the ever increasing number of international conventions and accords concluded with respect to the environment. Below is a list of certain key international environmental conventions ratified by the DR Congo that have particular relevancy to forest development:

1. African Convention on nature conservation and natural resources
2. Convention relative to humid zones of international importance particularly as habitats of wildfowl (Ramsar)
3. Convention concerning the protection of the global natural and cultural heritage
4. Bonn Convention on the conservation of migratory species of wild fauna
5. Vienna Convention on the protection of the ozone layer (London and Montreal protocols)
6. United Nations Convention on climate change
7. Convention on biological diversity
8. International accord on tropical timber
9. Convention relative to the conservation of wild flora and fauna
10. International convention for the protection of plants
11. Convention on the conservation of wild species of flora and fauna threatened by extinction (CITES)
12. Kyoto Protocol

IV. Conflicts between forestry practices and environmental legislation

Innovative management of the Democratic Republic of Congo's (DRC) forests is an international priority. It is important to promote socio-economic wellbeing and biodiversity conservation. It is also crucial to address global climate change and could provide significant revenues to the national budget. But recent forestry codes and initiatives have not achieved expected results: corruption and mismanagement partly explain why.

Forest governance – and environmental governance in general – refers to the way competing stakeholders vie for power over nature in an arena often riddled with rivalry and mistrust. According to the U4 organization, the origins of the crisis in Congo's political economy and its implications for present-day environmental governance have their roots in the patrimonial system put in place by King Leopold II. The Belgian monarch claimed the country as his personal property in 1885 to extract rubber and ivory. President Mobutu exploited natural resources in a similar patrimonial style a century later. He institutionalised corruption under his famous "fend for yourself" slogan (débrouillez-vous, in French).

Present-day environmental governance continues in a similar vein. Governance of the forestry sector is largely ineffective due to the apparent lack of will of the current regime to enforce its own legal texts concerning forests and the environment. 90% of all exploitation in this sector occurs in violation of relevant laws, and consequently, it produces little if any benefit for the population. There are a great number of businesses (80%, by some estimates) that operate clandestinely, under cover of the current regime, without respecting environmental laws or those relative to sustainable forest management. Such businesses neglect to conduct preliminary environmental and social impact assessments prior to commencing their activities and engage in a host of practices with negative environmental, social, and economic consequences in pursuit of their own profits.

International partners and Congolese authorities share responsibility in failing to implement meaningful change in the nature of environmental governance and forest management. Were real reform to take place, many authorities, civil servants and NGO representatives in the country would see their capacity to benefit from commissions, featherbedding, kickbacks and other forms of corruption diminish. Congo's international partners do not agree upon a master plan for reform and often implement inconsistent and even contradictory programmes. In addition to poor incentives, reform implementation has not materialized largely because of the absence of a reliable administrative structure. The administrative, logistical and institutional control mechanisms envisaged for forest management are either non-existent or insufficient. This means that the legal framework is unable to prevent industrial loggers from pursuing the corrupt practices that have characterized the sector in the past. Awarding new logging concessions during the moratorium that was in place only a few years ago is an example.

The intent of Congolese environmental legislation is to promote the sustainable management of natural resources, to prevent risks to the environment, to combat all forms of environmental pollution and harm, and to improve the quality of life of populations while respecting the delicate ecological equilibrium. However, the realities of forest exploitation clearly contradict the aims of this legislation. Forestry practices in DR Congo are dominated by illegal and irrational exploitation of resources and result in massive deforestation, with the consequence of destroying important habitats and threatening ecologically symbiotic species. When the trees on which they depend for food and shelter are destroyed, a plethora of species risks disappearing along with them. Clandestine forestry companies are a major factor contributing to widespread forest degradation and deforestation in Congo, resulting in the loss of biodiversity and other negative socioeconomic and environmental impacts.

V. The role of the Congolese Foresters Network as an independent observatory of forestry infractions and environmental crimes in DR Congo

For the past five years, the Congolese Foresters Network (RCF) has undertaken investigations relating to legal aspects of sustainable forest development. Notably, RCF combats environmental degradation and fights to protect the rights of indigenous peoples and local communities that depend directly on Congolese forests. The RCF denounces the disappearance of wild flora and fauna and non timber forest products and threats to biodiversity in areas of intensive forest exploitation. The Network brings to light the abusive and incessant deforestation by clandestine forestry companies and individuals engaging in artisanal exploitation and the ways in which this contributes to the impoverishment of communities and the destruction of forest ecosystems. As the activities of RCF underscore, if the rhythm of this erosion of biodiversity continues, it will grievously impact the quality of life of future generations.

With respect to the specific case of eastern DR Congo, RCF has gathered data that demonstrate the great danger to forests of the ever-increasing use of chain-saws as a tool of decidedly unsustainable forest exploitation. Two decades ago, the chain-saw was introduced in primary forests by young businessmen to replace the handsaw that had been used for centuries. This new tool greatly accelerated the rate of forest exploitation by a class referred to as "nouveaux riches" to feed the timber markets of Kampala and Nairobi with wooden planks, beams, panels, etc. At this time, the eastern DR Congo suffered from a lack of professional, competent forestry personnel who could discourage uncontrolled forest exploitation and promote sustainable forest management. Although the number of such

personnel has increased, abusive forestry practices continue, often in complicity with the very administrative structures responsible for overseeing rational forest management.

To cite only one example, RCF has discovered that the forestry administration in the province of North Kivu has actively encouraged the proliferation of forest concessions without concern for sustainability, resulting in the introduction of a large number of chainsaw operators engaging in uncontrolled clearing of large swaths of forest. At the rhythm of approximately 10m^3 per day per chainsaw, in a span of fifteen years, almost the entirety of those forests areas granted as both legal and illicit concessions have been decimated; this massive deforestation occurred on the watch and with the knowledge of government officials. As early as 1995, one could no longer speak of forests in the territory of Beni (once considered the "lungs" of the province of North Kivu), but rather remnants or islands of forests that continue to be progressively decimated. The latest investigations of RCF reveal that in simply two administrative territories, 505 chainsaw operators cut approximately 4040 m^3 of timber each day. Illicit and unsustainable exploitation has been furthered by the successive wars in the east of the country, where the devastation of the primary equatorial forests is symptomatic of rent-seeking behavior and a generalized a lack of effective government control over natural resource exploitation.

Subsequent to the clearing of timber in a given concession, RCF has remarked that the area is often abandoned to farmers and herders who burn the remaining vegetation to clear space for agriculture and livestock raising, with the disquieting implications for CO_2 emissions and global warming. To illustrate, in a given 200ha concession, RCF inventoried more than 11,850 m^3 as the total volume of plant species, among which 395m^3 consisted of timber. 18 months later, the entire 200ha concession that had been occupied by primary forest was replaced by pastures and fields growing food/cash crops. Clear-cutting forestland is the antithesis of sustainable forest development and the dramatic reduction of this practice is a central aim of RCF.

With respect to local and indigenous Congolese communities that depend on forests for diverse aspects of their livelihoods and way of life, RCF also denounces the various violations to which they are subjected. Companies that engage in forest exploitation often fail to respect their obligations towards these communities; they gain access to concessions with promises to provide socioeconomic assistance in the form of infrastructure construction, gainful employment, or livelihoods support that are never realized. Labor laws are also often circumvented, and workers confront hazardous conditions and low pay. The 2002 Forestry Code contains a variety of provisions intended to benefit local communities: a clear framework concerning access to forest resources, stipulations regarding sustainable forest management and community participation, measures to reinforce the efficacy of forestry institutions, and terms that oblige companies to respect their engagements vis-à-vis local communities. RCF seeks to ensure that both public and private sector actors comply with this legislation in order that local and indigenous communities can reap the benefits of their natural heritage. RCF believes that forest exploitation can and should be a catalyst for local development.

VI. Conclusion

Tropical ecosystems are fragile, and their protection is an imperious necessity. The forests of DR Congo constitute the second lung of the planet earth, and their safeguard should be a national, regional, and global undertaking. The Congolese government has a poor track record relative to the management of forest resources and the protection of this ecosystem of capital importance, which is an important reserve of biodiversity for the entire planet.

Accordingly, we suggest to IUFRO to support RCF with the intention of overcoming the challenges posed by weak governance and promoting sustainable management of forests in RD Congo. We suggest that a research symposium is held in RD Congo, given the extent and importance of its forest reserves. RCF solicits a partnership with IUFRO with the objective of building capacity among forestry professionals working in the Congo Basin and undertaking initiatives to combat climate change, upon which sustainable development depends.

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THE DEVELOPMENT OF THE FOREST SECTOR AND FOREST POLICY IN MONTENEGRO IN RECENT PERIOD

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Abstract

Forest policy in MNE is a document which was brought/adopted in 2008. The Ministry of Agriculture, Water Protection and Forestry, and now a Ministry of Agriculture and Rural Development, reckognized the importance of development of strategic documents. The new Law on forestry is adopted at the end of 2010. It is a Law which was brought with a participation of broad forest public, in process which involved domestic and foreign experts. Forest strategy is a document which is missing at the moment, and it will be realized under IPA projects. The process of writing and adoption of several by-laws, in the light of new Law is ongoing. The new Methodology of Forest Management planning is developed and implemented. FMP in MNE has several planning levels. Forest Development Plan is a planning on a municipality level, and includes public participation in it's development and adoption, which was not a case before.

Today In MNE there are several active International projects/organization in the field of forestry, which are contributing to the development of Forestry. FODEMO project (Forestry Development in Montenegro) is a donation project, which is establishing communication among foreign experts and domestic institutions (Ministry of Agriculture and Rural Development, Forest Administration, environmental institutions etc.), and supporting the development of various legislative (Law on forestry, Forest Policy, by-laws etc.) and metodological papers/documents (National Forest Inventory methodology, Forest Management Planning methodology). A lot of foreign experts and consultants was engaged through the projects, and they were (and stil) contributing to the development of the sector in MNE. Forestry forum is an event which was held twice (2010. and 2012.) in MNE, and it represents a place for exchange of ideas and knowledge, and for presentation of what was done in past year. IPA funds are also present in MNE, and they are used especially for development of the new Information system in MNE forestry, but also for the incorporation of NATURA 2000 into standard FMP documents and into practice.

Latest National Forest inventory (2011) showed that Montenegro is a country with more than 60% of forest and forest land cover. This data will provide an establishment of the new dimension of the quality of the forest policy, considering the fact that Montenegro is among top forest covered European countries. This data will provide a base for clear defining of the contribution of MNE forests to climate changes mitigation, and will provide high standards

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for International reporting. Also, the determination of the forest MNE potential for the definition of the biomass energy, with a cooperation of the Ministry of Economy is ongoing. We should not forget the fact that Montenegro in 1991. declared itself officialy as an Ecological country, and it is obvious that the forest ecosystems are playing important role in the society, which is becoming more and more opened toward nature.

Keywords: forest policy, legislation, planning, sustainable, inventory.

1. Forest policy, legislation and institutionalisation of governance

According to the United Nations Development Programme (UNDP), good governance "includes essential elements such as political accountability, reliable and equitable legal frameworks, bureaucratic transparency, effective and efficient public sector management, participatory development and the promotion and protection of human rights." Although this definition sounds confusing, it is realistic to say that Montenegro forestry sector within recent reforms, which are happening according to the prescribed plan, and related to EU membership in view, has started to deal with issues which are the core of good governance in modern forestry, like transparency, accountability, rule of law etc. The Ministry of Agriculture, Water Protection and Forestry, and now a Ministry of Agriculture and Rural Development, reckognized the importance of development of strategic documents, and started with a systematic approach of top-down forestry model building.

Forest policy in MNE is a document which was brought / adopted in 2008. As a contribution to meeting the goals and priorities of the National Strategy of Sustainable Development, document of the National Forest Policy prioritizes five general goals contained in the following:

1. Ensure and improve long-term resistance and productivity of forests and other ecosystems, and maintain plant and animals species;
2. Management of forests and forest resources ensures sustainable implementation of social, economic and ecological forest functions;
3. Forests contribute to sustainable social and economic development of rural areas;
4. Ensure long-term development and competitiveness of wood industry;
5. Long-term development of forest profession and effectiveness of forestry.

It contains of 35 statements, with a list of tasks for each statement. This roof document covers issues from the quality status and needs required, through social and economic development of the society in the sphere of forestry and related sectors, together with modern and competetive forestry sector vision. This Forest Policy has special value because it was not prepared from offices, it does not assume simple adoption of expert thoughts and experiences from abroad, but is based on the work of seven Working Groups with 49 members representing different organizations, 14 local and international consultants, a number of workshops, preliminary public hearings. It was reviewed twice by Government Commissions before the Government adopted the Draft, and this was followed by a broad public hearing. Forest Policy fit under the framework defined by the following documents: Strategy of

Sustainable Development, Strategy of Poverty Reduction, Strategy of Balanced Regional Development, Economic Policy, and National Programme of European Integrations. These documents result from one another, they are complementary and conditional. The National Forest and Forest Land Administration Policy will be implemented through the National Forest Strategy, which along with this Policy relies on recommendations of the Ministerial Conference on Protection of European Forests in relation to National Forest Programmes. The Strategy defines short-term, mid-term and long-term objectives and programmes for areas of work and regions, addresses critical prioritized issues, defines multi-year budgetary programme and lays the foundation for detailed annual work plans and budgets. Forest strategy is a document which is missing at the moment, and it will be realized under current IPA project.

Towards the new Forest Law, within a process of harmonization of legislation with the EU, a number of other regulations have been adopted and impact regulation of relations in forestry sector such as: Law on Strategic Environmental Impact Assessment (2005); Law on Spatial Planning (2005); Law on Forest Reproductive Material (2006); Law on Agricultural Land (2006); The Law on Reproductive Material of Forest Trees (2007); Law on Environmental Protection (2008); Law on Game and Hunting (2008); Spatial Plan of Montenegro until 2020; Law on Waters (2007); Law on Agriculture and Rural Development (2009); Law on National Parks (2009); Law on State Property (2009); Law on Property and Legal Relations (2009); Law on Financing of Local Government (2008); National Strategy of Sustainable Development (2007); National Forest and Forest Land Administration Policy (2008); Concession Law (2009).

The new Law on forestry was adopted at the end of 2010. In previous Law (2000), the relation between state and private ownership was not balanced, and bureaucratic barriers were a limiting factor in developing the sector. For this reason, there was an objective need for some of its provisions to be improved and harmonized with new goals of forest and forestry development, including:

- clearer definition of forest functions and principles of sustainable forest management,
- a new improved management planning system in forestry, which ensures a more transparent procedure in developing planning documents,
- a clearer definition of provisions related to forest exploitation and more transparent methods of selling timber, which should leave sufficient flexibility to public services for more comprehensive and multipurpose benefits of forest functions,
- establishment of more flexible provisions related to tree markation and the use of available allowable cut at annual level,
- removing barriers related to dispatching wood assortments from private and state forests, according to Regulation (EC) No 995/2010 of the European Parliament and Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market,
- building competitiveness in the sector,
- public support to associations of private forest owners and their engagement in decision-making process,

- establishing protected areas in forests within ecological network NATURA 2000 where forest management will be in line with goals of protection and conservation of such areas, i.e. their habitat types,
- incentive policy which is achieved by implementing measures in line with the European Union policy for rural development,
- comprehensive monitoring of all processes in forests

The establishment of these mechanisms provided better forest management, higher investments and creating employment opportunities in forestry, improving financial operations of both private and public institutions, better ecological protection and improved management of protected areas and higher benefits for civil society. The main principles of existing National Forest Programmes in Europe (participation; inter-sectoral approach; frequent process with long-term obligations; capacity building; consistence with national legislation and policy; integration with national strategies of sustainable development; compliance with international commitments, having in mind common actions of international initiatives and conventions related to forests; institutional and political reform; ecosystem approach; partnership in implementation and raising awareness) are directly integrated or their concept is clearly presented in the Forest Law, which certainly is a step ahead in integrating the best European practices in forestry. It is a Law which was brought with a participation of broad forest public, in process which involved domestic and foreign experts.

The process of writing and adoption of several by-laws, in the light of new Law is ongoing. In this particular moment, where the theoretical vision becomes practical guideline, it is necessary to be as much simple as possible while defining concrete steps and activities. That is why the implementation of the Improved Methodology of Forest Management Planning, as a base for most of the forestry related activities, requieres a lot of energy, expecially considering new approaches in planning documentation development and also in practical / technical sense. Adopting new planning methodology should contribute to more transparent and more responsible forest management, which will be based on principles of sustainable forest management in compliance with ecological, economic and social forest functions.

“Old school” foresters needs to be refreshed with a participatory techniques knowledge and new technology devices as working skils (GPS (Global Positioning System), GIS (Geographic Information System), new metodology planing, management of Natura sites, extension service etc...), and this process is ongoing. Forest Management Planning in Montenegro has several planning levels. Forest Development Plan is a planning on a municipality level, and includes public participation in it’s development and it’s adoption, which was not a case before. Forest Development Plan shall be enacted by the Government for the period of 10 years, after previously obtaining the opinion of the state administrative authority competent for environmental protection and tourism and local self-governance unit whose area has been included in the plan. Especially important provision, which complies with the principle of participation of professional and wider public in the process of adopting of planning documents, was addressed through participation of stakeholders in drafting and

adopting of plans, based on relevant EU Directive and Regulation, which proved to be very good in adopting of the National Forest Policy in 2008. In relation to this, private forest owners, stakeholders and wider public have the right to participate in processes of preparation and adopting of all planning documents in forestry, which are related to their interests. The procedure for participation of stakeholders in preparing and adopting development plans and Forest Management Plans are further elaborated (starting the drafting, implementation of public hearings and a method of their adoption) and deadlines for giving opinion about forest development plans and forest management plans. It is defined that prior to defining opinions on submitted objections, proposals and suggestions on the proposed plan, a competent administrative authority is obliged to obtain opinion from the National or Local Forest Council about a Forest Development Plan and a Forest Management Plan.

The Law on Local Government does not define municipal responsibility for forests and forestry, but generally prescribes that municipalities are responsible for environment protection, municipal services and spatial regulation. The Law on Public Administration also prescribes that certain functions of the state administration, for the purpose of their more efficient and more economic implementation, are legally decentralized to local government, i.e. entrusted to the local government, institutions and legal entities. According to the Law on Local Government, municipalities receive 70% of fees paid for utilisation of forests in their territory. These funds are considered to be a share in natural resources benefits and the support to building and maintenance of local infrastructure in forest areas. The communication between state institutions and the general public should go both ways, should be open and with clearly defined communication channels for some of the target groups. Better mutual understanding and cooperation between all partners in forestry (Government, NGO, private sector, interested international organisations) are achieved through training programmes for all stakeholders and by regular open forums for exchange of information amongst partners in forestry sector. Next level in Forest Management Planning is Forest Management Program, which is brought on the period of 10 years, and it is obliged to have, before it is adopted, the opinion of the Agency for Environmental Protection, at the same time containing the guidelines requiered by the Natura 2000 network. On this level also, there is a necessity for cooperation with the Ministry of Tourism and Environment, which is responsible for nature protection, including, establishment of Natura 2000 network, environment protection and tourism development in Montenegro. Operational programs, as a bottom planning level, are brought on a yearly base, and they include intensive communication with private forest owners and their associatons.

2. Transfer of knowledge between EU countries and MNE, through different funds

With EU membership in view, Montenegro could benefit from regional cooperation with other Balkan countries, especially with member states and other candidate countries. The lessons learned and exchange of experiences in forestry development in these countries could be useful for development of the sector. Improved regional and international cooperation in forestry, especially in education, research and training is considered to be an important instrument for achieving strategic goals in forestry sector. The matter of forest education and

training is addressed in a way that competent administrative authority and users of state forests are obliged to put conditions in place for professional development of employees (courses, exchange, etc.) in silviculture, protection, exploitation of forests in compliance with appropriate plans, which are adopted by a competent administrative authority and users in cooperation with various stakeholders. Limited and focused partnership, rather than a comprehensive general programmes, are ensuring a successful academic partnership. In MNE there are several active International projects/organization in the field of forestry, which are contributing to the development of Forestry. FODEMO project (Forestry Development in Montenegro) is a donation project, which is establishing communication among foreign experts and domestic institutions (MARD, FA, environmental institutions etc.), and supporting the development of various legislative (Law on forestry, Forest Policy, by-laws etc.) and metodological papers/documents (NFI methodology, FMP methodology). A lot of foreign experts and consultants was engaged through the projects, and they were (and stil) contributing to the development of the sector in MNE. Forestry forum is an event which was held twice (2010. and 2012.) in MNE, and it represents a place for exchange of ideas and knowledge, and for presentation of what was done in past year. IPA funds are also present in MNE, and they are used especially for development of the new Information system in MNE forestry, but also for the incorporation of NATURA 2000 into standard FMP documents and into practice.

3. NFI as a project providing sustainability and future prospects

The first National Forest Inventory of the forests of Montenegro was undertaken in order to create realistic grounds for quality strategic planning in forestry. In methodological terms, this Inventory is compliant with the standards used by countries with long forestry tradition The results of the first National Forest Inventory show substantial differences with these elements compared to previous (available) figures on forests resources of Montenegro. Forests cover 59.9% and forest land covers 9.8% (69.7% all together) of the territory of Montenegro. Standing volume amounts to around 118 mil m^3 with current volume increment of 2.8 million m^3. The reliability and comprehensiveness of these and other results of the National Forest Inventory create realistic grounds for macro-economic planning, provide for correspondence with associations performing monitoring of forest ecosystems at regional and global levels, and place Montenegro amongst countries that have established their Forest Policy on reliable and methodologically appropriate grounds. This data will provide an establishment of the new dimension of the quality of the forest policy, considering the fact that Montenegro is among top forest covered European countries. The data will provide a base for clear defining of the contribution of MNE forests to climate changes mitigation, and will provide high standards for International reporting. Also, the determination of the forest MNE potential for the definition of the biomass energy, with a cooperation of the Ministry of Economy is ongoing.

4. Criteria for sustainable forest management

Sustainable forest management is one of major contributions which forestry as a sector can give towards the accomplishment of the defined goals of sustainable development of any state.

The UNCED (United Nations Conference on Environment and Development), held in Rio de Janeiro in 1992, set the basic principles for sustainable forest management in terms of contribution to sustainable development. “Forest Principles” and Chapter 11 of Agenda 21, adopted at the Conference, included the commitment “to implement sustainable management and utilisation of forests in compliance with national development policies and priorities, as well as in compliance with environmentally defined national guidelines which take into consideration, as needed and if applicable, relevant internationally agreed methodologies and criteria” (Principle 8 d).

We can conclude that this Conference, i.e. the documents adopted at the Conference, vitally influenced the launch of numerous international and national initiatives for the development of criteria and indicators of sustainable forest management. International Tropical Timber Organisation (ITTO) was among the first to develop the criteria and indicators for sustainable management of natural tropical forests. Subsequently, the Center for International Forestry Research (CIFOR), United Nations Environment Programme (UNEP), and World Conservation Union (IUCN) were significantly involved in providing technical support to the development and implementation of criteria and indicators for sustainable forest management. We particularly emphasise the importance of Ministerial Conferences on the Protection of Forests in Europe (MCPFEs), i.e. the resolutions adopted at such Conferences, which commit Montenegro both morally and politically, for the development of criteria and indicators of sustainable forest management in Europe in compliance with the mentioned UNCED principles. In this context, the most important document is the Lisbon Resolution L2 (1998), entitled Pan-European Criteria, Indicators, and Operational Level Guidelines for Sustainable Forest Management, which presents commitments and frameworks for the development of national criteria and indicators.

It was the first case in our legislation, in compliance with the Pan-European guidelines, that the Law on Forests (Official Gazette of Montenegro 74/10) referred to the implementation of criteria and indicators of sustainable forest management. The Article 6 of the Law defines that “Forests and forest land, as ecosystem, shall be administered and managed in a sustainable and multi functional manner in accordance with the criteria and indicators defined by the Ministry”. This results in the commitment to develop and adopt the criteria and indicators as general standards of sustainable forest management in Montenegro.

Criteria and indicators of sustainable forest management in accordance with the Law on Forests (Article 6 paragraph 5) for the needs of management, monitoring and evaluation of sustainability are adopted by the Ministry of Agriculture and Rural Development (MARD). These criteria and indicators determine, *inter alia*, the extent of silvicultural works (compared

to the volume of cutting) which forest owners and beneficiaries are obliged to do (Article 50 paragraph 3).

The Criteria is the general guidelines, norms and manners of action, work and conduct (in forestry profession, of forest owners and beneficiaries and third persons as beneficiaries of forest functions) in the forest and toward the forest, and relate to all aspects of sustainability of forest administration and management. Therefore, these criteria represent general standards of sustainable forest administration and management and can be further linked to specific (more detailed) technical standards for specific fields.

Indicators represent quantitative and qualitative parameters which show the progress i.e. changes in accomplishment of specific criteria. Criteria, and especially indicators, serve as overall parameters for monitoring and evaluation of forest conditions as well as the quality and sustainability of forest management.

Verification sources are documents (analyses, insights, reports, minutes etc.) which contain evaluations of certain indicators in terms of related criteria. In addition to these documents, the main verification source will be the Report on Sustainability of Forest Administration and Management which will be developed in compliance with the related annual monitoring programme adopted by MARD (Article 47 paragraph 1 of the Law on Forests).

Essentially, the criteria and indicators of sustainable forest administration and management in Montenegro represent the framework for the future Forest and Forestry Development Strategy. This Strategy should be developed before them, so that these criteria and indicators could serve as parameters for monitoring and evaluation of implementation of this Strategy. However, since the case here is opposite, the development of this Strategy - based on the previously defined and adopted criteria and indicators which include all the necessary aspects of sustainability of forest administration and management - will be much facilitated.

5. Instead of a conclusion

Based on all relevant facts, it can be stated that the New Forest Law is prepared in line with international and national principles of sustainable development and standards of modern reforms of legal framework of forest sector, such as sustainability, multifunctionality, comprehensive and ecosystem approach, participation of stakeholders and public, service orientation of the national Forest Administration, opportunity of entrusting and privatizing state administration operations, privatization of state forest exploitation / concessions, introducing incentive policies and support to private sector, introducing innovative income of the budget for protection and improvement of forests, etc. Due to this, the New Law is comprehensive, ambitious and offers opportunities for staying in use of a long time.

In order to have better, that is, more efficient forest management and at the same time dedicate ourselves to nature conservation, it will be necessary to set up the transparent system

which will first of all comply with the administrative needs and staff potentials. Challenges such as massive state administration, overlapping of competencies, impact of politics and still non-market economy in this area, as well as negative public perception regarding the forest valorization are problems that have to be overcome by specific system measures, as soon as possible.

At the end, it should be emphasized that continuation of the forestry reforms will significantly change the ultimate results/outcomes if they are not followed by wider reform of institutions and forest resources management. Formal institutional changes in the form of new laws or organizations are not sufficient because if there are no changes in manner people behave, it is difficult to talk about getting to crucial system changes. The attempt of transferring 'the best practices' in institutional reform is significant in the research phase, but do not always present the reply to all our expectations. It is the fact they will give certain assistance understanding how and when institutions should implement reforms. But we should obligatory know that institutional arrangements that have proven successful in one country have both positive and negative effects for other countries. Good reforms take time, and it should be provided in order carry out this process without disturbances. There are no revolutions in forestry and is unlikely that effective organizational reforms will happen faster without previously identified and carefully considered schedule of measures that are in corelation. The fact is that, despite the scope of reforms, there is no uniform"model" or methodology for reforms guaranteeing success. The solution will largely depend on the number of specific factors within the state that involve historical context of forest utilization but also public perception defined through traditions/customs and culture.

We should not forget the fact that Montenegro in 1991. declared itself officialy as an Ecological state (*Article 1 of the Constitution prescribes that,* inter alia, *Montenegro is ecological state, which relies on its official Declaration of Ecological State back in 1991 (Declaration of Ecological State of Montenegro*)), and it is obvious that the forest ecosystems are playing important role in the society, which is becoming more and more opened toward nature.

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ЛЕСНОЕ ЗАКОНОДАТЕЛЬСТВО РЕСПУБЛИКИ БЕЛАРУСЬ И ПУТИ ЕГО СОВЕРШЕНСТВОВАНИЯ

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Резюме. The basic regulations of the Republic of Belarus on forest management and silviculture are presented. Data on volumes of forest exploitation from 1000 to 2010 are analised. The difference between the actual forest and official statistics is remarked. The improvement of dividing of forest land into groups and categories was proposed. An improved method of establishing of the annual allowable cut for the final felling is provided. It is demonstrated that the Belarusian model of forestry sector ensured sustainable development of forest sector and prevents unauthorized forestry.

Ключевые слова: forest legislation, forest management, authorized and unauthorized logging, the Belarusian model of forestry, forest groups, regulations on forestry.

Лесное хозяйство в Республике Беларусь ведется в соответствии с законодательством страны. Лесные отношения в Беларуси регламентируются основным законодательным документом – «Лесным кодексом», принятым в 2000 году. В 2004 году в него были внесены незначительные изменения. В дополнение к кодексу Правительством принят ряд нормативных подзаконных актов. Этими документами определены права владения, распоряжения, управления и пользования лесами в Республике Беларусь.

Лесное законодательство в Беларуси имеет давнюю историю. Приступая к исследованию любых явлений и процессов, мы должны рассматривать их в динамике исторического развития.

Первые правовые акты регулирования общего лесопользования и древесинопользования на территории нынешней Беларуси появились в конце XV века. В 1492 году Великий князь Казимир Ягайлович в своём Уставе или Судебнике отмечает виды наказаний за незаконные порубки леса.

Наиболее полный документ по ведению лесного хозяйства и организации лесопользования появился в 1567 году. Тогда Великий князь Литовский и король Польский Сигизмунд Август II ввел в действие «Уставу и инструкцию господарским лесничим». В этом документе был предусмотрен порядок охраны лесов и пользования его дарами, в том числе и древесиной.

Вспомним, что первый подобный документ в России (Уложение царя Алексия Михайловича) появился почти через сто лет. В этом нет ничего удивительного: регулирование лесных отношений начинается раньше там, где появляется недостаток лесных ресурсов при росте народонаселения. По этой причине лесное законодательство Франции имеет более длительную историю, чем наше, почти на 150 лет. В более раннее время начали регулировать лесные отношения в Германии и Англии.

После присоединения территории нынешней Беларуси к России лесные отношения регулировались Российским законодательством. Этот период достаточно описан в литературе (Жуков, 1940; Багинский, Лапицкая, 2008). Регулирование лесных

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отношений сказывалось в основном на лесопользовании: права на рубку леса, объёмы вырубки, размер санкционированных и несанкционированных рубок. Статистика по этому вопросу отсутствует вплоть до конца XIX века. Поэтому соответствующие данные получены нами косвенным путём – через душевое потребление древесин (Багинский, Есимчик, 1996) и численность населения в разные периоды. Полученные данные приведены в таблице 1.

Таблица 1 – Лесистость и объёмы заготовки древесины на территории Беларуси

Годы	Лесистость, %	Рассчитанный среднегодовой объем лесопользования, млн.м^3	Имеющиеся статистические данные об объемах заготовки по всем видам пользования, млн.м^3
1000	65-75	0,3	-
1300	60-70	0,7	-
1400	60-65	1,0	-
1500	60-65	4,0	-
1600	60	4,0	-
1800	45-50	10	-
1860	44	12	-
1900	37	16	6,5
1913	33	20	7
1918	22	28	-
1936	27	33	18
1940	30	34	19
1944	18	36	10
1955	31	26	8
1975	34	13	10
1985	34	12	11
1991	34	10	10
2001	38	12	12
2010	38,5	14,5	14,5

Из таблицы 1 видно, что резкое увеличение размеров лесопользования произошло с начала XIX века и значительно усилилось после отмены крепостного права.

В таблице учтены объёмы вырубки, которые проводило население для отопления и иных целей и которые не входили в официальную статистику. Если руководствоваться только данными официальной статистики, то выходит, что строения в сельской местности и малых городах не отапливались, что неверно. До конца XX века жилища в сельской местности отапливались дровами. Их значительную часть заготавливали в колхозных лесах, что привело к почти полной деградации этой категории лесов, и, нередко, путём самовольных порубок в государственном лесном фонде.

Наибольший размер рубки леса пришелся на 30-40 годы прошлого века. Этому способствовало то, что с начала 30-х годов была раскритикована, как буржуазная, и отвергнута теория постоянства лесопользования. В этой связи происходили драматические и трагические события, когда многие лесоводы, отстаивающие научный подход, подверглись репрессиям.

Огромный урон лесам нанесла война. Они были уничтожены (вырублены, выгорели) на огромных площадях. В военные годы восстановлением лесов практически

не занимались. Достаточно сказать, что по данным, которые привел Ф.Б. Трибушевский (Багинский, Есимчик, 1996), лесистость Беларуси после её освобождения в 1944 году была самой низкой за всю нашу историю – 17,9%.

В несколько раз перерубалась расчётная лесосека и в годы послевоенного восстановления. Здесь никого нельзя упрекать за перерубы, т.к. необходимо было срочно дать людям кров и тепло. В относительно благополучные 60-70 годы следовало соотнести размер вырубки с научно обоснованными нормами, но это сделано не было.

Если учесть, что средний прирост лесов Беларуси в конце XIX – начале XX вв. составлял 15-20 млн.м^3, т.к. был избыток спелых древостоев, а с конца 20-х годов и до 2000 года из-за вырубки спелых насаждений и доминирования молодняков стал близок к 24-25 млн.м^3 в год, то видно, что до XX века шло накопление биомассы в лесах, а с началом XX века и до 70-х годов велось истощительное лесопользование.

Сегодня, в силу преобладания средневозрастных древостоев, средний прирост достиг величины 28 млн.м^3. Мы выбираем рубками около его половины, но больше взять не можем, т.к. не позволяет возрастное строение лесов, где ощущается недостаток спелых насаждений. Образно выражаясь, мы сегодня отдаем тот кредит, который взяли у леса с начала XX века и до 70-80-х годов.

Истощительное лесопользование привело в начале 60-х годов прошлого века к законодательному решению о снижении возраста рубки в среднем на 1 класс. Эта мера позволила сохранить объемы лесопользования в прежних размерах вплоть до 1960-1980 годов, но результатом истощительного лесопользования стало то, что уже к 1991 году в Беларуси оставалось 2,4% спелых древостоев, в т.ч. по хвойным – 2,2%. Если же из этого количества исключить сосну по болоту V бонитета и ниже, то спелых хвойных древостоев оставалось всего 1,8%.

Но, как говорится, «не было бы счастья – да несчастье помогло». Наступивший экономический кризис с конца 80-х и до второй половины 90-х годов привел к резкому снижению потребления древесины. Если до 1989 года в дополнение к 10-11 млн.м^3 древесины, которые с 70-х и до конца 80-х годов ежегодно заготавливали в лесах республики по всем видам рубок, ввозили ещё 2-3 млн.м^3 пиловочника и фанерного кряжа, то в 1992-1998 гг. заготовки упали до 7-8 млн.м^3. Но и эту древесину было трудно реализовать, хотя экспорт круглого леса возрос в несколько раз, достигая 2-2,5 млн.м^3. До 1990-х годов экспорт древесины в переводе на круглый лес (в основном вывозилась мебель и фанера) не превышал 1 млн.м^3. Добавим сюда леса, исключенные из лесопользования из-за радиоактивного загрязнения после аварии на Чернобыльской АЭС. Все это способствовало накоплению спелых древостоев. В этом состоянии наше лесопользование подошло к XXI веку.

В правовом отношении лесопользование рассматривается как санкционированное, так и несанкционированное в виде самовольных рубок, представляющих собой хищение древесины. Несанкционированные рубки в лесах Беларуси за последние 15 лет составляют совершенно незначительную долю в общем объёме вырубки леса. За последние 10 лет самовольные порубки не превышают 0,07-0,1% от объёма лесозаготовок. При этом в 75-85% случаев виновные установлены. Так, в 2009 году такие вырубки составили 2,7 тыс м^3,где в 89% случаев выявлены и наказаны виновники. За 2011 год соответствующие показатели составляют соответственно 5,1 тыс м^3 и 97%. Приведенные цифры составляют соответственно 0,02 и 0,04% от общего объёма заготовки древесины в республике. Напомним, что ещё 40-60 лет назад самовольные вырубки достигали значительной величины – до 4-6% от объёма вырубки.

Резкое снижение объёма несанкционированных рубок в Беларуси обеспечили следующие мероприятия:

● существенное увеличение (в 8-10 раз) объёмов рубок ухода, начиная с конца 60-х годов прошлого века, что позволило удовлетворить потребности в древесине местного населения и юридических лиц в сельской местности;

●уменьшение сельского населения и изменение его возрастной и гендерной структуры, что привело к общему сокращению потребности в древесины и к изменению структуры потребления, где преобладает приобретение её в готовом виде;

● газификация села, что сократило потребление дров;

● снижение темпов строительства жилья на селе против бурного послевоенного восстановления деревень, которое завершено к середине 60-х годов прошлого века;

● усиление борьбы с самовольными порубками;

● чёткая разрешительная система отпуска древесины, позволяющая контролировать законность лесопользования на всех его стадиях.

При этом с увеличением возможностей легального получения древесины менялась законодательная база в отношении самовольных порубок. В 50-60 годы прошлого века легальное получение древесины местным населением было затруднено. В то же время было весьма проблематичным привлечение самовольных порубщиков к ответственности. Эта процедура была весьма сложной и не всегда выполнимой. Требовалось проводить сличение срезов на комлевой части срубленных стволов и пней в присутствии депутата сельского совета и другие процедурные трудности. Безоговорочная ответственность наступала лишь в случае добровольного признания нарушителя, что случалось редко. Отсутствие разрешительных документов на древесину не являлось основанием для привлечения к ответственности.

С появлением легальной возможности покупки древесины по доступным ценам доказательная база по совершённым лесонарушениям изменилась коренным образом. Теперь уже требовалось предъявить разрешительные документы на вывезенную древесину, что сняло проблему доказательства факта незаконной рубки.

Всё изложенное привело к тому, что белорусская модель ведения лесного хозяйства и лесопользования законодательно и фактически позволила снять проблему несанкционированных рубок. Конечно, борьба с отдельными проявлениями самовольных порубок у нас продолжается, но принципиального значения эти вырубки уже не имеют в силу их незначительной доли в общем объёме лесозаготовок.

По праву владения все леса Беларуси находятся к исключительной собственности государства. Распоряжение лесами осуществляют Президент Республики Беларусь, Парламент и Совет Министров Республики Беларусь. Управление лесным фондом возложено на ряд министерств и ведомств, где ведущую роль играет Министерство лесного хозяйства и его органы на местах (лесхозы) – свыше 85%. Из других министерств и ведомств наибольшая площадь лесов находится в ведении Управления делами Президента Республики Беларусь – свыше 7%. Положительным моментом стала передача колхозных лесов в состав Гослесфонда, проведенная в конце 1990-х годов. Это позволило навести порядок во всех лесах и управлять ими на единой законодательной базе.

Четкая иерархическая структура управления лесами доказала свою эффективность. Так, в Беларуси практически отсутствует уже упоминавшаяся проблема несанкционированных рубок леса. Завершается сертификация лесов Беларуси по системе FSC. Весьма эффективно проявила себя белорусская модель лесного хозяйства в борьбе с лесными пожарами. В очень сложные в пожарном отношении 2010 и 2011 годы, когда в соседней России горели десятки тысяч гектаров леса, белорусские лесоводы удержали ситуацию под контролем.

Пользование лесом осуществляется в установленном порядке юридическими и физическими лицами разных форм собственности. Правовых различий в лесопользовании для предприятий разной формы собственности нет.

В лесном хозяйстве Беларуси есть проблемы, требующие решений, в том числе на законодательном уровне. Одной из основных проблем является здесь несовершенное деление лесов на группы и категории защитности.

По Государственному учёту лесов Беларуси по состоянию на 1.01.2011 года леса I группы занимают 4849,2 тыс.га или 51,4% от всей площади лесного фонда, леса II группы имеют площадь 4583,5 тыс.га или 49,6% (Государственный учет лесов, 2011).

При этом отличия в ведении хозяйства в леса первой и второй группы сводятся в основном к различиям лишь в главном пользовании. Наши исследования, проведенные в модельных лесхозах Белорусского Полесья (Мозырский, Хойникский, Лельчицкий), показали, что при проведении рубок ухода, а также при лесовосстановлении, охране и защите леса разницы между группами лесов нет. Ещё меньше разница между отдельными категориями лесов.

В то же время наличие большого числа категорий лесов, где декларированы разные цели хозяйства, а на деле оно ведётся однообразно, вносит путаницу в сознание лесоводов и создаёт иллюзию многообразия в ведении хозяйства в зависимости от его целей. Ещё большая неопределённость существует при отнесении лесов к особо охраняемым территориям. Далеко не все леса, где запрещено лесопользование, к ним отнесены. Фактически особо охраняемых территорий у нас в несколько раз больше, чем числится по официальной статистике. Поэтому одной из важных проблем в лесном хозяйстве Беларуси является совершенствование деления лесов на группы и категории.

За прошедшие десятилетия существенно изменились условия ведения хозяйства в стране. Старое деление на группы и категории лесов уже не соответствует современным требованиям. В настоящее время большое внимания уделяется выделению особо охраняемых природных территорий (ООПТ). В Беларуси к ним относят заповедники, национальные парки и заказники республиканского значения. Их общая площадь (около 7% территории страны) соответствует международным нормам и даже несколько превышает их. При этом в ряде европейских стран ООПТ выделены в районах крайнего Севера, в высокогорьях и т.д. В Беларуси ООПТ представлены в значительной мере высокопродуктивными лесами.

Казалось бы, с ООПТ в Беларуси все ясно. Но как расценивать тот факт, что Полесский радиационно–экологический заповедник площадью 216 тыс. га, расположенный в Гомельской области, не относится к ООПТ, хотя режим хозяйства в нем гораздо строже чем в заказниках и национальных парках. Он является резерватом размножения многих животных (зубр, лось, олень, кабан, бобр, лошадь Пржевальского, волк и т.д.) и местом надежного сохранения краснокнижных растений и животных.

Конечно, все леса I группы (4 млн. га) не могут быть отнесены к ООПТ. Но нельзя согласиться с тем, что почти на 20% площадей белорусских лесов исключено из расчета главного пользования. Далеко не все они относятся к ООПТ. Поэтому необходимо изменить деление лесов на группы и категории.

Предложенное нами новое деление лесов на группы (Багинский, 2009) позволяет четко очертить ООПТ лесами I группы. В лесах предлагаемой нами II группы лесопользование будет вестись примерно по правилам современной I группы, а режимы эксплуатационных лесов (III группа) останутся без изменения.

Необходимо ограничить выделение особозащитных участков. Часто первоначальная причина их назначения давно утрачена, и они сохраняются по инерции. Например, какова была первоначальная цель выделения особозащитных полос вдоль

железных и шоссейных дорог с запрещением рубок главного пользования. В 1943 и сразу после войны это было очевидно – маскировка дорог для защиты их при бомбежках. Являются ли сегодня это требование актуальным? Вопрос риторический. Изменение принципов выделения групп и категорий защитности лесов требует изменения отдельных положений Лесного Кодекса, что желательно сделать в ближайшие годы.

Прерогативой Правительства является также установление возрастов рубки леса. Современные возрасты рубок установлены в 2001 году. Они в основном повторили те значения возрастов рубок, которые были приняты в начале 60-х годов прошлого века. Эти возрасты уже не соответствуют принципам устойчивого развития как с экономической, так и с экологической точек зрения. При установлении возрастов рубки надо руководствоваться не только технической спелостью, как это делали раньше, но и эколого-экономической.

В лесном хозяйстве Беларуси требуется улучшение ряда подзаконных нормативных документов. Одним из важнейших является здесь инструкция по расчёту размера главного пользования лесом. В 60-80 годах прошлого века шло постепенное уменьшение процентной доли спелых древостоев. При этом методика расчёта размера главного пользования предусматривала его относительное постоянство. В лесоустроительных проектах обязательно был расчёт количества спелых древостоев на конец ревизионного периода. Результаты расчётов здесь всегда были положительными, но площади спелых неизменно уменьшались с каждым ревизионным периодом. Не удивительно, что к 1991 году доля спелых насаждений приблизилась к абсолютному минимуму – чуть более 2%. Мы разбирались в причинах этого явления и вскрыли их (Багинский, Толкачев, 2005), но это осталось не замеченным.

Дело оказалось в порочной практике несоответствия установления и практического использования расчётной лесосеки. Она рассчитывалась и утверждалась в полном соответствии с рекомендациями науки. Определяли ежегодную площадь вырубки. Умножив вычисленную площадь ежегодной вырубки на средний запас спелых древостоев на 1 га, находили ежегодный запас, подлежащий вырубке. До этих пор методика расчётов была безупречной.

Далее начинались реалии воплощения расчётов в жизнь. Первые 1-3 года всё шло по плану. Но, хотя в приспевающих и спелых древостоях рубки ухода не проводят, в них допускаются санитарные рубки. Они и проводились, и весьма интенсивно. В результате средний запас на одном гектаре уменьшался и довольно значительно. Выборка древесины по санитарным рубкам не компенсировалась приростом, который в спелых насаждениях невысок.

Директивные орган получал данные о расчётной лесосеке в кубометрах. Распределяли они кубометры, а не гектары спелого леса. Лесхозы были обязаны вырубить или передать другому лесопользователю запланированный к вырубке (в размере расчётной лесосеки) объём древесины в кубометрах. Если же на рассчитанной площади нужного количества древесины не находилось, а выполнять плановый объём отпуска леса было необходимо (этот показатель строго контролировался), лесхозу приходилось добирать нужные объёмы за счёт увеличения площади вырубки. Так возникали «ножницы» между расчётами лесоустройства и реальными вырубками. Хотя переруба расчётной лесосеки вроде бы и не было (по запасу), но фактически расчётная лесосека перерубалась на 20-30%. Естественно, что площади спелых древостоев постоянно сокращались.

В 90-е годы прошлого и в начале нашего века эта проблема отошла на задний план, так как лесосека не вырубалась полностью. Положительную роль сыграло и

включение в методику расчёта лесопользования требования о минимальном периоде вырубки спелых древостоев. В результате количество спелых лесов стало постепенно увеличиваться.

В то же время «ножницы», как методический недочёт между установлением расчётной лесосеки по площади и её отпуском по запасу, остаются. Поэтому описанная проблема должна быть решена при составлении прогноза объёмов лесопользования в процессе разработки нового стратегического плана развития лесного хозяйства Республики Беларусь. Конечно, планирование отпуска древесины (или реализации её на бирже) должно осуществляться в кубометрах, но надо предусмотреть механизм, исключающий потенциальные перерубы расчётной лесосеки по площади.

Методика расчёта ежегодных объёмов лесопользования, принятая в Беларуси, за последние годы доказала возможность сохранить с её помощью непрерывность, неистощительность и относительное постоянство лесопользования. Поэтому эту методику после внесения некоторых изменений, исключающих вышеупомянутые «ножницы», следует сохранить на будущее.

У нас чрезмерно велико количество лесов, исключенных из лесопользования – 19%. При этом из лесопользования часто исключены не только низкопродуктивные леса на верховых болотах и т.п., но и высокопродуктивные насаждения. Здесь необходимо провести дополнительные исследования и установить экономически и экологически приемлемые норматива лесов, исключаемых из лесопользования. Наша страна не настолько богата, чтобы в угоду амбициям отдельных экологов нерационально использовать свой природный потенциал.

В настоящей статье освещены лишь главные проблемы совершенствования лесного законодательства. Эта тема должна быть постоянно в центре внимания лесоводов. Предложения по совершенствованию ведения лесного хозяйства, в том числе и на законодательном уровне, постоянно вносятся учеными и практиками и обсуждаются общественностью и, хотя и медленно, но решаются.

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The Bundle of Rights Theory and Private Forest Ownership in Turkey

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Abstract

In Turkey, forest lands cover 21,5 million ha or 27,2 percent of the national territory. Almost half of these forest resources are degraded and the other half is productive. In Turkey, there are three types of forest ownership[6]: State, private and forests belong to public legal entities other than the State. Regardless of ownership structure all forestlands are under the control and supervision of the State and such a statutory power is assured by a constitutional provision. At 99,5 percent of the total, State forest ownership dominates, leaving private and public ownership with only about 0,5 percent of all forestlands. The owner of a private forest has a real property right on it by considering private law but the owner must use and exploit the forestlands by obeying the rules of public law too, which means that he has a kind of restricted real property rights. As applied to public forests, the State has a right and obligation to care and supervision on private forests.

In the light of the introductory knowledge summarized above, private forest ownership is discussed in this article by considering the Turkish Constitution of 1982, the Turkish Civil Code, the Forest Code, and the Bundle of Rights Theory. For this purpose, in the introductory section of the study, the Bundle of Rights Theory and ownership concept are both discussed. Then, the current situation of private forest ownership in the context of the Bundle of Rights Theory is pointed out.

Keywords: private forest, ownership, the bundle of rights theory

1.Conceptual Descriptions

1.1. The Concept of Ownership both in the Turkish Constitution of 1982 and the Turkish Civil Code

The origin of private property rights forming the basis of our topic is based on ***right to ownership*** described in article 683[7] of the Turkish Civil Code (TCC). More important than that, private property rights are under the protection of the Turkish Constitution of 1982. Article 35 of the Turkish Constitution of 1982 indicates exactly that "*Everyone has the right*

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[6] Article 4 of the Forest Code—the code was enacted in 1956 and is still in force.

Three categories of forest ownership are accepted as:

(1) State forest

(2) Forest belonging to public legal entities

(3) Private forest

[7]Article 683 of the Civil Code numbered 4721: Person who owns a thing, within the limits of law order, has power of using, benefiting and disposing on that thing at his or her discretion. Owner, as well as he or she may institute action of recovery against the person who possesses his or her property unjustly, he or she may also claim prevention of all kinds of unjust possession.

to own and inherit property. These rights may be limited by law only in view of public interest. The exercise of the right to own property shall not be in contravention of the public interest." By staying within legal limits, the owner is given to *right to use, right to benefit, and right to dispose* by the article. Thus, the most extensive power and authority that a person could ever have on a thing is given by the ownership. Right to use can be used by the owner stand alone or with someone else as his/her discretion. By using (*usus*) a thing subject to ownership directly, an owner can use his/her house whether furnished or leave it empty as he/she wishes. The owner, taking advantage of his/her natural and legal yields (*fructus*), can generate new natural and legal yields, and collect those yields and revenues generated from. The owner of a thing can assign ownership to someone else in a legal or substance way, or can limit with ***limited rights in rem***. If the property in question is to subject to disposition, owner can dispose or destroy it. Without the need of anyone's permission, owner can cancel his/her property by waiver from his/her right to ownership (Saymen and Elbir, 1954; Ertaş, 2002). Thus, the owner can use the property for him/herself or make someone to use the property whether in a gratuitous way or not. The right of disposition gives some powers to the owner such as transferring ownership of a property to someone else through legal processes, establishing other rights on it, and also gives some other powers to the owner including the opportunity to make the actual dispositions on the property by changing the structure of the property, by depleting the property, and by destructing the property (Dural and Sarı, 2009). The mean of the right of disposition is that the owner can give every possible decision on the property and act of all kinds which may cause specific legal consequences (Oğuzman et al, 2004).

There are also less powerful rights than the right to ownership in the Turkish Civil Code numbered 4721 called as ***limited rights in rem***, and those rights are indicated in a limited number in the Code as follows: Easements[8], Real Burdens[9], and Possessory lien (*Jus pignoris*). Those *limited rights in rem* cover only some of the powers given by the right to ownership. This means that owner may just use or benefit from property, or have right to dispose it. In other words, those rights provide only a specific and limited sovereignty to right holder on the property (Karahasan, 1975). From the above-mentioned three limited rights in rem, only easement can be established over the State forests because of the mandatory article 169[10] of the Turkish Constitution. Real Burdens and Possessory lien cannot be established

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8 Article 779 of the Civil Code numbered 4721: An immovable property may be encumbered in favour of another property such that the servient owner must permit the owner of the dominant property to exercise certain rights over it to or may not exercise certain of the rights attaching to his or her property for the benefit of the owner of the dominant property.

9 Article 839 of the Civil Code numbered 4721: A real burden obliges an owner of immovable property to fulfil an obligation to a beneficiary for which he or she is liable solely with the immovable property.

10 Article 169 of the Turkish Constitution: The state shall enact the necessary legislation and take the measures necessary for the protection of forests and the extension of their areas. Forest areas destroyed by fire shall be reforested; other agricultural and stock-breeding activities shall not be allowed in such areas. All forests shall be under the care and supervision of the state.

The ownership of state forests shall not be transferred to others. State forests shall be managed and exploited by the state in accordance with the law. Ownership of these forests cannot be acquired through prescription, nor shall servitude other than that in the public interest be imposed in respect of such forests.

Acts and actions which might damage forests shall not be permitted. No political propaganda which might lead to the destruction of forests shall be made; no amnesties or pardons specifically granted for offences against forests shall be legislated. Offences committed with the intention of burning or destroying forests or reducing forest areas shall not be included within the scope of amnesties or pardons applicable on other occasions.

The limiting of forest boundaries shall be prohibited, except in respect of areas whose preservation as forests is considered technically and scientifically useless, but whose conversion into agricultural land has been found to

over the forests both belonging to state and public legal entities. However, there is no constitutional provision that prohibits real burdens and possessory lien over the private forests.

Type of the easements in the Civil Code may be listed according to powers provided by as follows:

a) **Usufruct[11]:** It confers complete enjoyment of the object on the usufructuary.
b) **Right of Residence[12]:** The exclusive right to make sole use of specific parts of a building
c) **Right of Building[13]:** Gives power to erect or maintain a construction above or below ground on such land.
d) **Right of Access to Water Sources[14]:** The right of access to a water source on a parcel of land owned by another encumbers such land with a servitude permitting the drawing and channeling-off of water.

After specifying the above-mentioned easements in particular, the Civil Code organizes other servitude to be established in general according to the wishes of the persons and type of goods under the title of ***Other Easemenst[15]*** (Dural and Sarı, 2009). ***Right of Way[16]*** is to be given as an example for the other easemenst, which is a positive easement and is actively utilized by the owner of the right (Oğuzman and Barlas, 2010). Due to the nature

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be definitely advantageous, and in respect of fields, vineyards, orchards, olive groves or similar areas which technically and scientifically ceased to be forest before 31 December 1981 and whose use for agricultural or stock-breeding purposes has been found advantageous, and in respect of built-up areas in the vicinity of cities, towns or villages.

[11] Article 794 of the Civil Code numbered 4721: A usufruct may be held over chattels, immovable property, rights or assets. Unless otherwise provided, it confers complete enjoyment of the object on the usufructuary.

[12] Article 823 of the Civil Code numbered 4721: The right of residence gives the power to benefit in all or part of a building as housing
The right of residence is neither transferable nor heritable.
It is subject to the provisions governing usufruct unless the law provides otherwise.

[13] Article 826 of the Civil Code numbered 4721: gives power to the owner of an immovable make a third person to be able to erect or maintain a construction above or below ground on such land.
Unless otherwise agreed, this right is transferable and heritable.
If the building right has the character of a distinct and permanent right it may be recorded in the land register as ***immovable*** property.
A building right at least for 30 years has the character of permanent

[14]Article 837 of the Civil Code numbered 4721: An easement on a water resource on a land owned by others obliges owner of the land to accept the drawing and channelling-off of water on such land.
Unless otherwise agreed, the right is transferable and heritable.
If the right of access to water is distinct and is established at least for 30 years, it may be recorded in the land register as immovable property.

[15] Article 838 of the Civil Code numbered 4721: An owner may establish other servitudes on his or her property in favour of any person or group if such servitudes meet a particular need, such as rights of access for shooting practice or rights of way.
Unless otherwise agreed, such servitudes are non-transferable and their nature and scope is based on the beneficiaries' normal needs.
In other respects they are subject to the provisions governing easements.

[16]Article 747 of the Civil Code numbered 4721: Where a landowner does not have adequate access from his or her land to a public thoroughfare, he or she has the right to require his or her neighbours to grant him or her the necessary right of way in exchange for full compensation.
This right is in the first place exercised against the neighbour who, in the light of existing ownership and access circumstances, may most reasonably be expected to grant such right of way, and secondly in respect of the neighbour for whom it is least damaging.
When determining the route of a right of way, the interests of both parties must be taken into consideration.

of the ***Right of Residence***, which is not applicable over the forest resources, fall outside the scope of our study. There are also other rights which can be established against the owner in favor of third parties in the Civil Code arising from Law of Neighbors and Common Law. Those rights are ***encroaching buildings***, ***right to conduits*** and ***right to access.***

In the end, when taking into consideration both ***limited rights in rem*** and other rights arising from the Law of Neighbors in the Civil Code concerning with forest resources, we may list the rights on the subject as follows: usufruct, right of building, right of access to water sources, right of way, right to access.

1.2.The Bundle of Rights Theory

The traditional and commonsense view is that ownership is a relation between a person and a thing, whereas the modern and sophisticated view is that ownership is a bundle of rights (McCarty, 2002). Based on comparative law, property rights are usually explained by the Bundle of Rights Theory. The bundle-of-rights conception now dominates property law and legal training (Nash and Stern, 2010). The earliest use of the term "bundle of rights" appears to be from John Lewis, in his 1888 book, *A Treatise on the Law of Eminent Domain*. Though its modem version is usually attributed to Wesley Hohfeld, he never mentions a "bundle of rights" (Heller, 1999). According to Hohfeld (1964), the property consists of the following elements: 1) A claim against others to exclusive physical control of the property, other persons would have a duty not to use the property in any way, or take any actions that would harm or destroy it. 2) A liberty to use (or consume, or destroy) the property. 3) A power to transfer all (or some) of these rights to another person. 4) An immunity from the involuntary expropriation of these rights by other persons.

Thomas Grey and Charles Donahue, Jr., in their contributions to a Nomos symposium on Property in 1977, Grey writes about the disintegration of property in the modern world, arguing that the term "property" no longer denotes a coherent concept and suggesting that this fact is politically significant. Part of Grey's analysis is that the concept of ownership had evolved from the time of Blackstone to the time of Hohfeld. This evolution was internal to the development of capitalism, Grey suggests. As the industrial economy matured, it became necessary to divide and rearrange the simple ownership of objects into more and more complex forms. But these new forms were primarily the constructions of lawyers, and their work was greatly facilitated by the analysis of property as a "bundle-of-rights" (McCarty, 2002).

The bundle of rights concept of property replaced a physicalist, absolutist understanding of property. It rejected any contention that property is about things (objects) or people's relationships with things. The central premise of the bundle of rights conception of property is that property is a set of legal relationships among people, and therefore most emphatically is neither ownership of things nor relationships between owners and things Scholars disagree about precisely which rights the property bundle contains (Arnold, 2002).

According to tile civilians, property involves six rights: a *jus possidendi* or right of possessing, a right in the strict sense; a *jus prohibendi* or right of excluding others, also a right in the strict sense; a *jus disponendi* or right of disposition; a *jus utendi* or right of using; a *jus fruendi* or right of enjoying the fruits and profits; and a *jus abutendi* or right of destroying or injuring if one likes (Pound, 1939)

Honoré[17]'s incidents-analysis of ownership makes it possible to follow a rather interesting line of thought regarding the nature of all property rights in a contextualized rather than a strictly personalized framework, namely as a series of variable and contingent collections of incidents. Honoré distinguishes eleven standard incidents of ownership, namely 1) the right to possess, 2) the right to use, 3) the right to manage, 4) the right to the income of the thing, 5) the right to the capital, 6) the right to security, 7) the incident of transmissibility, 8) the incident of absence of term, 9) the prohibition of harmful use, 10) liability to execution, and 11) the incident of residuarity (VanDerWalt, 1995; Lee, 2009).

Based on the above classification of Honoré, Penner (1996) re-grouped such rights in itself as follows: 1) the right to possess, 2) the right to use, the right to manage, and the right to income, 3) the right to capital, 4) power to alienate, 5) the right to security, 6) transmissibility and absence of term, 7) the prohibition of harmful use, 8) liability to execution, 9) the incident of residuarity.

The meaning of each of the rights, mentioned above under various names, in the bundle was summarized and explained by Lewis (1985) as below:

1-The right to use: The word "use" designates, in this instance, the owner's personal use and enjoyment of the property owned. According to the Honore (1961), it means that on a wide interpretation of 'use', management and income fall within use. On a narrow interpretation, 'use' refers to the owner's personal use and enjoyment of the thing owned. On this interpretation it excludes management and income.

2-The right to manage: This is the right to determine how, and by whom, the property owned shall be used. According to Honore (1961) this right depends, legally, on a cluster of powers, chiefly powers of licensing acts which would otherwise be unlawful and powers of contracting.

3-The right to income: This is the *ius fruendi*, the right to take, to use and to consume or dispose of the fruits of the property. According to Goold (2005), this right represents any income to be generated from the property. According to Honore (1961), it means that income in the more ordinary sense (fruits, rents, profits) may be thought of as a surrogate of use, a benefit derived from forgoing personal use of a thing and allowing others to use it for reward; as a reward for work done in exploiting the thing; or as the brute product of a thing, made by nature or by other persons. Obviously the line to be drawn between the earned and unearned income from a thing cannot be firmly drawn.

4-The right to capital: The right to the capital consists in the power to alienate the thing and the liberty to consume, waste or destroy the whole or part of it: Clearly it has an important economic aspect (Honore, 1961)

5-The right to security: One of the characteristic rights of ownership, in principle, is that the owner should be able to remain such for so long as he chooses. According to Honore (1961), it means that legally, this is in effect an immunity from expropriation, based on rules which provide that, apart from bankruptcy and execution for debt, the transmission of ownership is consensual. It is important that when expropriation takes place, adequate compensation should be paid

6-The incident of absence of term: In principle, the right of ownership is "unlimited in point of duration". But this proposition is clearly untenable in view of the recognition given to institutions such as fideicommissa. It has always been possible for the owner of property to dispose of it to another. According to Goold (2005), absence of term refers to the

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[17] Honore, Anthony M. (1961). "Ownership", in Guest, AG, ed, Oxford Essays in Jurisprudence: First Series, Oxford: Clarendon Press, 107–147.

indeterminate length of one's ownership rights. Ownership would continue indefinitely unless terminated by the owner.

7-The incident of transmissibility: This is the other aspect of duration, and includes the owner's right to ensure the passing of his property on his/her death. According to Goold (2005), it means that the power of transmissibility gives to the owner the ability to devise or bequeath the object. Hence, upon death the object will be transmissible by will, or otherwise in accordance with the rules of succession, to the owner's successors.

8-The prohibition against harmful use: This incident is an obligation inherent in ownership, and finds expression in the principles of the law of nuisance, the doctrine of abuse of rights, and other specific actions that may be brought against the owner who uses his property in such a way as to harm his neighbor.

9-Liability to execution: Of a somewhat similar character is the liability of the owner's interest to be taken away from him/her for debt, either by execution of a judgment debt or on insolvency (Honore, 1961). Indeed, since the classical era of Roman law, when it was realized that the personal arrest of the debtor was not the most effective way of ensuring satisfaction of the debt, the levying of execution against a judgment debtor's property has been the principle method of enforcement of judgments (Goold, 2005).

10-The right to possess: The right to have the exclusive physical control of the property. There are two aspects to this right: In the first place, the right to be placed in control, and secondly the right to remain in control (Honore, 1961). If the object cannot be physically possessed, that is, where the object is intangible or immovable, this right may be regarded as a right to exclude others from use or from benefit derivable from the object (Goold, 2005).

11- The residuary character of ownership: This is the characteristic of ownership that distinguishes it from all other rights which one may have in a thing. The essence of this aspect of ownership is that when all rights in property which are held by persons other than the owner cease-for example when leases or servitudes terminate-these rights automatically revert to the owner (Goold, 2005). Anyone having an interest less than ownership should not be considered as an owner of property but as having proprietary rights - rights which the owner grants to others without losing his general right of ownership (Bhalla, 1981).

In the next section of this study, in light of the above conceptual explanations, the relevant articles of the Forest Code will be analyzed, and what property rights provided to the owner and the third parties will be revealed.

2. Types of Use Rights of the Owner on Forest Resources

In this section of the study, the property rights provided by the Forest Code will be clarified in a comparative way by considering both the property rights provided by the Civil Code and The Bundle of Rights Theory. Thus, actual status of the property rights that are scattered in the Forest Code will be identified. Administrative permissions in the Forest Code are outside the scope of this study. However, these administrative permissions will be discussed when it's necessary. In order to increase the understanding of the subject, we prefer to use comparison tables as follows.

Table 1. General status of the property rights arising from ownership over the state forests[18]

Type of The Property Rights Arising From Ownership	As in the TCC		As in The Bundle of The Rights Theory	The Relevant Articles of The Forest Code No. 6831
	TCC, Article 683/I	The right to use	The right to use	6
			The right to manage	6,13,15,16,17,18,19,20,21,22,23,24,25,26,27,28,30,31,32,33,35,36,37,40,44,57,58,59,115, additional article 8
			The right to possess:	6
			The prohibition against harmful use	No relevant article
		The right to benefit	The right to income	6,16,17,18,25,30,31,32,33,35, 36,37,40,44,85,115, additional article 8
		The right to dispose	The right to capital	2/A,2/B,13
			The right to security	No relevant article
			The incident of absence of term	16,17
			The incident of transmissibility	No relevant article
			Liability to execution	No relevant article
			The residuary character of ownership	4
	TCC, Article 683/II, 730	Protection		79,81,82,83,84,86,87,88

[18] Due to the page restrictions: Please see official website of The General Directorate of Forestry for the mentioned articles of the Forest Code in the table: http://web.ogm.gov.tr/languages/English/dokumanlar/dgf6831law.pdf Access to website: 30.06.2012

Table 2. General status of the property rights arising from ownership over private forests[19]

Type of The Property Rights Arising From Ownership	As in the TCC		As in The Bundle of The Rights Theory	The Relevant Articles of The Forest Code No. 6831
	TCC, Article 683/I	The right to use	The right to use	51,52
			The right to manage	15,17,42,51,52,55,56
			The right to possess:	50
			The prohibition against harmful use	No relevant article
		The right to benefit	The right to income	17,51
		The right to dispose	The right to capital	52
			The right to security	51, 52, 55
			The incident of absence of term	17
			The incident of transmissibility	52
			Liability to execution	No relevant article
			The residuary character of ownership	4
	TCC 683/II, 730	Protection		55

The most controversial part of this section is private forests. It is possible that articles 15., 17., 42., 50., 51., 52., 55. and 56. of the Forest Code can be evaluated in the scope of the right to use provided by the right to ownership when considering the TCC and The Bundle of Rights Theory. Similarly, it is possible that articles 17. and 51. of the Forest Code can be

[19] Due to the page restrictions: Please see official website of The General Directorate of Forestry for the mentioned articles of the Forest Code in the table: http://web.ogm.gov.tr/languages/English/dokumanlar/dgf6831law.pdf Access to website: 30.06.2012

evaluated in the scope of right to benefit provided by the right to ownership when considering the TCC and The Bundle of Rights Theory. By the same token, articles 4., 17., 51., and 52. of the Forest Code can be evaluated in the scope of right to dispose provided by the right to ownership when considering the TCC and The Bundle of Rights Theory. The articles 683/II and 730 of the TCC, and article 55. of the Forest Code can be taken into account for the power of protection provided to the owner.

According to articles 26., 46. and 51 of the Forest Code, all types of forests are required to have management plans. In all types of forest, use rights allow their holders to withdraw resources in accordance with management plans. In practice, however, rights to grazing, recreation and traditional hunting are not planned; instead, the users of these resources, who are forest dwellers and the public, exercise these rights according to traditional law and customs (Güneş and Coşkun, 2008).

Table 3. Ownership, use rights and management agreements

Use right/ Management Category	**Management Agreement**	**Types of Enjoyment**	**Legal Basis**	**Users**	**Ownership**	**Manager/ Supervisor**
Hunting	License	Withdrawal	Statutory	The public	Public or private	State and private entity
Tourism investment	License or easement	Alienation	Statutory	Investors	Public or private	State and private entity
Grazing	Permit	Withdrawal Access	Statutory or traditional	The public	Public or private	State and private entity
City forests	Agreement	Access	Traditional	The public	Public	State
Harvesting	Contract	Withdrawal	Statutory	Local people and forest	Public	State
Forest villagers' rights	Agreement	Withdrawal Access	Statutory or traditional	Local people and forest villagers	Public	State
Afforestation	Contract	Alienation	Statutory	The public and local people	Public or private	State and private entity
Construction	License or easement	Alienation	Statutory	Investors	Public or private	State and private entity
Water resources	License	Withdrawal Access	Statutory or traditional	The public and investors	Public or private	State and private entity
NWFPs	License	Withdrawal Access	Regulatory or traditional	The public, investors or local people	Public or private	State and private entity
Hunting and tourism	License	Withdrawal	Statutory	Investors	Public or private	State and private entity
Recreation	Agreement	Access	Statutory or regulatory and	The public	Public or private	State and private entity
Sale	Contract	Alienation	Statutory	Owner	Private	Private entity

(Güneş and Coşkun, 2008)

3.Discussion

While giving the powers of the right to use, the right to benefit, and the right to dispose arising from the ownership to the private forest owner, the Forest Code also indicates the specific way of how to use those rights via its related articles. As an exceptional base, by the article 14/A and B of the Forest Code, the prohibition against harmful use is not valid over the private forests. By the mentioned article, an owner of the private forest is able to use his/her right for abusing. It is clear that this article would have a negative impact on the sustainability of forests. Private forests can also be subject to the liability to execution and compensation for the owner's debts even if it is not stated explicitly in the Forest Code due to the private law rules.

If the provisions related with the private forest ownership are evaluated together and the right to use is taken as a base, it is easy to understand that the main purpose is to protect the existing private forests and is to manage those forests within a certain management plans. Therefore, private forest owners unable to allocate property rights as they wish and prefer to use. The owner doesn't have any options when it comes to speak about use rights and powers bestowed on him/her by ownership, such as taking no action over the forest or leaving the forest as its actual condition. The owner must exploit the forest resources in accordance with management plans by virtue of mandatory provision of the Forest Code--articles 51. This compelling factor prevents the owner's own will, interest, and desire of which representing the main and indispensable philosophy of property rights.

When we consider *the right to benefit* arising from ownership, the situation is mainly not much different. Owner has primarily to obtain permission from the Ministry of Forestry and Water Affairs. More important than that, there is a limited number of the way of benefiting from the forests by virtue of mandatory provision of the Forest Code--article 17. Article 17 prevents owner to establish new and alternative ways of benefiting in favor of third parties as his/her discretion. In other words, article 17 directly draws framework for the owner's right to benefit. While evaluating the subject in terms of private and state ownership, an inequality emerges against private ownership again. If the owner wants to make construction for his/her own use in his/her forest, by virtue of mandatory article 17, the construction, which is appropriate to development plan and not over 6% of horizontal area, can be realized. But, if there is a public interest and necessity for facilities, there is not such a 6% of horizontal area limitation both on the state and private forests.

The right to dispose, which is the most prominent characteristic of the ownership is subjected to a bilateral arrangement in the case of private forests. In the first situation, the private forests which was/is established by planting or/and seeding which requires special effort. Private forest owner has full authority and the right to dispose over such forest. In this case, owner has the right to transfer his/her forests to third parties in any legal way. In the second situation, the private forests of which grown naturally or inherited by are subject to mandatory article 52 of the Forest Code. Article 52 dictates that the private forests cannot be separated as parcels less than 500 hectares and transferred among inheritors. According to data from The General Directorate of Forestry for year 2011, forest lands cover 21,5 million ha, or 27,2 percent of the national territory, and private forests cover only 9.915,92 ha, or only about 0,5 percent of all forestlands. Only one private forest[20]--which is Geleriç Private Forest located in Samsun province, and covers 1.066 ha--among 314 other private forests can be separated as parcels larger than 500 hectares and transferred among inheritors in Turkey.

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[20]http://web.ogm.gov.tr/birimler/merkez/kadastro/Dokumanlar/KD3/%c3%b6zelormanlarlistesi.xls, Access to website: 25.05.2012

As a result, in Turkish Law, private forest ownership in terms of TCC and The Bundle of Rights Theory cannot be used fully, and therefore, a private forest owner acquires a limited right to use, right to benefit, and right to dispose power over his/her private forest.

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НЕКОТОРЫЕ АСПЕКТЫ ИЗ ПРАКТИКИ АРЕНДЫ ЛЕСОВ В КИШИНЕВСКОМ ГОСУДАРСТВЕННОМ ЛЕСНОМ ПРЕДПРИЯТИИ РЕСПУБЛИКИ МОЛДОВЫ

ДИОНИСИЙ БОАГИЕ[21]

Резюме

In order to manage relations in the field of conservation and development of forests, hunting wild animals, promotion of sustainable management of forests and wildlife, the Republic of Moldova Government Decision 187 of 20 February 2008 approved the Regulations on rent forest resources for game management and / or recreational purposes (rest). At present, the State Agency for Forestry "Moldsilva" is under the jurisdiction of 349,200 hectares of forest, of which 13,510.42 hectares were leased, including 9,628.25 hectares of hunting and recreational purposes 3883.0 hectares, which is about 4% of the total.

1. Особености аренды лесов в Кишиневском Государственном лесохозяйственном предприятие Республики Молдова

Согласно статье 26 пункт (1) Лесного кодекса Республики Молдова "земли лесного фонда могут быть предоставлены в пользование юридическим и / или физическим лицам в целях указанных в настоящем Кодексе на условиях аренды. Таким образом, в целях урегулирования отношений в области сохранения и развития лесов, охоты диких животных, способствованию устойчивому управлению лесами и дикой природы, Постановлением Правительства 187 от 20 февраля 2008 было утверждено Положение об аренде лесного фонда для ведения охотничьего хозяйства и / или в рекреационных целей (отдыха).

В настоящее время, Государственное Агентство лесного хозяйства "Молдсилва" имеет в ведение 349 200 га леса, из которых 13510,42 га переданы в аренду, в том числе 9628,25 га для охоты и в рекреационных целей 3883,0 га, что составляет около 4% от общего числа. Ежегодные доходы от аренды леса составляют около 20 млн. лей (1,25 млн. евро) в общей сложности, в том числе за аренду для ведения охотничьего хозяйства - около 3 миллионов лей, а для отдыха - около 17 млн. лей.

В свою очередь Кишиневский Государственное лесохозяйственное предприятие из 16644,64 га, которыми управляет, 2664,65 га переданы в аренду, что составляет 15% от общего числа, в том числе 1497,60 –для охоты и в рекреационных целях - 1167,05. Кроме того, леса переданные в аренду в Кишиневском ГЛП составляют 20% всех арендованных лесов Агентства Молдсилва, в том числе 16% от охоты и 30% от рекреационных целей.

На уровне Лесничеств, ситуация выглядит следующим образом:

- Анений Ной - 303,0 га, в том числе 299,5 га в охотничьих целях и 3,5 га в рекреационных целях (4 арендатора, в том числе 3 - рекреационная деятельность);

- Криулень - 208,53 га, в том числе 98,8 га в охотничьих целей и 109,73 га в рекреационных целях (24 арендаторов, в том числе 21 -рекреационной деятельности);

-Дурлешть - 483,19 га, в том числе 73,1 га в охотничьих целей и 410,09 га в рекреационных целях (136 арендаторов, в том числе 134 - рекреационная

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деятельность);
- Гидигич - 1129,51 га, в том числе 886,0 га в охотничьих целей и 243,51 га в рекреационных целях (39 арендаторов, в том числе 32 - рекреационная деятельность);
- Вадул луй Водэ - 540,42 га, в том числе 140,20 га в охотничьих целей и 400,22 га в рекреационных целях (99 арендаторов, в том числе 96 - рекреационная деятельность).

Участки леса, наиболее пользующим спросом являются те, которые расположены вблизи Кишинева - столицы Республики Молдова, вокруг прибрежных сел а также реки Днестр или расположенные вдоль дорог национального значения. Таким образом, участок леса Дурлешть расположенный недалеко от города Кишинева сдан в аренду на 90%. В таком же положение находится и другие лесные угодия вблизи Кишинева, в том числе участок леса «Чокана», «Фазана», «Трушень» и другие.

Как правило, участки леса вблизи Кишинева и населенных пунктах переданы в аренду для организации отдыха, а в наиболее удаленных от городских и сельских районах для охотничьих целей.

Доходы от аренды леса для охотничьего хозяйства составляет около 540 000 лей (34000 евро) и примерно 4,9 млн. лей (310 000 евро) для досуга. В общей сложности около 5400000 лей (344 000 евро) с общим бюджетом около 14 млн. лей, что составляет около 38%.

За период применения в практики Положения об аренде лесного фонда для ведения охотничьего хозяйства и / или рекреационных целей (отдыха) следует отметить, что этот вид деятельность представляет особый интерес со стороны частного сектора и граждан, а также является одним из существенным источником дохода для управления лесным фондом, сохранения лесов и устойчивое развитие существующих лесов, расширение лесных угодий путем облесения новых участков непригодных для сельскохозяйственного использования, а также обеспечение экологического баланса в этом регионе. Из опыта накопленного в течение этого периода (около 4 года), было констатировано существенных недостатков нормативно-правового характера в урегулирования правовых отношений регламентирующие порядок и условия аренды лесного фонда.

2. Недостатки и положительные аспекты аренды лесов

Исходя из изложенного отметим следующие недостатки:

- Отсутствие научной базы в отношении норм, критерии для выделения угодий (распределение) и процедур по смягчению рекреационного прессинга;
- Отсутствие прозрачности и широких консультаций с участия общественности в принятии решений;
- Сдача в аренду лесных угодий без Плана мероприятий по землепользования на период аренды, с указанием основных направлений деятельности и планируемый объем инвестиций, в том числе указания и расположение предлагаемых зданий и объектов инфраструктуры (сети путей и дорог, малые архитектурные формы, строительство, гидротехническое строительство, реконструкция лесов и эколого-лесохозяйственных мер и т.д.), смету расходов и необходимые разъяснения.
- Отсутствует Положение по управлению лесами в период аренды;
-Допуск капитального строительства с нанесением экологического ущерба лесам и национального пейзажа;
- Отсутствие критерий зонального распределения рекреационных лесов в соответствии с потребностями городского населения;
- Отсутствие общего плана развития в области лесного туризма в соответствии с рекреационного потенциала лесной растительности;

- Отсутствие национального опыта в области аренды леса в соответствии с их классификацией по функциональным категориям;

- Отсутствие аргументированной методики расчета арендных платежей;

- Отсутствие технических регламентов на строительных легко сносимых сооружений;

- Отсутствие исследований о влиянии увеличения интенсивности рекреационной деятельности на окружающей лесной среды;

- Отсутствие четких механизмов координации действия для рекреационной деятельности с центральными органами в области экологии, отдыха, туризма, строительства, здравоохранения и местными органми публичной власти;

- Отсутствие знаний и подготовки кадров в лесном хозяйстве для применения в практики аренды лесных угодий;

- Слабое сотрудничество между представителями Агенства Молдсилва и предприятия лесного хозяйства при заключения договора аренды;

- Отсутствие полной информации у предприятий лесного хозяйства о лицах заключенные договора;

- Ограничение доступа, в том числе персонала лесного хозяйства к участкам, путем установки арендаторам заборов и персонала охраны.

В то же время, можно отметить и следующие положительные аспекты аренды лесов:

- Благоустройство земель, ранее непокрытые лесом, в том числе непродуктивных земель, используемых в качестве незаконных свалок;

- Создание контролируемых рекреационных зон с определенными условиями комфорта и сокращения неконтролируемой рекреационной деятельности;

- Создание искусственно-декоративного пейзажа на краю леса, установив площадки для отдыха для взрослых (теннисный корт, волейбольное площадка, бассейн, и т.д.), игровые площадки для детей и звериные зоны (загон для животных и птиц);

- Накопление дополнительных доходов и использования их для сохранения биоразнообразия лесов, лесной охраны и защиты лесов а также расширения площадей покрытые лесом.

Выводы и Предложения

- Право передачи в аренду лесных угодий закрепить за предприятиями лесного хозяйства а право контроля за соблюдением законности и нормативных правил в этой области сотрудникам Агентству Молдсилва;

- Передача в аренду лесных угодий должно иметь в основу сохранение биологического и экологического потенциала лесов и местной фауне, а планируемая деятельности не должно отрицательно повлиять на сохранение биологического разнообразия лесов и будет способствовать интенсификации природоохранных функций леса;

- Аренда земель лесного фонда будет осуществляться только после предоставления арендатором Проекта плана развития который должен включать в себя следующие компоненты:

а) генеральный план с указанием места строительства сооружений и инфраструктуры и необходимые пояснительные обяснения;

б) план отвода участка с указанием позиционирования сектора и древесной растительности по категориям и состояние каждого дерева и кустарника, а также другой растительности;

в) состояние участка и природно-климатические условия;

г) размещения объекта;

д) особенность пейзажа;

е) проектное предложение;

и)особенность зоны и степень возможности осуществления Рекреационных мер на данном участке;

к) меры направленные на создание архитектурной инфраструктуры (сеть тропинок и дорог, малых архитектурных форм, строительство обектов, гидротехническое строительство, и т.д.);

л) смета расходов.

- Обеспечение прозрачности в управлении лесами данные в аренду путем информирования общественности о достигнутых результатах с размещения необходимой информации на веб-странице Агентства Молдсилва и в прессу;

- Разработка, утверждения и внедрение в практике Положения по управлению лесами данные в аренду;

- Организация тренингов и обучение сотрудников лесного хозяйства для обеспечении исполнения положения, законов и нормативных актов касающихся аренды лесных угодий;

- Демаркация лесов и лесных угодий данных в аренду в натуре и в материалах лесоустройства;

- Периодический контроль (каждые 5 лет) за состояние природного комплекса представленный в аренду, в том числе разработка мер по смягчению негативных последствий;

- Создание и ведение базы данных арендованных лесных угодий

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ЛЕСНОЕ ЗАКОНОДАТЕЛЬСТВО РЕСПУБЛИКИ МОЛДОВА

Федор Ботнарь[22], Думитру Галупа[23]

Резюме: The article presents the legal and regulatory framework documents of forest legislation of the Republic of Moldova and are the main shortcomings and areas for further improvement.

Ключевые слова: forest resources, forest code, category of protection, forest fund, environment, forest belts, sustainable management, use of forests

1. Введение. Республика Молдова - принадлежит к группе стран, расположенных в бассейне Чёрного моря. Общая площадь Республики Молдова составляет 33843,4 км2 \ 0.3 процента всей территории Европы. Рельеф республики представляет собой холмистую равнину, имеющую наклон с северо-запада на юго-восток со средней высотой над уровнем моря 147 м. Отличительная особенность нашей страны - высокая освоенность территории около 80%. Пахотные земли занимают 75% от всей площади страны , 7% занимают строения, дороги и др.

Земли занятые лесной растительностью, включая леса занимают 12.6%. В целом непродуктивные земли для использования в сельском хозяйстве-25%. Самая большая проблема для Республики Молдова, аграрной страны, это эрозия почв. Эродированные земли занимают площадь около 900 тыс. га или 33.9% от общей площади пахотных земель. Каждый год эта площадь увеличивается на 1000га. Овраги занимают около 8 тыс.га. Оползни около 85 тыс.га. За последние 30 лет средний бонитет снизился на 5 пунктов, от 70 до 65 баллов. Ежегодные потери составляют примерно 26 млн. т. плодородной почвы или около 600тыс. т гумуса. Ежегодный ущерб причиненный экономики от деградации почв составляет 1.5 млрд. дол. США.

2.Лесные ресурсы.

В Республике Молдова сохранились 11,4% лесов, что по сравнению с другими европейскими странами очень низкий показатель. Большинство лесопокрытых площадей(87,2%) находится в ведении государства, остальные в ведении местных публичных органов управления (12,2%) и только 0,6% – в частной собственности.

Таблица 1. Структура национального лесного фонда по данным Земельного кадастра на 01.01.2010.

Пор.№	Категории фондодержателей	Общая площадь/ тыс. га/%	Лесопокрытая площадь/ тыс. га/%
	Лесной фонд собственность государства	362,0/ 86,4	326,4/ 87,2
	Лесной фонд собственность местных публичных органов управления	54,5/ 13,0	45,7/12,2
	Лесной фонд частная собственность	2,6/ 0,6	2,4/ 0,6
ИТОГО:		419,1/100	374,5/100

Лесные ресурсы характеризуются разбросанностью и неравномерным распределением по территории страны, что отрицательно сказыватся на выполнении ими экологических, защитных и производственных функций.

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Леса находящиеся в ведении местных органов публичного управления (54,5 тыс. га или 13% от всего национального лесного фонда) включены в категорию поле- и почвозащитных лесов, а также защиты против климатических и промышленных вредных факторов.

Общая площадь коммунальных и частных лесов характеризуются следующим:

- малые по площади урочища и разбросанные по территории примарии;
- в большинстве случаев эти насаждения имеют главной породой белую акацию;
- лесной режим соблюдается частично;
- только 15% от общей площади лесов имеются лесоустроительные проекты;
- меры ухода в данных насаждениях проводятя с большими опазданиями;
- подвержены пастьбой и самовольными рубками.

Лесная растительность вне земель лесного фонда включает:

- защитные лесные плосы расположенные на сельскохозяйственных землях и зонах защиты рек и водных бассейнах;
- защитные лесные полосы и насаждения деревьев и кустарников расположенные вдоль дорог;
- древесные и кустарниковые группы за пределы границ городов и сел.

Республика Молдова имеет 49,1 тыс. га площадей занятых лесной растительностью (таблица 2), из которых 29,8 тыс.га защитных лесных полос(сельхозземель, дорог, рек и водных бассейнах, и др..) и 19,2 тыс. га – другие типы лесной растительности.

Состав лесов Молдовы:

- лиственные породы (97,8 %), включая, дубовые – 39,6%, ясеневые – 4,6%, грабовые – 2,6%, акациевые – 36,1%, тополевые – 1,6%;
- хвойные попроды 2,2% .

Дубовые леса это самые ценные насаждения. Из их общей площади – около 27% имеют семенное присхождение, а 73% порослевое. Это обьясняет продуктивность дубовых насаждений, 43% высокой продуктивности, а 57% низкой подуктивности.

Общий обьем древесной массы лесов Молдовы составляет около 46 млн. куб.м, на 1га лесопокрытой приходится в среднем 124 куб.м. Средний прирост лесов составляет 3,3куб.м/год/га, а общий средний прирост составляет 1236 куб.м/год. Средний класс бонитета составляет 2,3. Возрастная структура у всех пород неравномерная, с преобладанием молодых насаждений.

Леса Республики Молдова включены в 1 функциональную группу-леса выполняющие исключительно охрану окружающей среды. Согласно действующего лесного кодекса имеются 5 функциональных подгрупп защитности.

Агентство по лесному хозяйству «Молдсилва» является центральным органом управления в области лесного хозяйства, находится в подчинении Правительства Республики Молдова и имеет следующую структуру:

- Предприятия по лесному хозяйству – 16;
- Лесо-охотничьи предприятия – 4;
- Государственные природные заповедники – 4;
- Институт лесных исследований и лесоустройства.

В рамках Агентства «Молдсилва» работают 81 лесничество, 1063 лесных участка со средней площадью 315,5 га. В период 1996-2005 гг. Средняя площадь лесных участков варьировала от 284,9 га в 1997, до 356,8 ha в 2005.

В лесном хозяйстве работали: 21 главных лесничих, 23 инженера защиты лесов, 25 инженеров по лесопользованию, 22 инженеров по лесовозобновлению, 81 лесничий, 76 помощников лесничих, 192 мастеров, 1064 лесников, 12 охотоведов и профессиональных охотников, 21 инженер таксатор и техник таксатор, 5 инженеров по

лесопатологии, 20 начальников и мастеров питомника, 40 экономистов и экономистов по реализации, 209 бухгалтеров, 5 главных инженеров по вопросам производства, 58 инженеров по переработке древесины и мастеров в цехах по переработке древесины, 25 инженеров по охране труда и технике безопасности, 20 научных сотрудников, 12 специалистов подсобного хозяйства.

Основными проблемами лесного сектора в Республике Молдова являются: Снижение биологического разнообразия лесных экосистем и видов в биоценозе; Низкий уровень облесения территории страны, недостаточный для поддержания постоянного экологического равновесия; Ухудшение жизнеспособного состояния и здоровья лесов; Распространение вторичных и инвазивных видов; Высокий уровень дисперсии лесных урочищ, расположенных неравномерно, практически отсутствуют лесные коридоры, необходимые для соединений массивов, которые имеют чрезвычайную важность, как для жизнеспособности лесного фонда как такового, так и для охраны биоразнообразия, почв, вод и т.д.; Порослевое происхождение из поросли 2-4 генерации 60% всех лесов (у дуба скального данный процент составляет около 90%), имея более пониженную устойчивость к неблагоприятным биотическим и абиотическим факторам; Около 40% насаждений не соответствуют условиям местопризрастания; Недостаточное освоение потенциала лесорастительных условий, который имеет как результат относительно пониженную продуктивность лесов; Недостаток лет с достаточным плодоношением для естественного возобновления дубовых насаждений; Наличие, в рамках охраняемых территорий, деградированных, поврежденных насаждений, насаждений из интродуцированных видов с агрессивным поведением по отношению к местным видам и т.д.; Недостаточное техническое обеспечение, неудовлетворительное финансирование, отсутствие законодательных и экономических рамок, которые бы позволили бы накапливать альтернативные финансовые средства и средства для содержания объектов, включенных в фонд природных охраняемых территорий; Неконтролируемый и неуправляемый отдых и рекреация, широкий доступ населения в леса.

3. Лесное законодательство

Лесное законодательство имеет своей целью регламентирование устойчивого управления и пользования обеспечивая воспроизводство, охрану, защиту лесов, поддержание, сохранение и улучшение лесного биологического разнообразия, обеспечивая лесными ресурсами настоящие и будущие нужды общества на основе их многофункциональности. Лесные отношения регламентируются Конституцией, Лесным кодексом и другими законодательными и нормативными актами: Лесной Кодекс, № 887-XIII от 21.06.96, Monitorul Oficial № 4-5/36 от 16.01.1997. Земельный Кодекс, № 828 от 25.12.91, Monitorul Parlamentului Republicii Moldova 1993, № 3 Ст.58, 59, 60. Закон о природных ресурсах, № 1102-XIII от 06.02.97, Monitorul Oficial № 40/337 от 19.06.1997. Закон об охране окружающей среды, № 515-XII от 16.06.93, Monitorul Oficial № 10/283 от 30.10.1993. Закон о фонде природных территорий, охраняемых государством, № 1538-XIII от 25.02.98, Monitorul Oficial № 66-68/442 от 16.07.1998. Закон о водоохранных зонах и полосах рек и водоемов, № 440-XIII от 27.04.95, Monitorul Oficial № 43/482 от 03.08.1995. Закон об улучшении земель посредством облесения, № 1041-XIV от 15.06.2000, Monitorul Oficial № 141-143 от 09.11.2000. Постановление Парламента № 350-XV от 12.07.2001 об утверждении стратегии долговременного развития лесного сектора, Monitorul Oficial № 133-135 от 08.11.2001. Постановление Парламента об утверждении Национальной стратегии и плана действий в области сохранения биоразнообразия, №112-XV от 27.04.2001, Monitorul Oficial № 90-91/700 от 02.08.2001. Закон № 94-XVI от 05.04.2007 об экологической сети.

приоритет охраны лесов, как важнейшего компонента окружающей среды и средства производства в лесном хозяйстве перед использованием лесов в качестве недвижимого имущества, согласно которому владение, пользование и распоряжение лесами осуществляется собственниками лесных участков свободно, если это не наносит ущерб окружающей среде и не ущемляет права иных лиц; приоритет охраны жизни и здоровья человека, согласно которому при осуществлении деятельности по использованию, охране и воспроизводству лесов должны быть приняты такие решения и осуществлены такие виды деятельности, которые позволили бы обеспечить сохранение жизни человека или предотвратить негативное (вредное) воздействие на здоровье человека, даже если это потребует больших затрат; участие граждан и общественных организаций (объединений) в решении вопросов, касающихся охраны и воспроизводства лесов, доступа к лесным ресурсам в пределах их компетенции и в порядке, определяемым национальным законодательством; приоритет сохранения особо ценных лесов и лесов, расположенных на особо охраняемых природных территориях; свободное пребывание граждан в лесах; платность пользования лесными ресурсами; дифференцированный подход к установлению правового режима участков лесов, в соответствии с которым при определении их правового режима должны учитываться природные, социальные, экономические и другие факторы. предусматривают компетенции центральных и местных органов власти, содержат приоритетные направления развития и другие аспекты касающихся деятельности в области управления лесов;

Статья 6 – виды собственности на земли лесного фонда: используемые в общественных интересах леса в Республике Молдова являются объектом исключительно публичной собственности; в соответствии с законодательством, леса могут быть предоставлены для ведения лесного хозяйства или пользования; частная собственность на леса допускается в случаях посадки их в установленном законодательством порядке на землях, являющихся частной собственностью.

Статья 9 – компетенция органов местного публичного управления.

Статья 12 предусматривает компетенцию главного органа управления лесным хозяйством.

Статья 22 предусматривает компетенцию центрального органа государства по управлению природными ресурсами и охране окружающей среды в области государственного контроля.

Статьи 27-28 предусматривают прекращение права ведения и владения землями лесного фонда, включая нерациональное использование земель лесного фонда, что обусловило снижение защитных функций, ухудшение состояния и качества лесов; неудовлетворительное осуществление охраны лесов и их восстановления; не отвечающей предъявляемым требованиям организации лесных пользований.

Статьи 29 – 31 устанавливает права и обязанности лиц, ведущих лесное хозяйство и лесопользователей: обеспечение восстановление, охрану, защиту, улучшение санитарного состояния лесов, уход за ними, сохранение и улучшение лесного биоразнообразия, повышение продуктивности лесов и плодородия лесных почв, организацию лесных пользований, учет лесов, выполнять другие обязанности по ведению лесного хозяйства, рациональное использование лесных продуктов.

Статья 32 о пребывании граждан в лесах: при условии соблюдения положений Лесного кодекса граждане имеют свободный доступ на территорию лесного фонда. При этом они пользуются лесами в рекреационных целях, а также для сбора дикорастущих плодов и ягод, орехов, грибов и других продуктов леса бесплатно, за исключением случаев, когда пользование осуществляется в улучшенных или искусственно созданных

угодьях либо в специально оборудованных местах. Пребывание граждан, сбор продукции побочного пользования в лесах могут быть ограничены или запрещены в интересах пожарной безопасности и в иных целях государственными органами лесного хозяйства по решению органов местного публичного управления, а в лесах заповедников и других особо охраняемых лесах - в связи с установлением в них специального режима.

Статья 52 определяет, что лесоразведение на деградированных землях, не входящих в лесной фонд, обязательно и производится их владельцами по специальным программам и проектам, согласованными с государственными органами лесного хозяйства, государственными органами охраны окружающей среды и утвержденным органами местного публичного управления.

Статья 64 определяет задачи лесной службы, права и ответственность работников лесной службы.

Главы XIV-XVI направлены на обеспечении целостности и развитие лесного фонда.

Статья 77 устанавливает, что в контексте обеспечения целостности и развития лесного фонда, включение лесов и других земель лесного фонда, находящегося в публичной собственности, их количественной и оценочной стоимости в уставный фонд хозяйствующего субъекта, а также использование таковых в качестве залога для получения кредитов и/или займов запрещается;

Статьи 78 - 80 – сокращение и раздробление площадей лесного фонда, а также лесной растительности, вне лесного фонда, запрещается. Допускается в исключительных случаях для предотвращения или ликвидации последствий стихийных бедствий, катастроф и техногенных аварий, а также для решения проблем, связанных с безопасностью государства, строительством объектов специального назначения: национальных автомобильных дорог, линий электропередачи высокого напряжения, газопроводов и нефтепроводов;

Статья 84 устанавливает виды нарушений лесного законодательства: незаконная рубка и повреждение деревьев и кустарников, уничтожение и повреждение леса в результате поджога или небрежного обращения с огнем, уничтожение и повреждение лесных культур, молодняка естественного происхождения, самосева и подроста на площадях, предназначенных для лесовосстановления; нарушение порядка и сроков облесения вырубок и других необлесенных площадей лесного фонда; самовольное сенокошение и незаконная пастьба скота на землях лесного фонда.

2. Закон об охране окружающей среды, № 515-XII от 16.06.93, Monitorul Oficial № 10/283 от 30.10.1993.

Глава II, компетенции в области охраны среды, предусматривает:

- **Парламент** – утверждает общие политические принципы в области охраны среды и использования природных ресурсов; принимает законодательные акты об охране среды и использовании природных ресурсов; утверждает по предложению Правительства пределы использования природных ресурсов общенационального значения, пошлины за использование природных ресурсов;
- **Правительство** – обеспечивает рациональное использование природных ресурсов, составляет кадастр природных ресурсов, обеспечивает меры по сохранению биологического разнообразия, осуществляет государственное финансирование государственного заказа на проведение научных исследований по проблемам охраны среды и рационального использования природных ресурсов;
- **Органы публичного самоуправления** – обеспечивают соблюдение законодательства об охране среды, утверждают по согласованию с центральным органом по природным ресурсам и охране среды пределы использования природных

ресурсов местного значения, осуществляют надзор и координацию деятельности примэрий и претур в области рационального использования пастбищ, выделения земель для обеспечения необходимого уровня облесения, создания защитных лесополос и зеленых зон и т.д.);

Статья 41 запрещает сокращение площадей земель лесного фонда. В исключительных случаях для целей строительства объектов специального назначения, дорог республиканского значения, прокладки линий электропередачи высокого напряжения, газо- и нефтепроводов сокращение площадей земель лесного фонда разрешается по решению Правительства только при наличии положительного заключения Государственной экологической экспертизы. Окончательное изъятие площадей из земель лесного фонда осуществляется путем включения в них участков, пригодных для облесения и равных по площади и бонитету.

3. Закон о фонде природных территорий, охраняемых государством, № 1538-XIII от 25.02.98, Monitorul Oficial № 66-68/442 от 16.07.1998.

Земли объектов и комплексов фонда охраняемых территорий предназначены для охраны природы, являются частью публичной собственности, не могут быть приватизированы, сданы в аренду и имеют режим охраны и хозяйствования, установленный действующим законодательством;

Изъятие земель из фонда охраняемых территорий строго запрещается, за исключением случаев, когда они утратили ценность в результате стихийных бедствий или катастроф и не могут быть восстановлены. Во всех случаях изъятие земель из фонда охраняемых территорий производится по предложению центрального органа охраны окружающей среды и Академии наук Молдовы на основании решения Парламента.

4. Закон о водоохранных зонах и полосах рек и водоемов, № 440-XIII от 27.04.95, Monitorul Oficial № 43/482 от 03.08.1995.

Глава II «Установление размеров водо-охранных зон и полос рек и водоемов» описывает размеры зон, прибрежных водо-охранных полос, берегозащитных лесных полос, которые зависят от длины/площади рек и водоемов.

Глава III «Соблюдение водоохранного режима рек и водоемов, ответственность за его нарушение» предусматривает запрещение рубки деревьев и кустарников (за исключением рубок ухода и санитарных рубок), пастьба в водо-охранных зонах рек и водоемов разрешается только в удаленной от реки части водо-охранной зоны (ст. 13).

5. **Закон об улучшении земель посредством облесения, № 1041-XIV от 15.06.2000, Monitorul Oficial № 141-143 от 09.11.2000.**

1. Содержит, практически, все детали, связанные с выделением и облесением деградированных земель. Основной его целью является придание импульса процессу по расширению площадей с лесной растительностью, в первую очередь, за счет деградированных сельскохозяйственных земель.

2. Закон определяет: <u>категории деградированных земель:</u> эродированные земли, земли, нарушенные оползнями, солончаки, земли с постоянным избытком влаги, земли с песчаной почвой, подверженные эрозии, земли с примесью гальки, валунов, наносной породы, дождевых намывов и т.д.; <u>процедуру идентификации деградированных земель, подлежащих облесению:</u> создание и состав комиссий по идентификации деградированных земель, подлежащих облесению, инвентаризация таких земель, создание фондов для улучшения деградированных земель, процедура продажу или передачи таких земель в ведение органу управления лесным хозяйством; <u>финансирование работ по облесению деградированных земель:</u> облесение деградированных земель осуществляется их обладателями при помощи специализированных подразделений, финансирование работ будет осуществляться за

сет фондов для улучшения деградированных и загрязненных земель, ассигнований из государственного бюджета, национального экологического фонда и спонсорских поступлений, международных фондов и т.д., центральный орган управления лесным хозяйством определяется в качестве технического координатора проведения лесомелиоративных мероприятий на деградированных землях; ответственность и санкции за нарушение положений настоящего закона: к административной и уголовной ответственности привлекаются за препятствование проведению работ по лесомелиорации деградированных земель, уничтожение лесопосадок, созданных на деградированных землях, пастьбу скота на облесенных деградированных землях, использование не по назначению посадочного материала и т.д.;

6. Постановление Парламента № 350-XV от 12.07.2001 об утверждении стратегии долговременного развития лесного сектора, Monitorul Oficial № 133-135 от 08.11.2001.

Основными задачами стратегии являются: увеличение экологического и биопродуктивного потенциала естественных лесов, которое предполагает предупреждение их дальнейшей деградации, сохранение, восстановление и реконструкция лесных экосистем; сохранение лесного биоразнообразия, посредством применения мер и технологий ухода и ведения лесов, создание экологических коридоров между лесными массивами, снижение антропогенного воздействия на леса; увеличение площадей, покрытых лесной растительностью, которое предполагает увеличение процента лесистости территории посредством посадки лесов на площади не менее 130 тысяч га; повышение эффективности мероприятий по защите и охране лесного фонда, создание плантаций быстрорастущих пород деревьев для удовлетворения нужд населения в топливной древесине; увеличение вклада лесного сектора в решение социально-экономических и экологических проблем посредством глубокой переработке древесной и недревесной лесной продукции.

Были приняты и утверждены ряд постановлений правительства по ведению лесного хозяйства: Постановление Правительства № 595 от 29.10.1996 “О совершенствовании ведения лесного хозяйства и сохранности зеленых насаждений”. Постановление Правительства о государственном учете лесного фонда, № 1007 от 30.10.1997. Постановление Правительства об отнесении лесов к группам и категориям защитности, № 1008 от 30.10.1997. Постановление Правительства о мероприятиях по установлению прибрежных водоохранных зон и полос рек и водоемов, № 32 от 16.01.2001. Постановление Правительства № 636 от 26 мая 2003 “Об утверждении Программы освоения новых земель и повышения плодородия почв”. Постановление Правительства № 737 от 17 июня 2003 “Об утверждении Государственной Программы лесовосстановления и облесения земель на период 2003-2020”. Постановление Правительства № 739 от 17 июня 2003 “О выполнении стратегии долговременного развития национального лесного сектора”. Постановление Правительства № 740 от 17 июня 2003 “Об утверждении нормативных актов в области управления лесных хозяйством”. Постановление Правительства об утверждении Положения о согласованности рубок в лесном хозяйстве и лесной растительности, не входящей в лесной фонд, № 27 от 19.01.2004, Monitorul oficial № 19-21 от 30.01.2004. Постановление об утверждении Положения о порядке предоставления, изменения назначения и обмена земель, nr. 1451 от 24.12.2007. Постановление об утверждении 6 нормативных актов, имеющих непосредственное отношение к национальному лесному сектору. Правила отпуска древесины на корню в лесах; Положение о пожарной безопасности в лесах; Положение о сенокошении и пастьбе скота на землях лесного фонда; Положение о лесных пользованиях в рекреационных и научно-

исследовательских целях; Положение о защите лесов от болезней и вредителей; Положение о порядке определения и возмещения убытков и потерь лесного хозяйства.

Агенством лесного хозяйства утверждены ряд нормативных документов: Техническое руководство по лесовосстановлению и лесоразведению в государственном лесном фонде. Технические нормы по технической приемке и инвентаризации работ по лесовосстановлению, лесоразведению и выращиванию посадочного материала. Техническое руководство по проведению рубок ухода в насаждениях лесного фонда. Технические нормы по экологической реконструкции лесонасаждений. Технические нормы по подбору и применению систем рубок. Технические нормы по поддержанию и сохранению лесного биологического разнообразия в лесах. Технические нормы по лесоустройству. Технические нормы по охотустройству охотничьих угодий лесного фонда. Положение о Государственной лесной службе. Санитарные правила в лесах. Техническое руководство по осуществлению оценки численности охотничьей фауны. Техническое руководство по обеспечению сохранения охотничьего фонда.

Для улучшения лесного законодательства Республики Молдова рекомендуется следующие дополнения/изменения: Усовершенствование требований касающийся комунальных лесов; Установить права и обьязаности собственников леса; Установить требования об ограничения и приостоновления прав лесопользователей; Урегулирование основных требований и действий для сохранения и улучшения биоразнобразия в лесах; Установить сроки аренды леса и лесных земель; Внести требования проведения аукционов или конкурсов для получения прав осуществления лесных пользований, взятия в аренду. Необходимо предоставить компаниям право участия в экономической деятельности лесного сектора. Установить минимальные и максимальные сроки аренды леса и лесных земель. Выполнение Стратегии долговременного развития лесного сектора; Выполнение программы по увеличению лесопокрытых площадей; Разработка и выполнение национальной программы по улучшению состояния деградированных лесов и сохранения лесного разнообразия; Завершение функционального зонирования лесного фонда, с установкой соответствующих режимов хозяйствования; Создание национальной экологической сети; Увеличение вклада лесного сектора в решение национальных экономических и социальных проблем; Содействие в поддержании национальной системы лесного образования, посредством обеспечения учебного процесса помещениями, современным оборудованием, учебниками и дидактическими материалами; Расширение возможностей по активному включению лесного сектора в программы развития туризма и других рекреативных действий; Консолидация институционных способностей лесного сектора, независимо от формы собственности и департаментальной принадлежности; Разработка и внедрение финансово-экономического механизма продвижения лесной политики.

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A FRAMEWORK FOR ECOLOGICAL RISK ASSESSMENT OF MINING ACTIVITY IN WILDLIFE AREAS (WAR METHOD)

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Abstract

The present study describes a method to contribute to the decision-making process by determining the environmental effects of mining activities in wildlife areas. The proposed WAR method comprises a W-phase *(Waste, Destruction, Pollution)*, in which potential impacts are determined*;* A *(Attention)* phase, in which appropriate precautions are determined; and R *(Rehabilitation)* phase. in which remediation activities are completed. Sub-criteria of each phase were determined as: data collection, integration and analysis, and criteria scoring. Administrative decisions regarding mining activities and appropriate precautions to reduce risk should be determined According to the scoring system. The WAR method is expected to enable an eco-systematic approach to the assessment of mining projects in wildlife areas, increasing transparency and thereby facilitating measurable, reasonable, and verifiable assessment.

Introduction

Mining is an important sector of many national economies, and provides raw materials that are vital for many products that contribute to modern life. However, mining activities can damage wildlife areas and pose a threat to the continuity of the ecosystem. It is therefore necessary to achieve an appropriate balance between ecology and economy. In order to enable this balance, the potential environmental risks associated with mining activities should be analyzed. In a complex world, the call for integrated analysis, broadly to be taken as a holistic approach to problem solving, is an understandable objective. This is by no means different in the field of risk assessment. Risk-based decision-making requires that decision-makers and stakeholders are informed of all risks that are potentially significant and relevant to their decision. Different permutations of this view can be observed in various organizations and institutions (Vermeire at al., 2007). Risk is the chance, within a given timeframe, of an adverse event occurring with specific consequences; and risk assessment is a process used to collect, organize, integrate, and analyze information for use in a planning environment, where the outcome is the analysis and prioritization of risks or hazards to a stated objective (Pollino et al., 2012). Accordingly, the true meaning of risk analysis is that it should take full advantage of all available information, especially in relation to issues of uncertainty (Wang D. 2009) such as the expected value of a random variable, the estimated value of its square deviation, the form of its distribution, the relationship between each risk factors, etc. (Wang D. 2010).

For mining activities, a decision-making mechanism should be formed regarding the start and continuance of mining activities, following an ecosystem risk assessment including data collection, combination, and analysis. This study presents a method describing the phases of such a decision-making process. This method, called WAR, is an Ecological Risk Assessment (ERA) approach to the assessment of the risks of mining activities in wildlife areas. Ecological risk assessment has evolved rapidly during the past decade, from a qualitative set of observations to a quantitative science, particularly for aquatic ecosystems

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(Bartell, 1998). It is a process that evaluates the likelihood that adverse ecological effects may occur, or are occurring, as a result of exposure to one or more stressors (US EPA, 1992a). The process is used to systematically evaluate and organize data, information, assumptions, and uncertainties in order to help understand and predict the relationships between stressors and ecological effects in a way that is useful for environmental decision-making (US EPA, 1998). The objective of ecological risk assessment is to provide a quantitative basis for balancing and comparing risks associated with environmental problems and a systematic means of improving the estimation and understanding of those risk. Ecological risk assessments are used by policymakers and regulatory agencies such as the United States Environmental Protection Agency (EPA) (Graham et al., 1991; Chapman et al., 1998). Ecological Risk Assessments are structured to predict the potential effects of stressors (typically, to date, chemical) on valued ecological resources. Although much effort goes into evaluating the toxicity of chemicals released to the environment, relatively little focus has been directed to the exposure component of the risk equation, and even less toward biological or physical conditions. Consequently, ecological risk assessments often overlook major ecological factors that influence the status of valued wildlife species populations (Kapustka, 2003).

In light of the above-mentioned information, ERA is based on comprehensive observation, data collection, and analysis. Such an assessment is not easy to conduct, because mining activities in wildlife areas may create various risks (physical, chemical, etc.) to the ecosystem (Aduvire, 1998). This results in the most significant impacts on the environment because it is responsible for a complete transfiguration of the landscape and temporary elimination of vegetation (Starnes LB and Gasper DC. 1995). Some of these impacts are due to the effect of mining transportation activities on biodiversity (Diamond and Serveiss, 2001; Moraesa et al., 2003; Victorin et al., 1998; Casteel et al., 2001), the severe impacts of heavy metal pollution and hazardous wastes on wildlife areas, fauna and flora (Liua, et al., 2003), the risks associated with mine pits and lakes filled with highly acidic waste waters, and the production of solid, liquid, and gaseous waste materials (UN/DTCD–UN and DSE, 1992). Impacts quite often persist after the closure of a mining facility because adequate reclamation measures were not considered (R. Pereira, R. Ribeiro and F. Goncalves, 2004).

Pre-evaluation of mining activities that have potential to cause severe ecosystem damage, and the prevention of potential negative impacts, reflects the “precautionary principle”, one of the fundamental principles of environmental law. The WAR analysis will assist decision makers in assessing proposed mining projects within a precautionary framework. As a result of the risk analysis, the following decision categories may be decided: “not permitted”, “limited permission”, or “permitted”. Such a method will enable a systematic approach, increasing the transparency of the decision-making process, and provide a measurable, reasonable, and verifiable report.

Aim, Problem and Scope of the WAR Method

The WAR method facilitates ecological risk assessment of mining activities in areas that are important for biodiversity. The assessment determines the possible damages of mining activities to these areas, and stops, restricts or decides regarding the continuity of the activities. The main purpose of the method is to determine the effect of mining activities on the wildlife and to decide whether or not giving permission for the activities.

The report prepared via this method differs from an Environmental Impact Assessment (EIA) Report, and its results shall be binding, as for the EIA process.

The proposed method will be used in wildlife areas where mining activities will be conducted, and in areas where wildlife may be affected. The method is mainly intended for

use in areas of endangered species, in wildlife protection and development areas, and in areas where mining activities affect wildlife.

The proposed WAR method incorporates both fauna and their habitats. The method evaluates the lifecycles and living areas of fauna, and present the limitations and objections to the proposed mining activities.

Phases of the Method

The WAR method comprises three main phases, each including sub-criteria/types. The first phase, W Analysis, includes potential negative impacts, termed Waste, Destruction and Pollution, which may occur as a result of mining activities. W Analysis is the main phase of the WAR method, the results of which then form the basis of the method.

The second phase is the Attention (A) phase, which includes the start of the activity permitted as a result of the W analysis. This phase assesses four criteria: fire, construction, warning, and education. This phase focuses on the precautions to be taken, security, warnings, and the education of workers; and aims to preserve the standards of wild life in wildlife areas and not result in negative consequences.

The final phase is the Rehabilitation (R) phase, which includes the completion of project, and restoration of the site. This aims to enable the suitability of of the materials used in the closure of the site to nature and the restoration of the area to natural habitat. This phase is evaluated according to two criteria: conformity to nature and the arrangement of the habitats. If the plans for these phases are considered to be sufficient, mining activity is supplemented.

The scores in the study are used in the evaluation of the criteria/types, which vary between 0, 1, 2 and 3, from negative to positive.

In each phase, the method is based on evaluation of the reproduction and copulation times, migration routes and the primary food sources of the protected species, especially the species relevant for the report, and of the activities that may endanger these species

Acronyms and Definition

Acronyms used in the method are as follows.

Table 1. Acronyms and Definitions

Acronyms	Definitions
W	Waste, Destruction, Pollution
A	Attention
R	Rehabilitation

Criteria

Criteria determined via the WAR method are as follows.

Table 2. Criteria

WAR	Criteria/Types
W	Waste (Solid Waste, Liquid Waste) Destruction (Habitat Destr., Fauna Destr.) Pollution (Soil Poll., Air and Dust Poll., Noise Poll, Vibration Poll.)
A	Fire Construction Warning Education

R	Conformity to nature Arrangement of habitats

Report Producers and Users, and the Reporting Field

The preparation of a WAR report includes the following factors.

Table 3. Report Preparers, Report Users, Report Field

WAR	Report Preparers [25]	Report Users	Report Field
W	Wildlife Expert (R) Forest Engineer Botanist Ecologist Aquaculture Engineer Environmental Engineer	Public agencies for: Forest, Water, Wildlife, Private property owners Company owners	Wildlife Areas Areas near wildlife areas and areas that may affect wildlife
A	Wildlife Expert (R) Forest Engineer Botanist Ecologist Aquaculture Engineer Construction Engineer Environmental Engineer Mining Engineer	Public agencies for areas: Forest, Water, Wildlife, Private property owners Company owners	Wildlife Areas Areas near wildlife areas and areas that may affect the wildlife
R	Wildlife Expert (R) Forest Engineer Botanist Ecologist Aquaculture Engineer Construction Engineer Environmental Engineer Mining Engineer	Public agencies for areas: Forest, Water, Wildlife, Private property owners Company owners	Wildlife Areas Areas near wildlife areas and areas that may affect the wildlife

Evaluation of the WAR Method

The first phase of the method, W Analysis, is the phase in which mining activities are assessed within the project. This phase forms the basis of the method, the results of which determined whether or not the activities will start. Analysis means the assessment of possible damage that mining activities may cause to wildlife and their environments. The possible damages caused by mining activities to wildlife are assessed under three headings: waste, destruction and pollution. Scores are determined for each criterion/type and descriptions are made for the scores.

W Analysis (W)

The scores and relevant descriptions regarding the first phase W analysis are as follows.

[25] All the experts should have relevant doctoral-level experience, and a group comprising experts from at least three different fields is authorized to prepare a report for each phase. Authorized administrations determine the expert groups. A wildlife expert is the permanent member of each phase and group, and each group should have a forest engineer in forestlands. The costs and expenditures of the report are covered by the mining company applying to undertake the activities.

Table 4. W Analysis (W)

W	Scores
Waste (Liquid, Solid)	0- Causes irreversible damage to the habitat and fauna 1- Causes severe damage to the habitat and fauna 2- Causes reversible damage to the habitat and fauna 3- Causes no damage to the habitat and fauna
Destruction (Fauna, Flora)	0- Causes irreversible extinction 1- Causes severe destruction 2- Causes reversible destruction 3- Causes no extinction or destruction
Pollution (Soil, Air and Dust, Noise Vibration)	0- Causes irreversible damage to the habitat and fauna 1- Causes severe damage to the habitat and fauna 2- Causes reversible damage to the habitat and fauna 3- Causes no damage to the habitat and fauna

Evaluation of W Scores

The effects of proposed activities are scored between 0 and 3. In order to proceed from the W phase to the A (Attention) phase, a score of at least 2 score is needed from one criterion/type, that is: minor revision decision should be made.

Table 5. Evaluation of W Scores

Scores	Definitions
0	Cancel
1	Major Revision
2	Minor Revision
3	Approve Activity

Attention (A)

This phase includes the assessment of the precautions to be taken and the important matters to be considered regarding the start of mining activities and wildlife. Attention analysis includes the criteria/types of fire, construction, warning and education and the precautions and rehabilitations regarding the effects of mining activities on wildlife.

Table 6. (A) Attention

A	Scores
Fire	0-No precaution for the protection of the habitat and fauna 1-Precaution exists only for the protection of the activities 2-Precaution exists for the protection of the habitat, fauna and the activities; however support is needed 3-Sufficient precaution exists for the protection of the habitat, fauna and the activities
Construction	0-Construction material, construction and its scale cause irreversible damage to the habitat and fauna 1- Construction material, construction and its scale cause severe damage to the habitat and fauna 2- Construction material, construction and its scale cause

	reversible damage to the habitat and fauna 3- Construction material, construction and its scale cause no damage to the habitat and fauna
Warning	0-No warning sign in the site regarding the 1- There is only a warning sign present in the site regarding the protection of fauna and their habitats 2-More warning signs are needed in the site regarding the protection of fauna and their habitats 3-Sufficient warning signs exist in the site regarding the protection of fauna and their habitats
Education	0-Workers and managers lack knowledge regarding the wildlife and habitat 1- Some workers and managers have local education and knowledge regarding the wildlife and habitat 2- All workers and managers have local knowledge but no certified training regarding the wildlife and habitat 3- Workers and managers received certified training regarding the wildlife and habitat

Evaluation of A Scores

The activities are scored between 0 and 3, according to their effect, as follows.

Table 7. Evaluation of A Scores

Scores	Definitions
0	Cease activity until appropriate revisions
1	Emergency Action
2	Enhancement
3	Approve Activity

Rehabilitation (R)

This phase includes the closure of the site when mining activities are completed. In this phase, the materials used in the filling of the site and the rehabilitation of the habitat are assessed. The company is liable to economic penalties if the agreed criteria are not met, if contaminated filling materials are used, or if the restoration fails to recreate natural habitats.

Table 8. (R) Rehabilitation

R	Scores
Conformity to nature	0-Filling materials are not permeable, not natural or do not conform to natural environment 1-Filling materials are natural; however there is no reforestation or plantation 2-Filling materials are natural; however reforestation and plantation should be supported. 3- Filling materials are natural and conform to the natural environment, and there is sufficient reforestation and plantation
Arrangement of habitats	0-Construction material, construction and its scale cause irreversible damage to the habitat and fauna 1- Construction material, construction and its scale cause severe damage to the habitat and fauna 2- Construction material, construction and its scale cause reversible

	damage to the habitat and fauna 3- Construction material, construction and its scale cause no damage to the habitat and fauna

Evaluation of R Scores

The effects of the activities are scored between 0 and 3, as follows.

Table 9. Evaluation of R Scores

Scores	Definitions
0	Heavy Fine Renewal
1	Fine Renewal
2	Enhancement
3	Approval

Assessment

The development proposal is assessed by the expert group, according to the framework described above. Assessment of the possible damages that the mining activities may cause to the wildlife is first made via W analysis. The condition of the activities will be determined by scoring the possible damages via W analysis. Each criterion will be scored according to the plans and projects of the company and to the field-studies and evaluations of the report preparers. Each factor is scored according to the co-decision of the expert group, or the average of each of their personal scores for each criterion.

In W analysis, the score 2 is the minimum score that should be taken, in other words, the threshold score. For a project to be realized and assessed via attention analysis, at least of the criterion of the W analysis require a score of 2 (minor revision).

A analysis conditions to stop the activities or comprehensively rectify the deficiencies in times explained Table 10 according to the obtained scores. In case that the deficiencies are not fully rectified, or require additional time to complete, the activities may be completely terminated.

In the R analysis, fines may be imposed on the company, as shown in Table 10, or further activities be prevented, according to their conformity to the criteria.

Scores Decisions and Sanctions

Evaluation of the scores given for the criteria and associated sanctions are determined as follows.

Table 10. Score sanctions

Scores	Decisions
W	
0-Cancel	The activities and the project are cancelled
1-Major Revision	The project is rejected and the application undergoes major revisions according to the report's recommendations.
2-Minor Revision	The changes suggested during the project are made.
3-Activity	The activities start without any requirement for revision.
A	

0-Halted pending appropriate revision	The activities are ceased for 6 months and necessary revisions are made within the given period of time[26]
1-Emergency Action	A 1-month period is given for the necessary improvements and arrangements without halting activities[27]
2-Enhancement	A 3-month period is given for the necessary improvements and arrangements without halting activities.[28]
3-Activity	The activities continue.
R	
0-Heavy Fine Renewal	The mining company is subject to a fine of 20% of its highest annual return[29]. The company is prevented from performing mining activities for 5 years.
1-Fine Renewal	The mining company is subject to a fine of 5% of its highest annual return [30]. The company is prevented from performing mining activities for 2 years.
2-Enhancement	The work is demanded to be reorganized, otherwise the costs and expenditures are collected from the company. The company is barred from mining activities for 1 year
3-Approval	Approval that the work is completed according to the legislation

Conclusion

The proposed method provides a comprehensive assessment of planned mining activities in wildlife areas. Supervision of the whole process, from the project phase to site remediation, is reported by expert academics, and enables scientific contribution to administrative agencies. Generally, supervision is conducted by the authorized administration, and the academic background of such personnel is often insufficient for them to thoroughly examine the events. The proposed method is thought to contribute to the continuity and protection of wildlife, as informed by opinions and suggestions of expert academics. In particular, the reports of the

[26] In case the necessary arrangements are not made within 6 months, the project is halted for another 1 year for the necessary arrangements. If the arrangements are not made at the end of this period , the project is cancelled. Any environmental damage to the site is compensated.

[27] In case the necessary arrangements are not made within 1 month, all activities are halted for 3 months. If the necessary arrangements are not made within 3 months, the activities are ceased for another 6 months. If the arrangements are not made at the end of this period , the project is cancelled. Any environmental damage to the site is compensated.

[28] In case the improvements are not made within 3 months, the project is halted for another 3 months. If the improvements are not made within this period , they will be made by the administration using the fines.

[29] In case economic return is low or the company is making a loss, a commission formed by the administration will determine the appropriate level of any fines according to assessment of similar companies.

[30] In case that economic returns are low or the company is making a loss, a commission formed by the administration will determine the appropriate level of any fines according to assessment of similar companies.

wildlife expert regarding each phase will provide accurate assessments of the habitats of the species.

The WAR method aims to preserve the continuity and ensure protection of wildlife. Moreover, the mining sector will contribute to the national economy through the precautions and measures recommended via this method. On the other hand, the obligations and sanctions required by the WAR method will enable more disciplined wildlife studies of the mining sector and contribute to raising awareness of the protection of the natural environment. Therefore, the entire timescale of the project includes a focus on wildlife protection. Another important matter is that not only the company owner and the authorized administration but also the academics actively participate in the process. This will lighten the workload, facilitate the decision-making process, and lessen the difficulties encountered.

The WAR method contributes to the Environmental Impact Assessment (EIA) process with regards to wildlife. This method can be prepared along with the EIA in wildlife areas. However, the method should definitely be used where a proposed development is within a wildlife protection area, even if EIA determined it unnecessary.

The method is based on the continuity and protection of the wildlife, and is binding. The results obtained via this method should not be in the form of suggestions and opinions; they should be binding for natural and legal persons.

The results and decisions that can be obtained via the WAR method can be examined under three headings, as follows.

Decisions Regarding Technical Constraints

- Constraints resulting from the reproduction, copulation, migration, and hibernation periods of the protected species. Detonations spreading dust, or noise and vibration associated with vehicles and site activities should not be conducted during these periods.
- Constraints regarding the installation of energy, water, and telephone lines. Mobile energy and transportation methods should be used in this regard.
- Constraints regarding the opening of new roads. Existing roads should be used.
- Constraints regarding dust and noise. Appropriate measures should be taken to prevent levels of dust and noise that threaten wildlife.
- Constraints regarding operating times, speed, and working type of vehicles and machines. Activities should be performed considering the reproduction and copulation periods of the animals.
- Constraints regarding human-based wastes. Wastes should be removed daily from the site.
- Constraints regarding storage. Storage should not be permitted at the mining site; storage should be located outside the site.

Decisions Regarding Planning

- Water resources should be preserved.
- An substitute area should be provided that recreates the natural habitat, and which at least matches the scale of the area impacted by the mining activity.
- Facility constructions should be limited, and construction should be ungrounded and sympathetic to the natural environment.
- Solid and liquid wastes should be controlled, and vehicles should regularly maintained.
- All precautions should be taken against fire; relevant equipment should be present inside and outside of the site, and in vehicles.

- During the closure of the site, the site should be rehabilitated and restored to its former condition, and it should be handed over rehabilitated consistently with the living conditions of wild life.

Decisions Regarding Education

- Workers should be educated and informed regarding the species and habitats present at the site.
- Information signs should be placed in appropriate places, and workers should complete certified training on biodiversity issues.
- Workers should be given first aid training.

This method aims to control mining activities in wildlife areas and to preserve natural habitat by providing scientific support to relevant administrations in this regard.

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Some Pictures of Mining Site

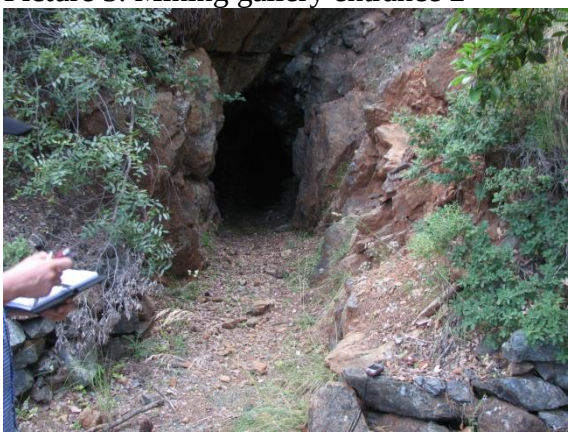
Picture 2. Forest Road to Mine site

Picture 3. Forest Road to Mine site

Picture 4. Mining gallery entrance 1

Picture 5. Mining gallery entrance 2

Picture 6. Wooden loading ramp



Picture 7. Mining gallery entrance 3

Picture 8. Storage areas of Ore (Outside the Wildlife area)

Picture 9. Administration building (Outside the Wildlife area)

ПРАВОВЫЕ ОСНОВЫ ОРГАНИЗАЦИИ ОХРАНЫ ЛЕСОВ ОТ ПОЖАРОВ В РОССИИ

А. М. Ерицов[31]

Abstract

Forests in the Russian Federation occupy 1 183,3 million hectares and cover 69 % of the total territory. Forest fires for last decade caused high ecological, economic and humanitarian damages in Russia and became a major problem in forest management nationwide. Fire management is an important task of the Federal and Regional Governments, especially taking into account the conditions of steadily increasing of average air temperature and the lack of precipitation during long periods. After a catastrophic fire season of 2010 it became obvious that it needs to improve the system of forest fire management in Russia. Government of the Russian Federation accepted some technical solutions and changes of regulations in the field of forest protection. However it is still required further development of existing system of forest fire management.

Keywords: Forest Fires, Forest Code, Responsibilities, Monitoring, Interregional Assistance.

Ежегодно в России возникает около 20 тыс. лесных пожаров, пройденная ими площадь на активно охраняемой территории составляет более 2 млн.га. (Давыденко, 2008). В настоящее время земли лесного фонда разделены на зоны наземного, авиационного и космического мониторинга. Зоны наземного и авиационного мониторинга отнесены к так называемой активно охраняемой территории, где обеспечивается своевременное обнаружение и тушение лесных пожаров, что составляет около 50% от общей площади земель лесного фонда. Площадь пожаров с учетом удаленных территорий, где проводится космический мониторинг пожарной опасности, достигает в отдельные годы до 6 млн.га и более (Ерицов, Ковалев, 2010). В соответствии с Лесным кодексом Российской Федерации от 04.12.2006 г. № 200 ФЗ полномочия в области лесных отношений на землях лесного фонда переданы уполномоченным органам государственной власти субъектов Российской Федерации. На землях Министерства обороны и безопасности Российской Федерации и особо охраняемых природных территориях, охрану лесов от пожаров осуществляют Минобороны России и Министерство природных ресурсов Российской Федерации соответственно. В отношении лесных участков, находящихся в собственности субъектов Российской Федерации, полномочия осуществляют соответствующие органы государственной власти субъектов Российской Федерации.

Финансирование переданных полномочий по землям лесного фонда осуществляется из федерального бюджета. Федеральное агентство лесного хозяйства (Рослесхоз) по специальной методике распределяет субвенции на исполнение переданных полномочий между субъектами Российской Федерации. Рослесхоз осуществляет постоянный контроль за выполнением регионами полномочий в области лесных отношений, целевым расходованием средств, проводит мониторинг пожарной опасности дистанционными методами (Ерицов, Ковалев, 2010), осуществляет сбор и обработку информации о лесопожарной обстановке через федеральную диспетчерскую службу и обеспечивает межрегиональное маневрирование силами и средствами пожаротушения в соответствии с ежегодно утверждаемым планом маневрирования.

Официальная статистика о лесных пожарах формируется на основании данных, представляемых диспетчерскими центрами органов управления лесным хозяйством в субъектах Российской Федерации. Представляемая информация в ряде случаев не соответствует действительности и по отдельным регионам различается в разы в сравнении с данными

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дистанционного мониторинга Рослесхоза. В таких случаях комиссии Федерального агентства лесного хозяйства выезжают в эти субъекты для верификации данных о пройденных огнем площадях. К примеру, по состоянию на 27 июня 2012 года, по официальным данным диспетчерских служб регионов, пройденная пожарами площадь составила около 800 тыс. га. Однако по данным Института космических исследований РАН площадь, пройденная пожарами, составила более 5 млн.га. На основании данных дистанционного мониторинга в мае и июне 2012 года в отдельные дни площадь, пройденная лесными пожарами за сутки, составляла более ста тысяч гектаров. Причиной не соответствия данных о пройденных пожарами площадях в ряде случаев является и то, что в официальную статистику не попадают данные о пожарах в зоне космического мониторинга.

После катастрофического сезона с лесными пожарами в 2010 году Правительство Российской Федерации предприняло ряд мер по совершенствованию охраны лесов от пожаров (Гольдаммер, Ерицов, 2010). В соответствии с Федеральным законом №442-ФЗ от 29 декабря 2010 года были внесены изменения в Лесной кодекс, позволяющие выполнять работы по тушению лесных пожаров специализированными бюджетными и автономными учреждениями без проведения конкурсных процедур, как это происходило до принятия указанных изменений даже при наличии на территории субъектов Российской Федерации государственных учреждений по тушению лесных пожаров. Указанные изменения также требуют от уполномоченных органов субъектов Российской Федерации создания специализированных диспетчерских служб, формирования планов и сводных панов тушения лесных пожаров, согласуемых Рослесхозом и утверждаемых высшим должностным лицом субъекта; усилены требования к мерам по противопожарному обустройству лесов, определены обязанности арендаторов лесных участков. В соответствии с данными изменениями лица, использующие леса проводят противопожарное обустройство арендуемой территории на основании проекта освоения лесов и создают пункты сосредоточения противопожарного инвентаря (ПСПИ). Федеральным законом от 4 мая 2011 г. № 99-ФЗ введено обязательное лицензирование деятельности по тушению лесных пожаров "О лицензировании отдельных видов деятельности". Данный закон был принят с целью подготовки и оснащения организаций, осуществляющих работы по тушению лесных пожаров на соответствующем уровне. Требований к арендаторам на осуществление деятельности по тушению лесных пожаров нет, однако при желании они могут подавать заявки в установленном порядке на получение лицензии и осуществлять такую деятельность. При обнаружении лесного пожара на арендованной территории, арендаторы обязаны сообщить об этом в специализированную диспетчерскую службу и принять меры по нераспространению лесного пожара. Мерами по нераспространению лесного пожара являются уборка заготовленной древесины, горючих материалов, прокладка минерализованных полос и строительство противопожарных барьеров для остановки распространения огня и принятие других необходимых мер.

Введение лицензирования в то же время вызывает вопросы регулирования при привлечении к тушению лесных пожаров организации, основной деятельностью которых не является тушение лесных пожаров.

Федеральным законом от 6 мая 2011 г. № 100-ФЗ "О добровольной пожарной охране" определены условия в сфере обеспечения пожарной безопасности на природных территориях. Законом предусмотрено создание добровольных дружин в форме юридических лиц, что в результате затрудняет развитие добровольческого движения.

Во многих странах в настоящее время в связи с катастрофическими пожарами последних лет пересматриваются системы организации охраны лесов от пожаров, нормативно-правовые основы, вопросы подготовки и привлечения добровольцев и особенности защиты населенных пунктов от природных пожаров (Гольдаммер, Ерицов, 2010). В России также уделяется этим вопросам большое внимание. В соответствии с Указом Президента Российской Федерации от 27 июня 2012 года функции по выработке государственной политики и нормативно-правовому регулированию в области лесных отношений переданы Министерству природных ресурсов и экологии Российской Федерации.

В настоящее время в связи с существенным износом лесопожарной техники Правительством Российской Федерации принято решение о выделении целевого

финансирования по обновлению лесопожарной техники в субъектах Российской Федерации в объеме 15 млрд. рублей на 2011-2013 годы. В 2011 году регионы закупили в соответствии с принятым решением около двух тысяч единиц лесопожарной техники. В 2012 и 2013 годах будет продолжена закупка техники и обновление парка противопожарного оборудования.

В настоящее время проведение межрегионального маневрирования для оказания помощи в тушении лесных пожаров обеспечивается Рослесхозом оперативно в случае чрезвычайной горимости лесов, однако в течение первых трех лет (2007-2009 гг.) после принятия нового лесного законодательства не было выполнено ни одного межрегионального маневрирования. Такие мероприятия стали возможными в рамках предпринимательской и иной приносящей доход деятельности, так как финансирование, выделенное из федерального бюджета на осуществление переданных полномочий субъекту Российской Федерации, предусматривает использование финансовых средств только на территории соответствующего региона. Оперативно заключать контракты по оказанию помощи в тушении лесных пожаров между специализированными учреждениями субъектов Российской Федерации по тушению лесных пожаров возможно в условиях введения режимов чрезвычайных ситуаций (ЧС), т.к. в данном случае допускается заключение контрактов без проведения аукционов в соответствии с федеральным законом 94-ФЗ от 21.07.2005 «о размещении заказов на поставки товаров, выполнение работ, оказание услуг для государственных и муниципальных нужд». Статья 55 указанного закона позволяет заключать государственные контракты без проведения конкурсных процедур при обстоятельствах непреодолимой силы. Таким образом, привлечение дополнительных ресурсов происходит тогда, когда ситуация с лесными пожарами выходит из-под контроля, однако в ряде случаев необходимо перебрасывать ресурсы пожаротушения не только для ликвидации ЧС связанных с лесными пожарами, а также для предупреждения таких ситуаций.

В настоящее время необходимо также совершенствовать правовые основы создания федерального резерва материальных ресурсов, сил и средств тушения лесных пожаров. Федеральный резерв при ФБУ «Авиалесоохрана» в количестве 500 парашютистов и десантников пожарных оказывает субъектам Российской Федерации существенную помощь в ликвидации катастрофических лесных пожаров. Однако этот резерв привлекается к тушению пожаров в регионах также на основании заключаемых контрактов со специализированными учреждениями в субъектах Российской Федерации в рамках предпринимательской деятельности в установленном порядке. Необходимо совершенствовать законодательство для их привлечения не только в условиях ЧС связанных с лесными пожарами и не только в рамках предпринимательской деятельности. Подготовка лесопожарных специалистов наземных подразделений лесной охраны также требует совершенствования. В настоящее время нет единых учебных программ подготовки, требований к специалистам, что допускает подготовку таких специалистов в регионах по разным программам и требованиям.

Таким образом, организация охраны лесов от пожаров в России все еще требует глубокого анализа, совершенствования материально-технического обеспечения и нормативно правовой базы, а также развития в рамках целевой программы.

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FOREST CONCESSION AND RELATED PUBLIC FORESTRY ADMINISTRATION MODELS IN SLOVENIA AND MONTENEGRO

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Abstract

This paper presents and discusses forest concession models of the countries concerned in an internationally comparable way. In terms of concession issues and mechanisms, it concentrates on the following aspects: 1) sustainability and multi-functionality of forest management; 2) use of non-timber forest products, environmental and social services; 3) local community forest use and benefits; 4) length, size and type of concessions; 5) concession fees and revenues from concessions; 6) bidding on concessions and transparency in concession allocation; 7) concession management and performance incentives and 8) inspection, monitoring and audit of forest management. The type of concession used in both countries belongs to a kind of shared forest utilisation - forest management concessions, which are in Slovenia more complex and larger than in Montenegro. They are long-term (20 years in Slovenia, 7 – 30 years in Montenegro) and include the right on forest utilisation and selling of wood assortments, as well as obligations for performing of (all or part of) planned forest operations and/or investments, based on forest management and other plans, marking of trees for felling and strict controlling mechanisms. Attention in the paper is given also to general forest and special forest concession legislation and particularly to forestry organisation models, responsibilities and capacities of state agencies, which are considered as key of success for forest concession planning, monitoring, controlling and supervision.

Key words: forest concessions, forestry organisation models, Slovenia, Montenegro

1. Background

Effective management of public property is becoming one of the central challenges of the global market economy. Management of public forests cannot be exempted from this general challenge. Low prices of wood, high costs of forest utilisation and rising budgetary constraints are forcing countries to manage public forests as effective as possible within the constraints of sustainable forest management.

Gray (2002) defines the forest concession as the contract between forest owner and another party permitting the harvesting (forest utilisation contract) and/or management (forest management contract) of specified resources from a given forest area. United States Forest Service (USFS) similarly defines forest concessions as a system of awarding harvesting rights to individuals, private companies and/or communities who assume the risk and responsibility of forest resources exploitation and/or management [24]. The USFS warns that it must be considered, if concession management is the appropriate approach for certain country and if so, the concessions must be carefully formulated, with specific attention to the details of the realities, in order to be in line with sustainable forest management. Gray (2000) states that

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issues and problems in management and operation of forest concessions stem from the complex nature of the forests and could be environmental, social, institutional and administrative.

By the opinion of the World Bank experts (Christy et al., 2007) exploitation of public forests globally is allowed primarily through concessions and licenses. However, forest concessions could be considered as the dominant means of allocating harvesting rights for tropical forests only and for temperate forests in some developed countries, like Canada and USA, while in Europe, except for Russia and a few other countries, forest concessions are not common (Gray, 2000 and 2002). In management of state forests in Central and Eastern European countries, for which the state forest enterprises are usually responsible, the contractors are mainly used for providing forest operation services (Ferlin, 2004). As per Christy et al., the methods for allocating forest resources might be called concessions, contracts / agreements, sales, licenses and permits. The authors state that the forest concession, unlike the other methods, is a long-term authorization that covers a large area and which usually incorporates also forest management operations (such as reforestation, construction and maintenance of roads and other infrastructure) and planning. The same authors state further that big concessions could be also called sustainable forest licenses, while the smaller ones forest resource licenses, as in Canadian case. Regarding lesser timber harvest contracts they noted that usually the names like licenses and sales are in use.

There are two small European countries, however Slovenia and Montenegro, where state forest operations and enterprises have been privatised and a system of concessions for forest utilisation introduced. For purposes of this paper, forest concessions will be considered as longer-term rights (at least 5 years) for forest utilisation regardless of the concession size, where the right corresponds to the trees marked for felling only and includes selling of the produced wood assortments and obligations for performing (all or part of) other forest operations, without forest management planning and forest service activities, which remain responsibility of the state agencies. An opportunity exists to assess strengths and weaknesses of forest concession approaches in both countries, to learn from their shared experiences and to implement their positive solutions in other similar European countries, interested to consider or introduce that type of mechanisms for sustainable forest use.

2. *Forest concessions' related legislation*

Slovenia, one of the most forest rich EU countries in terms of forest cover, quantity and quality of growing stock, naturalness and biodiversity of forests, which are traditionally under sustainable, multipurpose and close-to-nature management (Golob and Ferlin, 2000, Golob, 2011), principally introduced concessions for the state forest enterprises by transitional Ownership transformation of enterprises' (OTE) law in 1992 [17] and the Agricultural Land and Forest Fund (ALFF) law in 1993 [18]. The OTE law, among others, nationalized the former socially-owned forests as assets of the enterprises and assured the long-term concession (in case of forests) or lease rights (in case of agricultural land) to them, as compensation to their lost assets. The amended ALFF law in 1996 [18] brought further definition of the duration and scope of concessions - in terms of area and operations and financial compensation. The amended law also brought provisions for awarding concessions to other companies on competitive bases. A more detailed regulation of concessions has been prescribed by appurtenant Concession Decree from 1996 [20]. However, as procedural legal base for awarding the concessions, in the context of concessions for utilisation of natural resources, serves the Environment protection law from 1994 [21]. After that the concession system has been developed through amendments to the Concession Decree in 2000 and 2010 [20], based on its implementation experiences, particularly in a more restrictive direction.

Montenegro, another amongst the most forested European countries, with a high biodiversity but relatively low quantity and quality of forest growing stock, as consequence of traditionally non-sustainable use [16], with exception of certain state forest complexes, introduced allocation of state forest utilisation rights, as a kind of concessions, by the 2000 Forest law [13]. General procedures for that were given by the Law on participation of private sector in provision of public services in 2002 [14]. In 2009, general Concession law [15], which served as background for concession awarding procedures, was endorsed. In 2010, specific concession arrangements have been defined by new Forest law [13], in order to achieve better sustainability for both, the state forest and its management institution, and the concessionaires. This, the law specifies possible beneficiaries of concessions (legal entities only), duration and scope of concession (in terms of area and operations), conditions for concessionaires and methodology for calculation and annual adaptation of the concession fees. Appurtenant secondary legislation for that methodology is currently still under development. Responsibilities of the Forest Administration (FA) regarding administration, monitoring and supervision of the concessions are also part of that law.

3. Forestry organisational models and responsibilities

In parallel to introduction of the concession system - as completely new approach in Slovenian forestry - a specific public forestry organisation model was introduced with the 1993 Forest law [19] and the 1993 ALFF law [18]. The model, which is still in use, is based on separation of the forest management and the forest service functions, both for state forests, representing roughly 25%, and private forests, representing 75% of the total forest area. The forest management function for state forests was entrusted to the ALFF, established as concession awarding authority in 1993. Financing of the agency is based on forest concession and agricultural land leasing revenues. For performing the forest service function in all forests, a new state agency - the Slovenia Forest Service (SFS) - was established in 1994, after the separation and transfer of appurtenant forest service employees and assets from former public forestry enterprises (15 of them). The enterprises became then, without forests as assets, subject to privatisation. More detailed information about the organisation model and institutional relations can be found in Ferlin (2002).

The state forest organisation model in Montenegro, established in 2000 and currently still in use is based on the integrated forest management and forest service functions in case of state forests, which represent roughly 67% of the total forest area. Both functions have been entrusted to a newly established Forest Directorate (FD) of Montenegro, as a state agency in 2000, to which the former Public forestry holding “Montenegro forests” was transformed - after separation and later privatisation of its forest management enterprises (14 of them). No legal compensation for the loss of state forest as assets has been provided by law for the successors of the enterprises. Most of the enterprises were in very bad economic condition and bankrupted after that. In 2004 the FD has been transformed into a pure administrational type of agency of the highest Governmental status, i.e. the FA of Montenegro. Such a status the agency had kept until 2011, when it was downgraded to the agency under responsibility of the Ministry of agriculture and rural development (MARD). The agency is the awarding authority for state forest utilisation and concession rights. Financing of it is assured through the state budget, mainly based on the income from forest utilisation and/or concessions fees. Some more information on the situation before 2008 can be found in the National forest and forest land administration policy document (NFLLAP) [16].

4. Material and methods

Forest concession approaches from Slovenia and Montenegro comparably presented in this paper, are based on analyses of the legislation and results of its implementation from

different sources, as well as on own experiences of both authors[34,35] in development, monitoring and evaluation of the concession management in both countries. Presentation and discussion is based on key aspects of concession issues and mechanisms, suggested by Gray (2000), extended and adapted for our purpose in order to enable comparison between the concerned and other countries.

5. *Results on comparison of forest concession issues and mechanisms*

5.1. Sustainability and multi-functionality of forest management

In order to ensure sustainable and multipurpose forest management in Slovenia, forest owners, including the ALFF and its concessionaires, must follow administrative orders, based on forest management plans (FMP) and detailed sylvicultural plans, elaborated by SFS, in consultation with the owners and users. The administrative orders are issued after the trees are marked for felling jointly by the SFS and the owner or user. In addition to that, it is forbidden to cut trees (above 10 cm BHD) which were not previously marked for felling. The FMP are prepared based on evaluation of environmental, social and economic forest functions. All decisions concerning sylvicultural methods and intensity of forest management very much depend on them. This is especially true for biodiversity function because most of the concession forests in Slovenia are part of European Natura 2000 network and thus subject to sound close-to-nature forest management, monitoring and reporting (Golob, 2005, Ferlin et al., 2006). However, if long-term trends in the allowable and the realised cut are considered [22], being actually now higher than before establishment of the Natura 2000 network, it could be stated that this regime obviously has no negative influence on it. Based on the FMP, the ALFF is preparing annual forest utilisation programmes, in consultation with the SFS and concessionaires, as framework for planning and implementation of concession contracts. Concessionaires are additionally obliged through concession contracts to elaborate operational harvesting plans, harmonised with the ALFF guidelines.

In order to ensure protection and sustainable management of forests in Montenegro, concessionaires must follow forest operation plans (FOP), based on FMP, both of them elaborated by the FA. No special permissions for harvesting are issued to concessionaires, as in case of private forest owners. Based on the FOP, the trees are selected and marked for felling by the FA, in state forests practically without participation of the concessionaires. Traditionally, it is forbidden to cut trees (above 10 cm DBH) which are not previously marked for felling. In case of concessions there is also an obligation in the contracts that all marked trees have to be cut, in order to assure corresponding positive influence of harvesting as instrument of forest tending and improvement. Apart from that, all wood assortments have to be measured and stamped (or bar-coded) by the FA's official after felling and before moving

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[34] The first author was, as state secretary and head of the Forestry sector in Slovenia between 1993 and 1997, engaged in creation of forest concession legislation as well as in administration and monitoring of implementation of the concession system. As international expert he was engaged between 2008 and 2012 in creation of new forest law with its concession regulation in Montenegro. He was also involved in economic evaluation of the state forest management with concession, in economic assessments of certain concession contracts, as well as in creation of a new methodology for calculation of concession fees in Montenegro.

[35] The second author was, as senior advisor of the Forestry sector in Slovenia between 1993 and 2000, and 2007 – 2012 engaged in monitoring, evaluation and further development of forest concession legislation in Slovenia. As international expert he was also partly involved in development of new Montenegrin forest law and in review of forestry business processes related to the concessions.

of them from the felling site. Any transport of assortments without that is forbidden, thus creating a significant administrative barrier to forest owner or user. Furthermore, an obligation for additional measuring and stamping of wood assortments by the FA at the road side remained in the forest law. As regards the FMP, they practically consider forest production function only. All operational decisions on forest management depend on FMP. Based on the FMP, the FA is obliged to prepare also annual forest management programmes which are framework for planning and implementation of the concession contracts.

5.2. Use of non-timber forest products, environmental and social services

In Slovenia, the concessionaires are according to the Forest Law, as any other private owner, obliged in line with corresponding regulations to allow hunting, beekeeping and recreational gathering of non-timber forest products (NTFP) without any compensation payment. Licensing or permitting commercial harvesting of NTFP has not been introduced. Further, forests and forest roads, which are declared by forest law as goods in public interests, are all open for normal public use. All forests provide environmental and social services to people without any direct compensation for that. However, all taxpayers contribute through state budget to enhancement of these forest functions. The concessions are not limiting the environmental and social services of forests to people, rather opposite, as concessionaires perform also forest works for enhancement of environmental and social functions and thus positively contribute to the potential of forests for provision of these services. Recognised costs of such works are subject to appropriate reduction of their concession fees.

In Montenegro, the situation regarding hunting and non-commercial use of NTFP is the same as in Slovenia. Forests and forest roads are also open for normal public use, although the roads are generally not considered as infrastructure in public interest, except for the ones which are in local interest. Commercial harvesting of NTFP in state forests is subject to a special licence, issued by the FA to interested NTFP buyers and processors for a defined compensation payment (5% of their market price). Only in case of a biggest forest concession also right for utilisation of NTFP was included, but not implemented from the concessionaire (Terzic, 2012). Concessions, which are mainly related to forest utilisation with appurtenant operations, are principally not limiting to environmental and social forest values, but usually they have negative impact because of unsustainable practices.

5.3. Local community forest use and benefits

In Slovenia, one quarter of the population own forest, so local inhabitants in rural areas usually fulfil their needs for fuelwood and other timber in their own forests. Because of that local people's tenure rights in state forests, except somewhere for pasture, are not an issue. In some areas however, concessionaires sell such timber to local inhabitants on stump, usually connected with salvage wood or small dimension broadleaf timber deriving from thinning. Major benefit for the local communities however is the obligation of the ALFF, introduced in 2010, to pay to municipality budgets on whose territories are state forests, 7 % of the annual value of the wood assortments produced by concessionaires or about 39% of concession revenues [23]. Another benefit for local people is a possibility for employment within the concessionaires' companies, as sub-contractors and/or forest workers, although further employments are now rather limited. In addition, the mountain farmers must now be treated preferentially in the bidding procedure on small concessions, by which state contributes to sustainable development of the mountainous rural areas.

In Montenegro, local people's tenure rights in state forests, except for pasture, are also not an issue. However, local inhabitants have legal right to get timber from state forests, subject to certain criteria, for covering their own needs for gratis (in case of poverty) or for an affordable price. Such a support is already traditional experience. The timber is mainly provided as standing timber, by the FA, in those forests which are not covered by concessions or from forest stands which are not included into concessionaires' harvesting plans (e.g. the younger ones for pre-commercial thinning and coppice stands for conversion). In this way, there is no influence of concessions on the timber supply for local people. Moreover, a policy guideline regarding the possibility for joint utilisation of state and private forest parcels near settlements, which is actually not implemented yet, was adopted in the NFFLAP [16]. Indeed, no preferential treatment of local communities for bidding on such concessions, or possibility for awarding them directly, was enabled by law. Major benefit for the local communities however is the obligation of the FA to pay currently even 70 % of the concession and other fees for forest utilisation to municipal budgets. In 2000 it was 10% only. And not at least, further possibility for employment of local people within the concessionaires' companies, as well as in the context of joint forest utilisation, exist and is expected to grow.

5.4. Length, size and type of concessions

In Slovenia, concessions to privatised companies as successors of socialist forestry enterprises were awarded for 20 years (from 1996 - 2016), for the extent of forest operations they previously performed and within the forest regions they previously managed. Thus, the concessionaires received long-term right on utilisation of state forests, which includes ownership of wood assortments and - apart from the utilisation - also other forest operations (as listed in sub-chapter 5.5). However, no forest management planning and other forestry service activities were included into their obligations. For the remaining state forests and other forest land, concessions have been enabled to other companies, for 10 years duration. For awarding new concessions after the previous had expired, also 10 year period is envisaged. Almost all forest areas (93%) in state property were thus covered by the concessions [23]. In terms of concession size classes[36], there were 4 large, 5 medium, 5 small and 1 very small concession in 2011. State forests, which have been newly purchased after 1996 and are usually in smaller parcels, have currently been offered for concessions in such a way that mountain farmers can apply and that their total forest area not exceed 200 hectares.

In Montenegro, the long-term concessions (for 7, 15 or 30 years) started massively to be awarded in 2007 and 2008 to the former, privatised forestry enterprises and other private forestry and wood industry companies. The concessions have been awarded on free competition bases for forest utilisation, which includes ownership of wood assortments, and apart from harvesting operations also building and maintenance of forest roads and tractor ways. In case of one - the biggest - concession also sylvicultural and forest protection operations were included. No forest management planning and other forestry service activities were included into them. Before that time only one-year contracts for utilisation of state forests, based on selling the standing timber and performing the necessary building of forest roads and tractor ways were implemented. In one forest region this is still the case. Concessions have been awarded for the level of forest management units. This criterion is

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[36] The following classification is used in this paper: large (> 100.000 m^3), medium (>50.000 - 100.000 m^3), small (10.000 - 50.000 m^3) and very small (up to 10.000 m^3). Values are per year.

now also part of the forest law. Based on classification used, there are currently 1 large, nine small and twenty very small concessions (Terzic, 2012). Big majority of high / commercial state forests was covered by these contracts. For the minority of forests, one-year contracts have further been concluded until 2012 for the level of forest sub-compartment. However, concessions for non-commercial FMU with predominant coppice forests and other forest land could not be awarded. Consequently, currently 57% of the total state forest and other forest land are under concession contracts only, while 3% under one-year contracts [Terzic, 2012]. These forest and forest land areas stands at disposal for fuel and other wood supply to local communities.

5.5. Concession fees and revenues from concessions

In Slovenia, the concession fee was determined by the ALFF law [18] as a difference between the annual revenues from timber sold at road side and recognized costs of forest operations, which consist of costs for cutting, skidding, selling of timber, protection and sylvicultural activities, other activities required for social and ecological functions of forest and costs for construction and maintenance of forest infrastructure except maintenance of forest roads. The Concession Decree [20] further specifies the calculation of the annual revenues from timber sold at road side, based on their quantity, quality structure and market price. In order to assure real data, concessionaires are obliged to send data on quantity and quality for every shipment electronically to the ALFF's central server as soon as a truck is loaded and prepared to leave the forest. They are obliged to classify the timber in line with national standards that were issued just for this purpose. Apart from that, every log over 20 cm in diameter or every shipment of other industrial or fuelwood must be bar-coded. Market value of timber is determined by the ALFF on the basis of timber market analysis in Slovenia and neighbouring countries as well as information of prices achieved on concessionaires' auctions. The latest must be performed if particular concessionaire does not agree with the prices set by ALFF. The recognised costs of forest operations are also determined by the ALFF on the basis of working unit costs, machinery costs and average effectiveness of forest operations. Working unit costs are calculated on the basis of the collective contract for forestry and recognised indirect expenditures derived from special studies. In terms of development of these calculations from 1996, it could be stated that the essence of the method has not changed much, but the most important above details have been added in 2010. Thus, the annual revenue from concession fees (out of VAT) between 2008 and 2010 was relatively low for the ALFF, amounting to 17% of the value of wood assortments at the road side [23]. Such revenue was realised in the situation in which the harvesting plans were fully realised, while biological and technical investments to forests from 80 to 90 %. For the near future it is expected, based on the changed methodology for calculation of concession fees that the concession revenue for the ALFF will significantly improve.

In Montenegro, calculation of initial concession fees was based on estimated value of standing timber planned for harvesting, calculated deductively from the value of wood assortments at the forest road (from which the estimated costs of harvesting and hauling were deducted) and deduction of estimated costs for the planned building and maintaining of forest roads and tractor ways. In case of the biggest concession also costs of sylviculture and forest protection were deduced. The prices and costs for the calculations were taken from experiences with previous one-year contracts for forest utilisation. The initial concession fees are offered at the tenders. The concession fees, determined on the tenders and agreed within the concession contracts in 2007 and 2008 had not been changed until now, although foreseen

so in the concession contracts. The forest law now obliges for annual adaptation of concession fees based on realised value of wood assortments and recognised costs of appurtenant forest operations. More detailed regulation of the methodology is currently still in preparation. Apart from the concession fee, the concessionaires and forest owners are obligated to pay also a compensation for professionally-technical services provided to them by FA. That fee has been defined by a by-law. The concession fees between 2008 and 2010, as found out in a special study (Ferlin et al., 2012), could be assessed as relatively high on average for the given concessions' arrangements, amounting e.g. 39% of value of wood assortments at the road side. However, the realisation of the concessions in terms of the extent of harvesting (up to 83%) and payments of concession fees (up to 72%) was insufficient and also forest investments were well below the FMP.

5.6. Bidding on concessions and transparency in concession allocation

In Slovenia, there was no bidding in case of concessionaires with the direct concession right. The bidding only follows in case of few other companies. For all concessionaires, the ALFF law [16] provides for possibility to assert their priority right at public tenders for the next awarding of concessions. The amended Concession Decree [20] lays down detailed procedure for bidding on concessions in line with public procurement regulations. A number of conditions that bidders should fulfil are set out, such as suitability to pursue the professional activity, economic and financial standing and technical and professional ability. The only criterion for selection of bidders that fulfil the conditions is the maximum concession fee offered. Very detailed procedures on awarding concessions were proposed by European Commission in 2011 [2], which will apply also to Slovenia as an EU Member State, however for concessions over value of 5.000.000 €, once finally adopted by the Council and the Parliament.

In Montenegro, all concessions have been competitively awarded. However, usually there was no real competition at tenders and the initial prices have been accepted. Detailed procedures on bidding and transparency on concessions are laid down in the 2009 Concession law [15], which is harmonised with the EU requirements. Before adoption of the law, the procedures were based on 2002 Law on participation of private sector in provision of public services [14]. This procedures require, among others, the following: (a) public consultation on the annual plan of awarding concessions; (b) establishing and maintaining the register of concession contracts; (c) allocation of concessions through different types of public tenders depending of complexity of concessions except for the ones for which public tendering could be excluded; (d) criteria for evaluation of bids and (e) information of the tendering results. Professional (minimum number of forestry employees) and technical (minimum equipment needed for forest operations) conditions for forest concessionaires are now requested by forest law. The technological criteria, such as wood industry processing capacities needed, are additionally given by the tender documentation, based on special Governmental concession "act". Additionally, it is agreed among the FA and concessionaires in the concession contracts that they will process all harvested wood in their own capacities. The criterion for selection of bidders that fulfil the condition was the mixture between technically-technological (60% weight) and financial (40% weight) components of the offer.

5.7. Concession management and performance incentives

There was no special concession management and/or performance incentives' system established in the countries concerned. In Slovenia all concessionaires have the possibility to assert their priority right at public tenders for the next round of awarding concessions. In Montenegro, possibility for extension of the concession contract exists in the law (for 50% of its duration), although no criteria or previous performance check for that have been prescribed or agreed by the contracts. In terms of management incentives, the Government only provided

some additional financial help to the so called strategic forestry concessionaires, when it deliberated them from the obligation to pay a special fee for professionally-technical forestry services provided by the FA in 2008 (Terzic, 2011).

5.8. Inspection, monitoring and audit of forest management

In Slovenia, forest inspection supervises forest concessionaires in the same way as forest owners. In addition the SFS checks if the trees marked for felling were felled and not others and if other requirements set out in harvesting permissions, which are issued also to the ALFF, were met by concessionaires. The ALFF monitors and controls if concessionaires comply with their concession contracts. Among others, it is obliged by the last amended Concession Decree [20] to check at least 2% of timber loaded on trucks if it corresponds to the national timber classification standards.

In Montenegro, forest inspection supervises forest concessionaires similarly as in Slovenia. There is also an additional, special service within the MAFF, a kind of third party, anticipated for independent monitoring of forests. The FA, as forest service and concession awarding authority, provides both, the general monitoring of forests after harvesting, including checking if the trees felled were marked and forest order has been made, as well as it monitors and controls if concessionaires' comply with their concession contracts.

6. Discussion and lessons learned

Appropriate forestry organisational model and responsibilities of state institutions is always the key for successful state forest management, particularly with concessions. In Slovenia, the organisational model could not be considered as effective enough in assuring the state interests in concession management because: (a) responsibilities in management of the state forests have been divided amongst two state agencies, which is a unique organisational model; (b) the ALFF could, because of some higher reasons, employ a very limited forestry staff only and thus had a limited capacity to deal with demanding planning, administration and monitoring of concession contracts; (c) the SFS with appropriate human capacity and coverage of forests, providing all necessary inputs for concession contracts to the ALFF, had no specific responsibilities in controlling concessionaires' relations. Consequently, the concessionaires were always stronger partner in negotiations about the key concession issues, and particularly the concession fees. Because of that, there are currently actual policy ideas at the state forestry side to replace that organisational model by a united state forestry company model to which both of the state agencies, the SFS and ALFF would be transformed. Within such a new model, concession system could still be retained in an adaptive form, or cancelled and replaced with other systems for allocation of forest resources or providing of forest operations only, which could bring larger added value and revenue to the state. Montenegrin forestry organisational model, where all responsibilities and capacities, although lesser than Slovenian, are in on hand with the FA, could be assessed as better one for the concession management. However, a major disadvantage in this regard is a pure administrational status of the agency, which is not appropriate for performing the commercial forest function, and has serious problems in its budget financing and regular functioning as well in its human capacities related to low remuneration standard of employees.

All forest plans, mechanisms and procedures in Slovenia very well assure ecological sustainability and multi-functionality of forests also in case of concessions. This is the case also in Natura 2000 areas, which prevail in the forests under concessions, where no negative influence of the conservation regime on harvesting trends is exercised. Thus, Natura 2000 regime in principle does not lower the economic sustainability of the ALFF or the

concessionaires. Mechanisms, required to protect all forests again degradation and illegal harvesting in Montenegro are theoretically much more demanding and stronger than in Slovenia, but with little efficiency because of their usual miss-use in practice. Introduction of bar-code system for tracing of timber from the felling site is expected to overcome this. The FMP should in principle also well assure ecological sustainability of forests. However, level of their implementation is much too low, both in terms of harvesting amount and, particularly, biological and technical investments to forests.

State forest and concession management in both countries significantly contribute to local community development. In Montenegro the obligations for financial support from the state forest / concession revenues (70 % of them) to municipalities went even so far, that would totally endanger financial sustainability of state forest management and functioning of the FA, if it would not be compensated to forest sector from the integral state budget. From the other side, no responsibilities and activities of the FA have been transferred to municipalities, in order to be financed from the state forest sources.

Based on the type of forest concessions applied in both countries, it could be concluded that these are a kind of shared forest utilisation - forest management concessions, but without forest management planning and other professional forest service activities. The concessions are in Slovenia more complex and larger than in Montenegro, if forest utilisation and operations are considered. However, from the wood processing aspect, which is not part of concessionaires' obligations in Slovenia, the Montenegrin concessions are more complex.

The decision on concession length, size and scope of operations in Slovenia was mainly political, based on strong interest of the forestry companies. In terms of the concession size, there is currently a common convenience that they should be different in order to serve as instrument to achieve sustainable development goals at national and local level. The decision in Montenegro regarding length of concession contracts was strategic, with higher duration for bigger and shorter for smaller companies. However, different durations of concession contracts, not harmonised with validity of forest management plans, always create problems. Based on experiences of both countries, it would be most optimal, if concessions - except for very small ones - would be based on individual FMU and/or validity of FMP, which is 10 years. Possibility for extension or renewal of concessions based on permanent (annual) monitoring and positive performance evaluations of concessionaires should also be given.

An appropriate concession fee or revenue calculation methodology is a key for success in concession management and corresponding relations between awarding authority and concessionaires. In Slovenia, a number of essential details for calculation could be added only in 2010, after political consensus was reached on the fact that concession fees based on the former, too roughly defined methodology were unreasonably low. Concessionaires have namely always found ways to prove that market prices are much lower and the expenses much higher than determined by the FALF, resulting in lower concession fees. That is why the concession management in Slovenia could not be assessed as economically efficient and sustainable enough for the state and the FALF, respectively. From the other side, such forest utilisation system could be stated as ecologically fully sustainable. In Montenegro, where the concession fees were quite high, the concession management could be assessed as economically unsustainable for other reasons, mainly because of insufficient realisation of allowable harvest and insufficient payments of concession fees, resulting in insufficient revenues for functioning of the FA and sylvicultural and other biological investments to state forests. Also ecological sustainability of state forest utilisation was critical because of non-sufficient capacities and technical skills and experiences of concessionaires, resulting in non-adequate quality of performed forest operations.

Based on all the above, it could be critically stated that described concessions in the countries concerned have not fulfilled all the expectations of the state forestry decision makers. In terms of introduction of such or similar forest concessions to other countries, the warnings of the USFS [24], cited in the background of the paper, could entirely be shared by the authors. Namely, appropriate state forestry organisational and strong institutional capacities for planning, monitoring and supervising of the concessions, based on firm general forest and specific forest concession legislation, appropriate forest management plans, existent norms and standards, precise data on planned and realised harvesting amount and quality structure of wood assortments, knowledge of current forest products, services and labour markets, as well as adequate professional, technical and financial capacities of (anticipated) concession holders, are all key preconditions for successful implementation of forest concession system. If the preconditions could not be met, but corresponding human capacities of state forest agencies exist, it would be more recommendable for them to use short-term standing timber sales, followed by separate contracting-out the works for biological and technical investments, or to arrange complete timber harvesting and selling of wood assortments on their own combining with contracting-out of the forest operations and investment works.

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ROLE OF REGIONAL FOREST ON CONTINENTAL ENVIRONMENT

MOHAMMAD MASOOD GHELICHKHANI[37]

Abstract

Desert occupies most of countries around *Europe* mostly from the east and eastern south side. Some special plants in such desert wonderfully form forests or bushes and extended outside the non-European countries toward Europe borderline from north and northern west. Such regions forest influence on Europe Environment whether directly or indirectly. In recent years we are witness of some high change on climate & ecosystem in the region in a big scale.

Arabic Dust that affect ecosystem highly and public health harmfully, be formed by Arabian countries like *Syria*, *Iraq* and *Saudi Arabia*'s deserts is just one of results of destroying and neglect of desert forest. It moves far away thousands kilometers toward countries around like *Iran* in which located northern east. Such disaster reaches *Iran* and influence directly on all people and living beings' life. It affects environment in hundred millions hectares of the region. Such phenomenon can happen over west or northern west countries those are *Europe* gates. Moreover; any climate change or forest lost in a region of world affect other regions especially nearest ones badly as increasing global temperature.

Iran as a country neighboring *Europe* can be a suitable sample to address continental role of regional forest in nature. Existence of driest desert and consequently the most resistant species tree and bushes in *Iran* as well as be impressed by influence of changed habitat in the countries around *Iran* gives us opportunity to be familiar with such forest and their function to maintain environment.

Keywords: Desert Forest, *Iran*, *Europe*, Environment, Arabic Dust, Regional Forest

Introduction

In summer 2010 *Tehran* capital city as well as other cities located in west and southern west of the country has announced closed down by the state. Because; air pollution caused by very tiny dust coming from outside of the country borderline by west & southern west direction. Where countries such as *Syria*, *Iraq*, *Saudi Arabia* even Jordan located that are thousands kilometers far away from Tehran Capital city of Iran.

The reason was high drought of those countries' desert besides be destroyed desert vegetation, which in turn caused intensive windy soil erosion. An incident that hadn't happened before so and was a really new disaster. Such flying dust may move toward west or north where located *Turkey* and *Cyprus* or *Armenia* as primary European countries then even countries farther. In that case critic regions would extend until *Europe* and the lost would be so much.

Also, desert in *Iran* and countries around are hundred millions hectares that extends until *Africa* that then continue until *Atlantic* ocean that are near *Europe* from south and east where countries like Spain or Italy in north located as the gate of the Europe. If such wide region lost their special forest vegetation that protect soil and ecosystem, the other similar disasters be formed and influences on region habitat in a bigger scale. Such disaster in its turn affects farther regions around like *Europe* soon or later. In turn, in this manner, global environment would be under the effect.

Desert forest are plants that tolerate a very difficult situation to stand on desert with low wet and high temperature difference between night and day also soil poorness. So any desert forest lost would be restored and compensated too hard. Many kind of rare animal lives depend on such forest that increase biodiversity. Any damage over the forest affects animal and habitat that influence on people's life which are living in or depend on.

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Immigration to other countries would be another consequent of neglect of importance of desert forest that play important role on human life. Can be said Europe forest be affected by desert forest and they are connected to each other and as a matter of fact on a way connection. European forest and its ecosystem are as breakable as desert forest and consequently main care over desert forest is noticeable with regard to this connection.

Desert forest is not dense, doesn't product wood or enjoys high height or thick demeter. They are thinly scattered, resistant to drought as well as sand storm and high difference temperature. They prevent soil orison, provide plant eater animal with food, survive living being in desert and produce oxygen also reserve water source like other forest but with fighting and tolerate very hard condition to be survived.

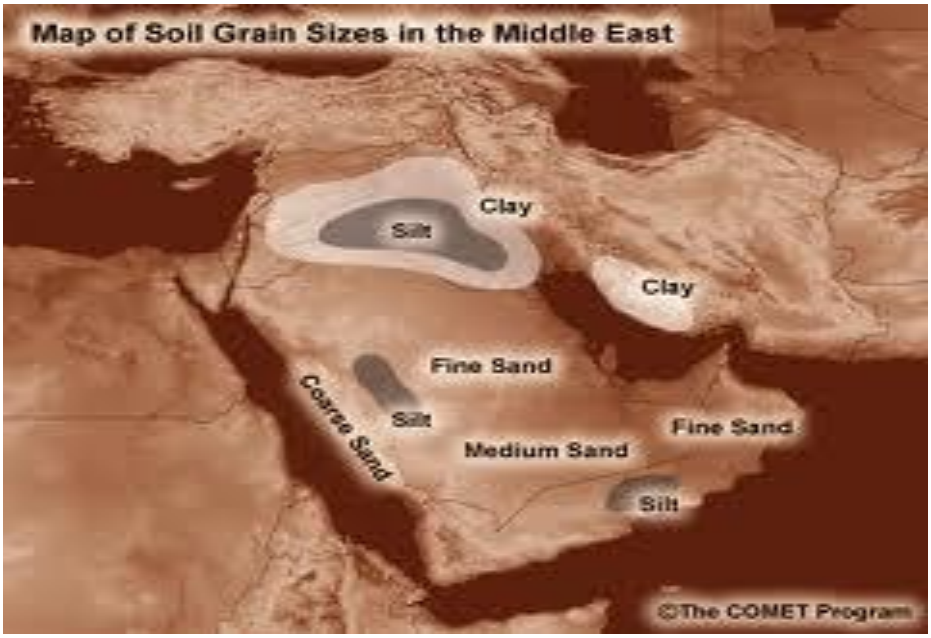
In *Loot* Desert in eastern north of Iran it rains never with a heat reaches sometimes more than 50^0C nevertheless we can find some kind of plant there. Negro sexual trees can growth in such situation and can regenerate too.

In center of the country; in *Kavir* desert there is more rain and more kind of trees and bushes as well as more some kind of animal can be found. *Tamarix*, *astragalus*, *Atriplex* are same kind of plants there.

Around these two desert region, there are semi-desert areas that trees become more various and denser, thicker and higher like *Amygdalus*, pistachio and *Pinus*. In mountainous districts of such areas some kinds of oak there are like Persian oak. Some kind of desert trees live long time more than thousand years like *Juniperus* in desert around rivers, oasis and springs palm gardens are prevailing.

Surprisingly, nearly all of the most familiar Iranian fruit is produced in desert area like *Pistachio*, *Pomegranate*, *Dat*e and *Ash* (*Senjed*). So this area is important for sake of their

Figur1. Soil & Location of the disaster region



fruit productions to which mostly export abroad.

There are special rules about desert forest & bush on Iranian forest to protect them from extra use and damage.

Arabic Dust disaster showed deserted areas in those countries cause such tragic phenomenon and hereon need to new and serious care. Many years war in *Iraq* created new desert and set deserts aside in worse situation that most share of Arabic Dust belong to Iraq while desert in Saudi Arabia is wider and drier totally.

The dust caused *Zagros* oak be dried as the red fatal in sea because it intensifies drought and warmth as well as respiratory problems.

Such pollution enters directly blood and become as ball then causes hurt halt.

That is advised old men stay at home and in case of emergency going out use a cloth humid with a battle of water in front of their nose and mouth. Of course, some times size of particles is such tiny that cross mask easily too. Thereupon it's better to not go out of house.

Sonamy of Arabic Dust

In spring 2012 once again Arabic Dust attacked Iran's border line more and stronger than past years. This reality shows that disaster has become worse and namely protection activity wouldn't be sufficient consequently. But why and how the disaster happened recently worse while there wasn't precedent so in preceding years before?

Some main reasons consist in:

Very dry whether and sedimentary soil of *Iraq* as main source of this dust sonamy is basic reason. Soil in such climate can be carried by wind as well as movement of earth and then travels hundred kilometers farther. But on the other side land of Iraq has been watered by many of big rivers like *Forat* and *Dejle* originated from Turkey and Iran that make vast wetlands too. In recent years; after starting war between Iran and Iraq many wetlands dried as well as clear cutting forest & gardens by *Iraq* arm because of military intents. No protection over the forest and gardens applied during the war and after. Rushing *Nato* force made the situation worse. On the other side weak governmental regime prevent compensating the damage.

Moreover, constructing dams in *Turkey*, *Syria* and *Iran* that each one effort to obtain more share of water for its population has caused to reduce the river debi. For example constructing *Ataturk* dam in south of *Turkey*, although progress agriculture in *Turkey* but limited entranced water to Iraq. So wetland that play role of filters to absorb dust were be dried and centers of dust be formed. Clay layer there were under this wetland that are very tiny and can be taken by wind meantime their stability in air is long. Such particles remain 5-6 days in air and reach even *Tehran*.

So that Debi of *Arvand*, *Forat* and *Dejleh* have amount to less than 50%. So there is no flood like past. Little water from rivers not be able to provide the wetlands with the appropriate water to not be dried.

Todays about 2000.000 hectares of wetlands in south of *Iraq* plus nearly 500.000 hectares in *Syria* changed into critical centers of the dust that if calculate other countries like *Jordan*, *Saudi Arabia* and *Kuwait*, total of sources of the dust amount to more than 5000.000 hectares. Although *Iran* suffers from this disaster but just 5% of total the dust is being produced in Iran itself. In the other word; *Iran* is suffering disaster due to it's around & neighbor countries environment damage.

Amount of dust reaches to 10.000 ppm and in some area even until 30.000 ppm. Size of these particles is less than 10 micron. 6 centers of this critical events there are in west of the country Iraq, Syria and Arabia Saudi, while 4 centers just located in Iraq that most of dust emerged from there.

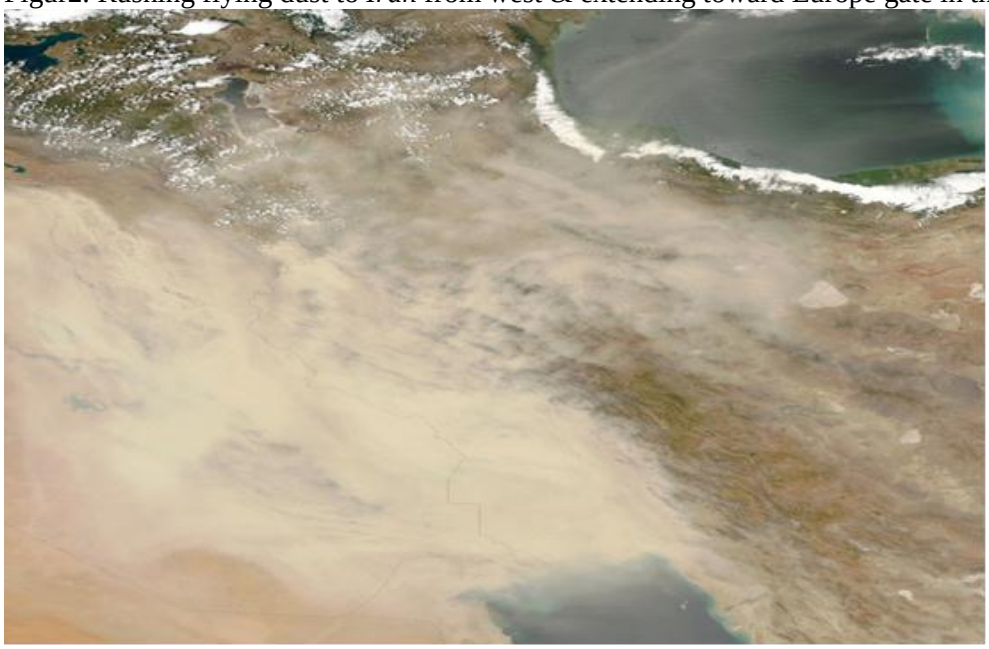
Totally 17 countries in the territory are under this disaster. In effect of this phenomenon, eyes can see just less than 500 meters forth. This tiny thing can combine with other ordinary pollution like solid particles & chemical substances and then enter body trough respiration that causes various diseases.

Before 2005 this phenomenon wasn't be dangerous and serious like at present although such dust has always existed. But destroying local wetlands, water channels, minor lakes as well as desert trees and bushes plus exploiting big rivers for various purposes culminated to this happening. 130 dams just in Turkey has reduced amount of water in the rivers in Syria and Iraq so that width of the common river combined from two rivers *Dejle* & *Forat* in the mouth has reduced to15m from 30 meter in near past.

This sonamy at present crosses *Iran* and goes farther countries in east like *Afghanistan* and *Pakistan*. Also that is reaching northern neighboring countries like *Armenia* & *Azerbaijan*. In future it will be possible which Arabic Dust reach many other farther countries like *Turkmenistan* and *Turkey*. In that case we can say Arabic Dust may enter and influence on *Europe* that would be a real and serious critical continental disaster. If we remember countries in northern *Africa* located in southern borderline of Europe countries like *Spain* and *Italy* plus countries in Mediterranean Sea like Cyprus, it is probable that this disaster would belong to 3 continents.

On the other side; although such phenomenon takes place mostly in summer but at present it can be see even in winter and autumn when whether is less dry too. Hence it is becoming longer as well as to be stronger. That not only causes many diseases but also would change climate highly.

Figur2. Rushing flying dust to *Iran* from west & extending toward Europe gate in the north



Raining will becomes less by influence of it that also causes drying more lands also more disaster in its turn. Soil erosion would be highly then no vegetation can emerge on this lands where would change into desert more and more. Thereby that's fundamental to find efficient solution and put it to action to prevent this disaster. To solve this environmental problem we should remember his reality that any destroying desert forest in a small region in a country affects a big territory in many countries thousand kilometers other side.

Records & Statements

Among the provinces just four ones in eastern and east southern by internal sources and other from external sources be affected

As be said on the influence of the disaster respiration diseases increased until 25%.

Above all respiration diseases and other air pollution accidents may be result many decades later.

In some eastern provinces flying dust has internal source produced mostly by storms over the desert with low vegetation and high drought. For example due to such storm, power of sight limited to less than 200 m. And amount of the tiny sands amount to 15 times of standard. One of the main reasons of this tragic event consists drying *Hamon* Lake. Nowadays famous 120 days storm surprisingly has exceeded 180 days yearly that isn't natural and normal anymore.

During 10 past years, the numbers of days when power of sight becomes less than 2 kilometers have been increased. Also Number of dusty days increased more than 40% in west and 30% in center of the country. So that in 10 recent years 4 provinces involved in 120 till 140 dusty days(South and eastern south).nevertheless fortunately number of these days in Tehran maximally amount to 10 days so situation in Tehran isn't critical still.

This disaster even reached *Kerman* Province and made temperature warmer. The people for first time saw this phenomenon. The dust recently located in above layers of atmosphere, but now it can be seen among people life.

In 10 May (IRNA, 2012) [1] sky of *Tehran* became dusty once again.

According to the governor-general, although world standard is 150 but they obliged to define new standard to use locally standard .Namely if it amounts to 2000 just primary schools will be closed down, if reach 3000 all educational centers , and if pass 3000, all governmental offices will be closed .

In 16 May (Iran-Tejarat News Agency,2012)[2] once more dust hushed to Iran and consequently western provinces closed up and Tehran might be closed down but situation was in alarm especially in hospitals and primary schools.

Dust with less than 2.5 micron with 150_{PSI} and particles less than 10 micron with 115_{PSI} made Tehran air in alarm situation.

Wind in Arabic countries causes dust enter Iran then rain and wind in Iran cause to remove that although experience shows the duct enter the country again in 2 days.

In 22 May 2012 (Ghanon News Base,2012) [3] entrance of Arabic Dust to south and western south of the country caused be canceled national and international flights also wandering passengers in *Mehrabad* international airport for many hours. That day amount of dust became 23 times of permissible amount.

In one of the western province named *Lorestan*; people have lived recent 3 years in dust for 300 days a year and it almost can be said people lived one year in dust.

While permissible amount is 150 microgram in cubic meter, in some cities of *Khuzestan* it reached 334 until 1020 microgram namely 2.5 until 13 times. It became in some days 3168 until 4873 microgram namely 21 until 32 times of permissible amount and made flight be canceled because of reduction of the sight to 400 meters.

In 30 May 2012 (Shafaf, 2012) the new wave started to inter *Iran* that involve 20 provinces and reach middle of Iran and brought good tiding about cessation.

In 17 Jun 2012[5](IranFars, 2012) [4] new wave of Arabic Dust came into Iran.

While in some cities of *Iran* air pollution was unknown but from 3 years ago rushing tiny dust caused for example *Tabriz* in northwest of the Iran taste the disaster for first time. Reduction of measure of the sight less than 200m is result of this bad event as well as cancellation of many flights of *Tabriz* Airport.

In 19 Jun (CHN, 2012) new wave of dust enter country and caused closing up west southern provinces. That day the governor-general local down announced center city of *Khuzestan* province is closed down as well as before in 23 May because of intensity of the disaster.

Dust pollution from hot plains of *Syria*, *Arabia Saudi* and *Iraq* aimed cultivated area of *Iran* where acceptance of such event contrary to the location and situation of Arabian people who got used to, really is problem.

Solution & Discussion

No much efficient works can be done in *Iran* alone about the disaster irrespective of considerations in regard to preventing of bad effect of Arabic dust on public health. The notices such as: closing down offices and schools in emergency times or recommend people to be at home or use suitable mask.

Any environmental activities in country won't reduce Arabic Dust in which are produced *Iraq* and other country as said above. Fundamental affair in this ground is international cooperation with all regional countries from turkey to Arabia Saudi especially Iraq. Sprinkling mulch on the sedimentary soil, planting suitable plants, releasing more water from lake behind the dams in countries where river reach *Iraq* from them and protecting remaining wetlands also desert forest are the basic solutions.

Mulch sprinkling on about 5000.000 hectares whether is applicable? How many percentages of critical lands should be mulch sprinkled and on the other side how many shares should be planted? How much right of water of the rivers belongs to regional countries must be released to increase debi of the rivers? How to revive channels, wetland and minor lakes?

All these methods must be studied and come under control. Above all; whole those solutions need good cooperation between countries in and even with outside the region to prevent extending disaster in future.

Acquaintance and be familiar with role of desert forest on regional environment also continental habitat as well as recognizing other kind of forest even in farther countries is key primary step to move toward the solution.

At present; 25 provinces among 32 ones are involved in the disaster that need cooperating *Iran*, *Iraq*, *Saudi Arabia* and *Syria* with each other while *Iran* noting can be done alone about. In this

ground that has been prescribed that in 5 years' time 1200000000$ then in 10 years 2400000000$ would be spent for desertification.

The noticeable matter is that Iraqis have fallen into the habit and come to terms of this disaster and it will be a worse calamity in case Iranians become so and get used to the disaster. Therefore it's important to be confirmed how much this disaster is dangerous.

In a word, main culpable country is turkey since moored frontier water with many dams causing to dry Iraq plains as well as palm gardens. Turkey must accept its role and undertake a share of damage. Iraq cannot do lonely in this ground. If all arrangement would be applied; solution of problem will last at least 10 years. Prevention of drying wetlands, guarding ranges and controlling animal husbandry are part of a long programme that need appropriate cooperation of all authorities in regional countries.

Who is in fault isn't important as question is: what to do? Soil stabilization, mulch sprinkling, planting, fructifying clouds, wetlands revival, destroying some dams, even sprinkling of water; Which one(s) is applicable and appropriate ultimately?

In total; There is no physical action about flying dust directly in Iran but only must take action basically in regions where are the sources of dust to prevent entrance of Arabic Dust to the country . As matter of fact in case of mulch sprinkling, it would last just for 3 years so enormous investment is needed.

Fructifying clouds isn't so efficient and affect just l between 10-15%. Also this technology work where the raining is more than 250mm annually. Hence; in eastern, southern and central provinces that isn't applicable. In other side, while the technology taken from Russia, the question is why they themselves didn't use that technology when great forest fire took place recently?

Mulch sprinkling isn't an excellent idea because it uses an oil substance and corrupts soil and isn't suitable for plants to grow up.

Any plants in houses help to avoid bad result of this pollution because they clear pollution to some extent.

It be said *U.S.A* likes this disaster as a soft war rushes *Iran* and there is no interest to be taken any action in Iraq even by world organizations. Existence of foreign force in Iraq has caused more dust pollution. Agriculture was being destroyed, and soils that have been stabilized become unstable by bombing so faced problem. In past Iraq used hydrocarbon on its desert that such substance cause to enter dust to air less but after attacking U.S army the problem has intensified during recent years.

About solving this environmental problem, agreements took place and tools of mulch sprinkling have provided but to be executed there are two problems in Iraq: first not security in *Iraq*, second not pay 250 millions$ from *Iraq* as expenses annually regarding 200.000 hectare.

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THE INFLUENCE OF CLIMATE CHANGE ON THE FORESTS OF SOUHTERN ARMENIA

ANDRANIK GHULIJANYAN[38], ARMEN GEVORGYAN[39]

Abstract

Armenia is a country with limited forest resources. The total forest covered area is around 330 000 ha (11%), with a total volume of 41mln m^3, average volume per one ha is 124 m^3, average increment is 0.4 mln m^3, 0.1 ha and 12 m^3 per capita.

The forests in Armenia have environment protection, social, economic as well as strategic national significance. However, due to human pressure and nature climatic factors, they have considerably decreased in areas and became unevenly distributed.

66% (84% of the total volume) of the total forest covered areas are located in Northern regions, 24 % and 10% in Southern and central regions respectively.

The forests have altitudes ranging from 550 to 2 500 m above sea level, forests located on the slopes of 20-30˚ are dominating, stressing the nature protection significance of the forests.

The massive haphazard cuttings on around 70% of the forest areas over the past 20 years have resulted in deterioration of erosion control, water regulating, climate regulating and self regeneration capacities typical for mountainous forests. The erosion processes have become more intensive. Loss of biodiversity and undesirable alteration of valuable species to low-value species became obvious disturbing the ecological balance in some areas. Climate change has also contributed to the abovementioned negative phenomena.

Climate change is a serious threat to the preservation of biodiversity, because it results in radical changes to the habitat environment of numerous plant and animal species. According to meteorological observations the annual temperature has increased by 0, 85 ˚C and the annual precipitations have decreased by 6%.

According to Second National Communication on Climate Change, the boundaries of natural ecosystems may move upwards by 200m within hundred years, which will result in severe structural modifications on both ecosystem and species level.

The forests of lower zone (600 1 200m above sea level) of Southern Armenia will be more vulnerable in the scope of predicted changes. The worsening of forest growing conditions will lead to intensive introduction of semi desert species to forest areas resulting in the loss of around 5600 ha forests.

Keywords: Forest, climate change,

Methodology of the study

The basis for describing the general characteristics and conditions of forests were the data of inventory, registration and assessment in 2007-2009 in forestry units of the region. The inventory and assessment of forests were done by the visual-measurement method, which is implemented by combining visual, sample measurement and calculation assessment works.

In mountainous conditions, additional indicators for assessment were altitudes above sea level, slant and location of the slope, the level of soil protection and erosion, etc. Field inventory results were processed by “СОЛИ-2” computer software, adding also new models, such as Flora characteristics, man-made transformations, soil characteristics, biological diversity, etc. The link with geographic information system (GIS) has also been developed. For mapping of marz forests, the basis was the

[38] Zikatar Enviromental Center SNCO
[39] Regional Environmental Centre for the Caucasus

forestation maps of forestry units, 1:25000 scale topographic maps and satellite imagery. In order to determine forest areas damaged by fires and pests and the extent of the damage, during field studies we measured burnt and damaged areas using GPS, recorded the geographical location, altitude above sea level, etc. For the damaged stands, the type of damage, percentage of the damaged trees and the extent of the damage are recorded.

The basis for forestry data presented in the current paper are RA Forest Code, RA National Forest Program, approved Forest Management Plans and other legal documents.

1. General characteristics of Syunik marz forests

Syunik marz is located in the south of the Republic of Armenia. The area of Syunik marz is 4506 sq m, which amounts to 15.1% of the territory of the country. The marz borders with the Islamic Republic of Iran, Republic of Azerbaijan and the autonomous republic of Nakhijevan. It includes the basins of the upper and middle flows of Vorotan, Voghji Rivers and the eastern slopes of Zangezur, which is the highest mountain range in trans-caucuses after the Grear Caucasus. The total length of marz borders is 472 kilometers, 85% of which are external borders and 15% (48 km) are internal borders.

In the marz, forests start from 500 m above sea level and rise up to 2400-2500 m - 21.3% of forests (15159.4 hectares) are situated at altitudes up to 1200 m, 12.5% higher than 2000 m and 66.2% at altitudes of 1200-2000 m.

52.67% of forests in the marz are situated on the northern (northern, northeastern, northwestern) mountain slopes, 37.64% on the southern (southern, southeastern, southwestern) slopes and only 9.7% are fully on eastern and western slopes, and forests on southern slopes are more vulnerable to climate change, as well as diseases, pests and fires.

Provision of detailed information on oak and juniper stands depends on their prevalence in the overall forest cover and their high susceptibility to diseases, pests and fires.

Stands with predominantly oak species cover 62.6% of the total forest area of the marz, about 93% are situated on slopes higher than 20°, and 39% of the mentioned areas (16148.5 hectares) are situated at altitudes higher than 1800 m above sea level.

Juniper sparse trees cover a total area of 6899.6 hectares, 86.8% of which (5989.4 hectares) are situated on slopes higher than 20°, and only 3.6% is situated above 1800 m above sea level. This means that special attention should be given to preservation work, considering also the near absence of natural seed regeneration in juniper stands.

Differences in forest growth conditions and forest productivity are clearly seen in the average annual growth indicators per hectare in the average bonitet class, according to which the average reserve per hectare in northeastern forests of Armenia is almost twice higher, and the average annual growth per hectare is higher by 0.52 m?, and the average site class is III-6 compared to IV-8, which also testifies to unfavorable conditions for forest growth.

In southeastern Armenia, the average composition of forests is follows: 5.8 oak, 3.4 hornbeam, 0.4 maple, 0.3 ash and 0.1 other species, where parallel to the increase in altitude the share of oak in stands increases from 4 units in the lower zones of forest to 8.5 units, and on the contrary, the share of maple and juniper species reduces from 3.7 and 1.1 units at altitudes up to 800 m to 2.7 0.2 units at altitudes of 2000 m, while in northeastern Armenia, the average composition of stands is as follows: 3.7 beech, 2.1 oak, 2.3 hornbeam, 0.7 oriental hornbeam, 0.4 maple, 0.3 pine, 0.1 walnut and 0.1 linden.

At the same time, the danger of fires is higher in areas infected with pests. Forest pests have caused the most damage in this region, where seriously damaged forests cover an area of 1400.5 hectares, and as presented in the table below, mainly very steep slopes (35° and higher) are prevalent.

Figure 1. Distribution of forest covered areas by dominant tree species

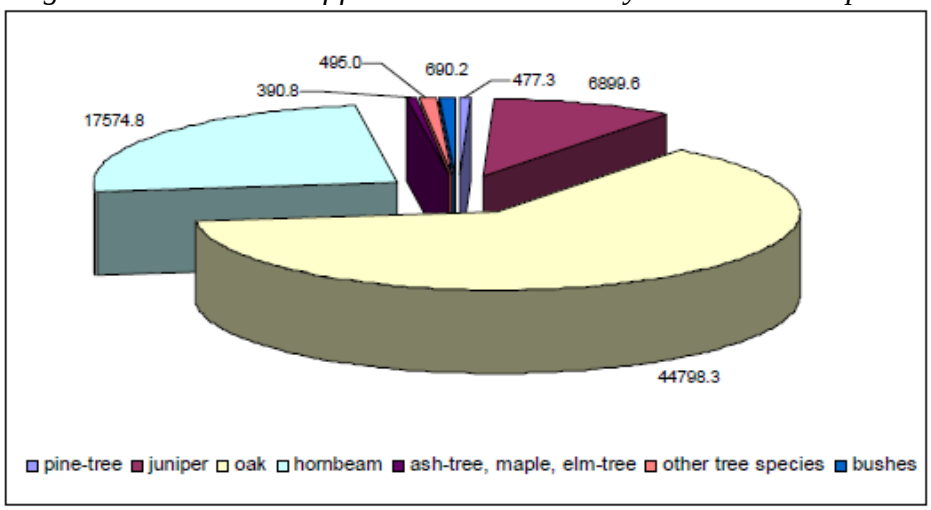

Table 1. Average indicators of southeastern forests of Armenia

№	Height above sea level, m	Average indices of forest evaluation					
		Average age	**Average growth class**	**Average density**	**Average stock of 1 ha, sq. m**	**Annual average growth of 1 ha, sq. m**	**Average composition of thickets**
1	Up to 800	56	IV-9	0.45	48	0.85	4oak 3.7hornbeam 1.1juniper 0.6 ash-tree 0.4maple 0.2 other species
2	801-1000	53	V-2	0.46	45	0.85	4oak 3.3hornbeam 1.7juniper 0.4maple 0.1other species
3	1001-1200	60	V-1	0.47	55	0.92	4oak 2.9hornbeam 2.1juniper 0.5maple 0.4ash-tree 0.1other species
4	1201-1400	70	IV-7	0.50	79	1.12	4oak 3.7hornbeam 1.5juniper 0.4ash-tree 0.3maple 0.1other species
5	1401-1600	76	IV-6	0.51	92	1.21	4.oak 3.6hornbeam 1.1juniper 0.4maple 0.2ash-tree 0.1other species
6	1601-1800	82	IV-6	0.52	98	1.20	5.3oak 3.4hornbeam 0.5juniper 0.4maple 0.2ash-tree 0.2other species
7	1801-2000	86	IV-9	0.50	92	1.07	6.5oak 2.7hornbeam 0.4maple 0.2juniper 0.1ash-tree 0.1other species
8	2001-2200	83	V-2	0.48	72	0.86	7.8oak 1.6hornbeam 0.3maple 0.1ash-tree 0.1juniper 0.1other species
9	Higher than 2200 m	91	V-4	0.46	68	0.75	8.5oak 1.1hornbeam 0.3maple 0.1other species
10	**Total**	**75**	**IV-8**	**0.50**	**80**	**1.07**	**5.8oak 3.4hornbeam 0.4maple 0.3ash-tree 0.1other species**

2. Analysis of the impact of main climatic factors on forest ecosystems

The mentioned sudden changes of climate have a direct impact on the growth of forests and their productivity indicators, where this is clearly reflected at different altitudes above sea level. The lowest indicators of forest assessment belong to the lower zones of forests.

Parallel to the increasing altitude, average forest assessment indicators improve, which is expressed by average bonitet class (improvement of soil conditions), improved average fullness of stands, average reserve per hectare and average annual growth per hectare. The mentioned indicators are highest at altitudes of 1600-1800 m above sea level, which start to drop at higher altitudes and at altitudes above 2200 m they become primarily equal to the average indicators for lower zones of forests.

During the elaboration of the program of adaptation measures for climate change impacts on forests, three species composition of forests, natural regeneration, fire risks to forests, changes to the spread, development and degree of hazards of pest insects, as well as threats to forest biodiversity are taken into account.

As a rule, higher temperatures and changes to precipitation will have a huge impact on forests seed regeneration and forecasted climate change would create a negative humidity balance in the

lower zones of forests and will create unfavorable conditions for seed regeneration of forests, while the improved temperature regimes in higher zones would create relatively favorable conditions for seed regeneration, which will result in the shape of the upper border of the forest cover. From this point of view, the main threat to forest biodiversity is the changes in the lower and upper zones of forests as a result of climate change, intensive economic activity and grazing.

The recent climate change has created favorable conditions for growth of pests and forests, where the most damaging are leaf eating insects, which are capable of mass reproduction and if timely control measures are not taken, they can cause the desiccation of thousands of hectares of forests. One of the consequences of climate change is also the recent increase in the frequency of fires.

The main measure for combating the hazardous effects of climate change on forest ecosystems is the regeneration of disintegrated forest areas at the lower and upper zones of vulnerable forests and forestation of non-forested areas. Recent forest management plans envisage the regeneration of disintegrated forests and plantations of forest cultures in non-forested areas, but the measures are planned for the entire territory of forestry units without differentiation and attaching priority for the lower and upper zones of the most vulnerable forests.

3. Summary and recommendations

Forest lands in Southern Armenia forestry units and specially protected natural areas amounted to a total of 89660.1 hectares, including forest covered area of 80896.8 hectares, of which 79787.6 hectares (98.6%) natural forests, and 1107.2 hectares of forest cultures; the overall forestation of the marz is about 18%.

In the marz, forests start from 500 m above sea level and rise up to 2400-2500 m - 21.3% of forests (15159.4 hectares) are situated at altitudes up to 1200 m, 12.5% higher than 2000 m and 66.2% at altitudes of 1200-2000 m.

The total reserve of forests in four forestry units of the region, according to forest building data, amounts to 5686540 cubic meters, the average reserve per hectare is 79.7 m?, where for the forests on northern slopes it is 98.4 m?, and for forests on southern slopes it is 59.5 m?. The mentioned data revealed that the conditions for forests growth on southern slopes are relatively less favorable. In the lower zones of forests, the average reserve per hectare amounts to 41.5 m?, in the middle zone of forest growth it is 66 m?, and in the upper zone of forests it amounts to 59 m?.

The average per hectare reserve of forests east to times smaller than the northeastern forests, the average growth per hectare is smaller by 0.52 m?, and the average bonitet class is IV-8 compared to III-6. The average indicators of forest assessment increase parallel to the increase in the altitude of the forested zone until the 1800 m above sea level, thereafter they smote the decrease until the end of the upper limit of the forest.

The relatively large share of beech and juniper tree species in stands of the low results of the forest is explained by unfavorable conditions for forest growth and their relatively high level of adaptability, and the absolute dominance of oak in the upper zones of forests is explained by the biological characteristics of the species.

The visible climate change in the last decade had a negative impact on the sanitary conditions of forests, especially from the viewpoint of pests, diseases and fire breakouts.

The study of forestry units and forest management plans revealed that they basically correspond to the classification of forests defined by the Forests Code, but the absence of some regulations and instructions creates serious problems.

4. Reduction of pests and disease outbreaks as a result of climate change

According to the Article 22 of the RA Forest Code, forest owners, persons running forest economy and forest users shall be obliged to protect forest against massive outbreaks of forest pests and diseases, as well as other natural harmful impacts. The protection of forests against pests and diseases shall include the implementation of forest pathological studies, prevention of the harmfulness of forest pests and diseases and sanitary cuttings.

According to the Article 23 of the Forest Code of Armenia, forest users who conduct forestry activities shall implement forest pathological studies in forests under their responsibility, and the resulting prevention measures for pests and diseases shall be organized centrally by the competent

governmental body (article 24).According to the timetable for implementation of the measures of National Forest Program of Armenia, it is planned to study the phytosanitary conditions of forests in the light of forest protection (point 6), damage assessment and application of integrated forest protection measures, aviation and above ground control measures on 10,000 ha forests annually.

In forest management plans of marz's forestry units, for each year of the 10 years of its implementation, it is planned to conduct forest pathological studies in target areas.

The abovementioned Articles have not foreseen the need for adoption of bylaws to regulate forest protection measures, the respective order and frequency of the implementation of forest pathological studies. The organization of prevention measures by the state management body is not clear as well. All the abovementioned issued need to be addressed and regulated through bylaws.

Forest pathological studies shall be carried out for the purpose of clarification of natural development and spread of pests and diseases, development and implementation of plans on efficient measures for harmfulness prevention. Measures on the prevention of the harmfulness of forest pests and diseases shall be carried out by centralized order by the specialized subdivisions functioning in the structure of the authorized state body or by other specialized organizations licensed by the authorized state body. Sanitary cuttings shall be carried out for the improvement of sanitary condition of the forests, elimination or prevention of further spread of the sources of pests and diseases. They shall be carried out according to this Code and the rules on the implementation of forest maintenance cuttings.

5. Forest Preservation Issues and Reducing the risk of forest fires as a result of climate change.

1. According to Forest Code Forest owners, persons running forest economy and forest users are be obliged to guard forests against fires, unauthorized occupation, illegal loggings, grazing, pollution, activities causing damage to forest biodiversity and other violations of forest legislation.

The crucial targets of forest preservation are fire control and fire prevention measures. According to official data, forest fire cases were registered on 398.8 ha areas during 2001-2010, including 316.9 ha in Southern Armenia. The area impacted by forest fires has increased in 2011 reaching 472 ha.

The Law of the Republic of Armenia on Fire Security (2001) is the legal document regulating relations of the State bodies and local self-governing bodies of the Republic of Armenia, organizations, and citizens in fire security-ensuring sphere. However it needs serious adjustments related to the new provisions of the Forest Code (2005).

Extreme risk of fire - when a longtime hot weather and heat occur, the average air temperature is higher than 20° and the relative humidity is lower than 40%.

High risk of fire - in places where average weather occurs for a long time, sometimes accompanied by week precipitation and the relative humidity is 40-60%.

Low risk of fire - when rains are frequent and the forest canopy is humid.

In the forest management plans of the forest areas in focus have been classified into four fire risk classes, those are processed with computer software and thematic maps are prepared, where the fire risk class has been determined by whole squares, which explains the relatively low level of indicator for fire risk, although areas of high fire risk cover significant areas in individual squares, where juniper stands prevailed and have been damaged seriously by fires.

The forecasted climate change, higher temperatures and further drying of the climate, would create more favorable conditions for fires to break out. The reduction of the risk of wildfires in forests will be based on warning measures and acquisition of firefighting constructions and equipment.

It is important to conduct warning measures through local TV stations and mass media coverage, meetings in near forest communities, putting up posters and warning signs in forests, creating firefighting squads on a voluntary basis in near forest communities, as well as installation of recreational and smoking areas. In the mentioned warning measures, creation of firefighting squads on

a voluntary basis in near forest communities is especially important, which will become possible through close cooperation with communities.

Near forest communities should have 2-3 off-roaders, groups should be created on a voluntary basis, logistical issues should be resolved (acquisition of fuel and relevant tools and equipment, contact information of group leaders, etc.), and the groups should mobilize and participate in the activities for extinguishing fires at first notice.

Acquisition of horses is especially important for extinguishing fires in forest areas which do not have roads.

6. Activities for reducing forest fragmentation and ecological rehabilitation

The forest management plans of forest areas in the 10 years of their implementation envisage forest regeneration measures on non-forested areas and degraded forests through plantation of forest cultures support to the natural regeneration.

Our studies revealed that there are no fragmented forest areas resulting from human activity, but small fragmented areas exist in burnt forests and from such areas the following activities are proposed for regeneration:

- in forest areas with one species, it is proposed to conduct regeneration basically with the same species, for example in oak stands with oak and in juniper stands with juniper species, where natural seed generation does not occur.
- in forest areas with mixed species, it is recommended to select the composition of mixed species, giving preference to species which are better adapted to the local natural climatic conditions and have higher growth rate indicators.

In the complex of measures for forest regeneration in burnt forests, it is proposed to plan the removal of burnt and dry trees, and provide care and maintenance to burnt trees which are regenerating through stub-shootings. Special attention should be paid to foreign station and land preparation, as well as the selection of plantation schemes and implementation of agro-technical measures.

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SUSTAINABLE FOREST MANAGEMENT AND LANDSCAPES IN THE HYRCANIAN FORESTS OF IRAN

Seyed Mohamamd Hosseini[40]

Abstract

The total forestlands of Iran are 12 million hectares which 1.8 millions hectares are located in north of Iran known as the Hyrcanian Forests. These forests are completely natural broadleaved forests and are suited near the Caspian Sea. These forests have uneven topography with steep terrains that many regions have slope more than 100%. Scientific forestry management plans have been started nearly 40 years ago with sustainability aspects. As landscapes of these forestlands are very important, the Iranian Forestry Management Board has been decided to manage theses forests based on the closed to nature management system since 20 years ago. By new decision making systems, nearly 20% of these forests are managing as non- commercial forests and harvesting operations are prohibited in order to protecting of these landscapes. Meanwhile, during first last decade, the selection systems have been increased about 80% versus second last decade.

Management and sustainability of changing landscapes of the Hyrcanian Forests of Iran in details during last two decades will be discussed in this paper.

Keywords: Landscapes, Sustainable forest management, and Decision making

1. Introduction

Iran covers a land area of 1.64 million km$^{2.}$ It is located in the southern part of the temperate zone between 25° 00′ up to 47° 39′ north and 44° 02′ up to 63° 20′ east and is bordered by Turkmenistan, the Caspian Sea, Azerbaijan and, Armenia in the north, Afghanistan and Pakistan in the east, Iraq and Turkey in the west, Persian Gulf and the Sea of Oman in the south.

The average altitude is over 1200 m with the the lowest point with an altitude of 56 m in Chalehloot and the highest point with an altitude of 5610 m in Damavand in the Alborz mountains respectively.

Iran is divided into 5 major climatic zones and the temperature ranges from -20C° to greater than 50 C° with maximum precipitation reaching approximately 2000 mm in the north falling to a minimum precipitation of less than 100 mm in the central region of the country (Mousavi, 2005). The variable climatic conditions in Iran have led to a diversity of plant species occurring as well as valuable forest and range ecosystems and biosphere reserves. Iran hosts 8200 plant species of which 1720 is native ones (Amiraslani 2005). About 69 percent of Iran flora, i.e. 5600 plant species have been scattered in deserts (Bahari, 2005). The natural and geography conditions of the country has caused five biomes to be formed including *Hircanian, Zagros, Arasbaran, Iran_Tourani* and *Khalij-Omani* which are different from each other on the basis of vegetation cover (Fig. 1). According to above mentioned definition, Iran's natural forest area is estimated about 14 million hectares which forest per capita is 0.2 ha as compared with the global standard of 0.8 ha (Table 1). Iran's forests are divided into two areas including the Caspian forests (Hyrcanian Forests) in the north and dry and semi-dry forests in the west (Zagross Forests).

2. Hyrcanian Forests

These forests are located in the northern part of Iran, known as the Caspian Forests or Hyrcanian Forests; belong to the end of the third geological era and also known as the oldest forests in the world. The area of these forests is about 1,847,886 ha which 940826 ha are closed forests, 593,927 ha semi-closed forests with 25-50 percent canopy cover and 313,133 ha are open forests with 5-25 percent canopy cover. The commercial harvesting operations are carried out only in these forests

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which is nearly one million m^3 per year. These forests form a rather narrow green belt bordering the northern part of the Alborz Mountains and extend from Astara in the west of Gilan Province to Giledarreh in the east of Golestan province, and are about 1000 kilometers in length and 20 to 70 kilometers in width (. The Hyrcanian Forests are extended at the altitude of a maximum of 2800 meters from sea level. Fertile soil, proportionate precipitation and high humidity have created a varied collection of plants in this region, including about 80 species of trees- mainly deciduous species- as well as 4 species of conifers. Some of the most important trees are: *Fagus orientalis, Acer insigne, Acer cappadocicum, Ulmus glabra, Fraxinus excelsior, Tilia begonifolia, Cerasus avium, Quercus castaneifolia, Zelkova carpinifolia, Alnus subcordata, Parrotia persica and Carpinus betulus*.

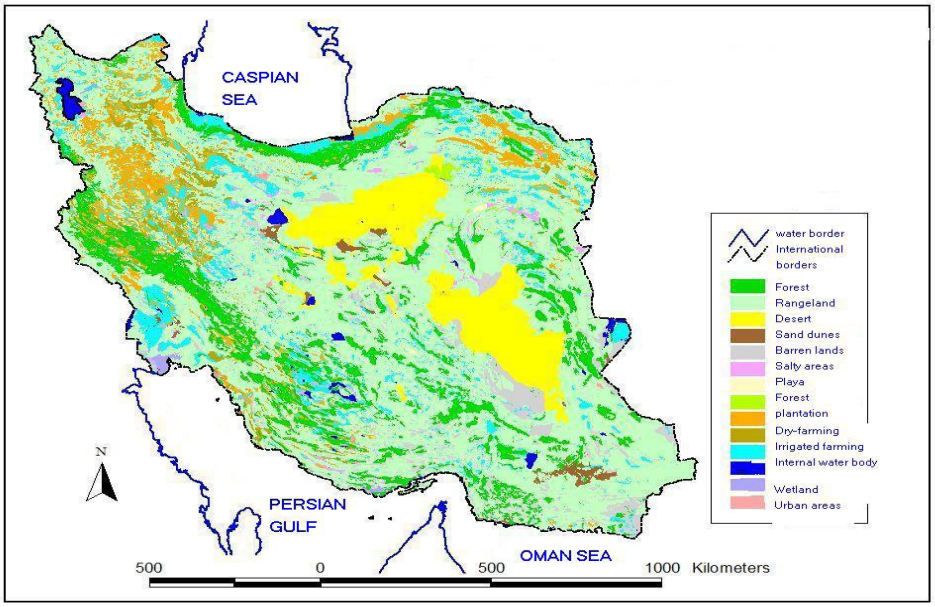

Figure 1: Land use in Iran

Table 1: Forest cover in Iran (hectares)

Forest types	Dry and Semi-dry	Caspian(Hyrcanian)	Total	Persentage
Closed forests	755,777	940,826	1,696,603	12
Semi-closed forests	2,806,846	593,927	3,400,733	23.9
Open forests	7,842,183	313,133	8,155,316	57.4
Manggrove forests	30,400	0	30,400	.2
Planted forests	919,468	0	919,468	6.5
Total	12,354,673	1,847,886	1,420,255	100

3. Forest management

About 50 years ago, all forest and rangelands in Iran were given to government. For this reason, there are not private forestlands in Iran. The scientific forestry planning started nearly 40 years ago with introducing of shelterwood and selection methods. This new managing system, distributed to whole forest regions nearly 20 years. The new conception of natural resource management decision making started ten years ago. The main objectives of this project are as follows:

- forestry management based on sustainable development;
- joining of rural families to forestry activities, conservation and harvesting operations;
- attending to all forest potential sources instead of timber products only.

3-1. Silvicultural system

Two main silvicultural systems which where introduced to the Hyrcanian Forests of Iran are the shelterwood and selection systems. Both of them emphasis on natural regeneration, while the shelterwood system is trying to generate even-aged stands and the selection system is trying to create uneven aged stands.

By the new conception of forestry management decision making, the selection system coveres nearly 80 percentages of forestlands while it was only 20 percentages before (Fig. 2). One of the main reasons of this change is finding a sylvicultural system which is familiar to natural conservation.

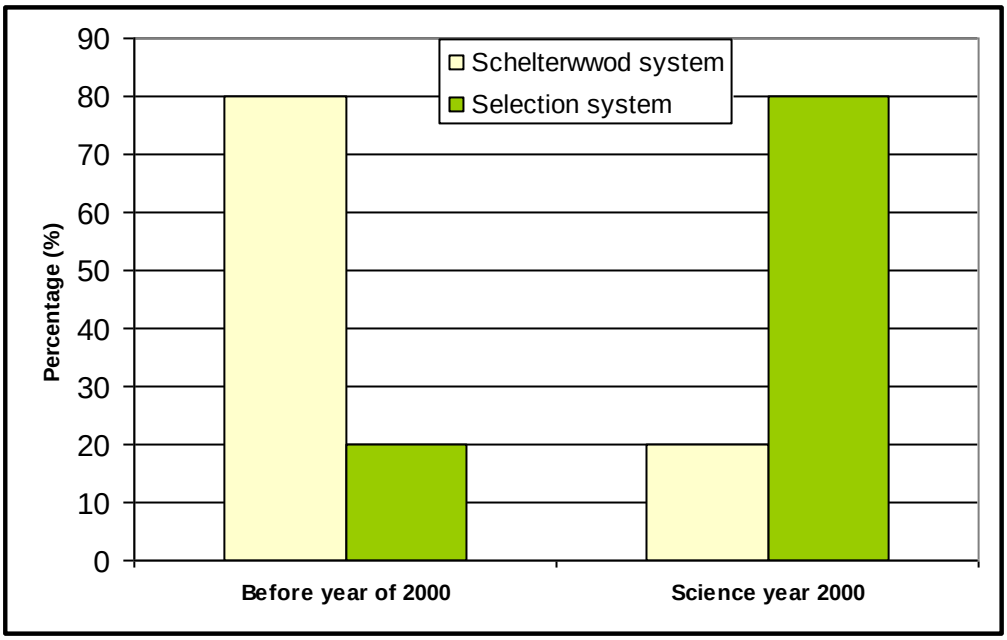

Figure 2. Sylviculur systems changes in the Hyrcanian Forests of Iran

3-2. Harvesting operations

The harvesting operations in theses forestlands are divided into two sections: non-mechanized logging system and mechanized logging system. Before the new conception of forestry management nearly 70 percentage of harvesting operations were carried out as non-mechanized system. In this case, after cutting, felling and delimbing, logs are cut to saw log, quadrangular pieces and fire wood. All of these products were extracted by animals like horses, donkey and mules. By the new forest decision making systems, total timber products in these forestlands in have been reduced science 10 years ago (Fig.3).

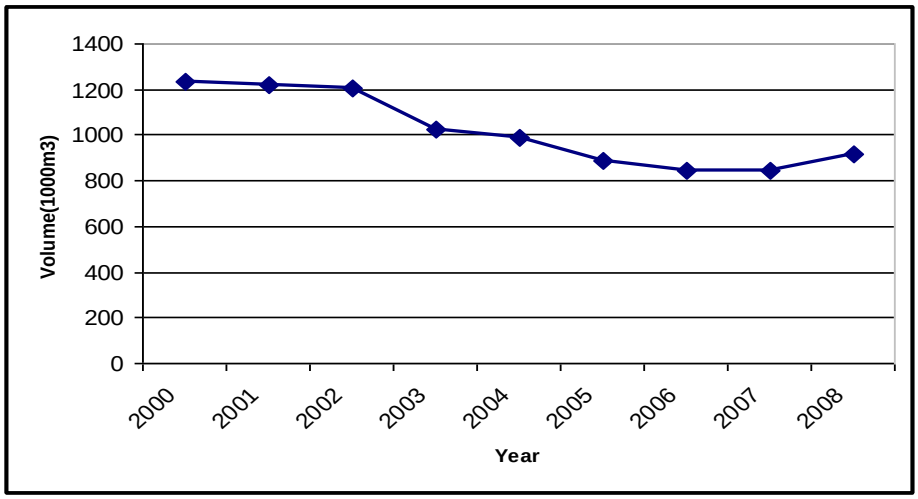

Figure 3: Harvested volumes in the Hyrcanian Forests of Iran

3-3. Socio-economic situation

More than one million people are living in these forest areas that are distributed in small villages. The main job of them is animal husbandry and their cattle are grazing in these forestlands. This is very harmful for the future forest stands because of natural regeneration will be damaged. For many reasons the Iranian Forestry and Range Management Board decided to move all cattlemen to out of forest zones and settled them down in a new complex. In return, by the new law, state and private forestry companies have to employ rural people who are living into or near forestlands in their companies for all forestry activities.

4. Conclusion

Sustainable forest management in the Hyrcanian Forests of Iran started nearly 10 years ago. In new decision making of forestry management, it is purposed to not only the quality of timber products were developed, but rural families can joint to all forestry activities. Some of them just are working on natural landscape conservation activities as forest conservators. At the moment, it is possible to say that the landscape of the Hyrcanian Forests have been developed comparing with last decade.

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ЦЕННОСТЬ ЛЕСНОГО КОМПЛЕКСА ОХРАНЯЕМЫХ ПРИРОДНЫХ ТЕРРИТОРИЙ БЕЛАРУСИ ДЛЯ РАЗВИТИЯ МЕЖДУНАРОДНОГО СОТРУДНИЧЕСТВА

ВАЛЕРИЙ ИВКОВИЧ[41]

Abstract

The analysis of the most important areas of international cooperation of protected areas in Belarus in terms of conservation and management of forest ecosystems with minimal human intervention is presented.

Основу охраняемого лесного комплекса Республики Беларусь составляют территории с наиболее высоким статусом охраны, которые представляют один заповедник: Березинский биосферный и 4 национальных парка: Беловежская пуща, Припятский, Браславские озера и Нарочанский.

Общая площадь Березинского заповедника и национальных парков 480,9 тыс. га или 2,3% территории Беларуси. Леса занимают более 70% площади указанных особо охраняемых природных территорий (ООПТ). Наибольшая их доля в Березинском заповеднике и национальных парках – «Беловежская пуща» и «Припятский».

Согласно природоохранному законодательству значительная доля лесов ООПТ находится в режиме строгой охраны и используется по следующим основным направлениям:

- благодаря значительным запасам мертвой древесины и множеству деревьев-ветеранов леса служат идеальным местом сохранения биологического разнообразия;
- благодаря длительному режиму охраны и разнообразию экологических условий они являются идеальным местом сохранения множества видов растений и животных, занесенных в Красную книгу республики Беларусь;
- в качестве уникальной природной лаборатории, предназначенной для проведения наблюдений за ходом естественных процессов и явлений в нетронутой человеком окружающей среде;
- в качестве объектов для развития экологического просвещения и познавательного туризма на основе посещения экологических информационно-познавательных маршрутов и троп;
- в качестве объекта проведения комплексного мониторинга лесных экосистем в рамках национальной системы мониторинга окружающей среды;
- в качестве учебной природной аудитории для проведения полевых практик студентов и школьников;
- в качестве мест для организации и проведения фотоохоты.
- в качестве хранителя древнейших лесных промыслов.

В международном плане наиболее титулованным среди ООПТ является национальный парк «Беловежская пуща»:

- объект Всемирного природного наследия человечества;
- биосферный резерват программы «Человек и биосфера» ЮНЕСКО;
- обладатель Диплома Совета Европы.Высокий международный статус имеет и Березинский биосферный заповедник:
- биосферный резерват программы «Человек и биосфера» ЮНЕСКО;
- обладатель Диплома Совета Европы;
- территория Рамсарских угодий.

Все национальные парки и Березинский заповедник относятся к международным ботаническим и орнитологическим территориям и запланированы для включения в

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международную «Изумрудную сеть» с целью сохранения редких видов растений, животных и местообитаний Европы.

Наибольшую ценность лесного комплекса ООПТ представляют единственные в Европе высоковозрастные равнинные леса Беловежской пущи, девственные болотные леса Березинского заповедника, уникальные пойменные дубравы национального парка «Припятский», озерно-лесной комплекс национальных парков «Нарочанский» и «Браславские озера».

Руководствуясь приоритетами устойчивого использования охраняемых лесных экосистем, при минимальном вмешательстве человека, важнейшими направлениями международного сотрудничества являются:

в национальном парке «Беловежская пуща»:

- реализация договора о проведении совместных научных исследований лесных экосистем с Беловежским национальным парком (Польша);
- организация полевой Летней школы для студентов лесохозяйственного профиля трех стран: Беларуси, Польши и Германии;
- организация экологических туров по наблюдению диких животных в их естественной среде обитания (Голландия, Германия);

в Березинском биосферном заповеднике:

- выполнение договора о сотрудничестве между региональным природным парком Северные Вогезы (Франция) и Кампиноским национальным парком (Польша);
- внедрение приемов ведения экологически ориентированного лесного хозяйства с международной ассоциацией лесоводов Европы – Просильва;
- проведение полевых практик студентов Университета Грайсвальда (Германия) и Варшавского Университета (Польша);
- организация обучения специалистов природоохранных учреждений в рамках международного договора с Россией, Украиной и Казахстаном;
- организация международных экологических туров по фотографированию диких животных в их естественной среде обитания (Чехия, Франция, Украина. Германия);

в национальном парке «Припятский»:

- организация и проведение фотосафари;
- проведение совместных научных исследований в пойме Припяти и пойменных дубрав с учеными Института RIZA (Голландия)
- организация экологических туров по наблюдению диких животных в их естественной среде обитания (Голландия, Германия, Великобритания)
- создание трансграничного резервата в сотрудничестве с Украиной;

в национальных парках «Нарочанский» и «Браславские озера»:

- проведение совместных научных исследований в трансграничном регионе с Литвой и Латвией;
- организация экологических туров по наблюдению диких животных в их естественной среде обитания (Германия, Голландия).

Повышение уровня охраны и рационального использования лесного комплекса Березинского заповедника и национальных парков будет способствовать дальнейшему росту международного престижа и авторитета нашей страны в лесохозяйственной и природоохранной сферах.

LEGAL ASPECTS ON THE REGULATION OF FOREST AND FOREST LAND VALUE DETERMINATION IN LITHUANIA

M. KAVALIAUSKAS[42], G. ČINGA[43]

Abstract

Forest value determination is an important issue in forestry for several reasons: purchase, sale, identifying the priorities of growing, building up protected areas, evaluation of the loss for the damage that was made for the environment, introducing taxes, calculation the share of forest value in national asset and etc. This paper addresses the legal documents that regulate the value calculation of forest and forest land in Lithuania. Herewith, the review of forest value determination studies in Lithuania has been done.

It was identified that various legal documents were regulating the determination of forest and forest land value (FFLV) in Lithuania. Furthermore, these documents were introduced by several governmental institutions different by legislative power. Distinct methodologies to determine FFLV were applied. The review of the studies on determination of FFLV showed that there was a lack of research on this issue. The most common problem was the value determination of non-timber forest goods and services that was not even under regulation.

The results of the study showed that the general determination of forest value was the value of standing forest approved by the Ministry of Environment. The most common identification of forest land value was the base price. The review of the studies that was carried out to estimate the value of FFLV indicated the inconsistencies. Therefore, the average value of the same forest stand was from 1350 to 12600 EUR/ha.

In conclusion, the recommendations to unify the legal system regulating FFLV determination were suggested. Additionally, it was offered that the more complex methods have to be applied to improve the determination of FFLV.

Keywords: legislation, forest, forest land, evaluation, value

Introduction

The determination of forest (forest stands) and forest land value (FFLV) is a complicated and essential task. Many reasons are known (Mizaras, 2011) for the FFLV determination and they are as follows: clarifying the market price for the purchase or sale, identifying the priorities of growing, building up protected areas, evaluation of loss for the damage that was made for environment, introducing taxes, calculation of the share of forest value in national asset and etc. Multifunctional FFLV determination is the most recent object of researches.

During the period from 1918 to 1939 forest land value was set in forest management plan in Lithuania. The costs of transformation of forest purpose land to agricultural purpose land was the technique of forest land value estimating. Whereas, the forest stands were

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evaluated by the base price. During the Soviet times the system of indexation was adopted to determine FFLV (Deltuvas et. al., 2011). It is already more than twenty years after the state forestry entered into the market economy in Lithuania; therefore, the significant global and local changes affected state forestry since 1990 (Kavaliauskas, Činga, 2011). According to the adaptation of market economy various methods were legitimized to evaluate FFLV for administrative purposes.

The real price of goods that is set by the demand and supply was the fundamental idea of market economy. The real market price is the sum of asset that could be transferred to another sort of asset (Profit Tax Act, 2010). However, various economic problems concerning forestry did not satisfy the real market price conception at any time in Lithuania. Numerous acts were introduced that regulated the determination of FFLV.

In 2009 by the initiate of the Government of the Republic of Lithuania the reform concerning state owned enterprises efficiency started. The main idea of this reform was to increase the return on equity (ROE) (Deputy if Prime Minister…, 2009). State forest enterprises (SFE) that in reference to Lithuanian Statistical Yearbook of Forestry (2011) managed 49.6 % of forest land in Lithuania were involved in the reform as well. The index of ROE was the main criterion for the efficiency evaluation of state owned enterprises. FFLV was set as the value of SFE asset in the calculation of ROE. Therefore, as it was no unanimously accepted methodologies the problem of FFLV determination was identified. The FFLV was put as the directive (0.84-0.96 billion Euro). The challenge of calculation of total amount regarding to FFLV aroused. Consequently, the amount of FFLV was the key matter for the efficiency estimation as well as for the comparison to other state owned enterprises.

The review of the investigations concerning FFLV determination revealed that there were some estimations of the total forest value in Lithuania made. In reference to standing forest value approved by the Ministry of Environment Mizaras (2011) calculated total FFLV that was 3.2 billion EUR in Lithuania. Therefore, it was identified that the average of FFLV was 1865 EUR/ha. Forest (2011) stated that standing forest value was used world wide. He estimated the average of standing forest value in Europe that was 2150 EUR/ha, therefore, the average of standing forest value in Lithuania was similar to Europe's.

In respect to Lithuanian Statistical Yearbook (2010) total state FFLV was 2.4 billion EUR. The data of FFLV for Lithuanian Statistical Yearbook was obtained from cadastre.

The investigation of state FFLV regarding to economic purpose forest was ordered by the Directorate General of State Forests in 2011. The state FFLV was calculated by M. Faustmann formula that was the most widely applied in forest evaluation. The research of state FFLV concerning economic purpose forest revealed that value depended on the rate of discount (table 1) (Deltuvas et. al., 2011).

Table 1. State FFLV of economic purpose forest

Discount rate %	**1**	**2**	**3**	**6,25**	**6,5**
FFLV in billion EUR	8.9	4.9	3.6	1.7	1.5
Average of FFLV EUR/ha	9889	5608	4154	2258	1824

Source: Deltuvas et. al. (2011)

In general, all determinations concerning FFLV were based on the methods provided in legal acts, except Faustmann formula. It is obvious that different evaluation methods gave different FFLV. Therefore, the analysis of FFLV estimation by various methods that was provided in legal acts is on demand. The reason of FFLV differences has to be revealed and problem solving approaches offered. The system of legal acts regulating FFLV has to be obtained for the comparison, also, the causal connections faced.

It has to be highlighted that studies (Mizaras, 2006) of non- timber value estimation indicated approximately 60% higher value than forest supply of timber function. Therefore, legal aspects of non-timber functions value have to be realized as well. Consequently, the legal documents which were in power have to be reviewed for the detection of legal regulation concerning monetary evaluation of multifunctional forest.

The aim of this study was to review the recent legal documents regarding to determination of forest and forest land value in Lithuania. The following three tasks were formulated to accomplish the defined aim:

1) to prepare the digest of legal documents that regulated determination of forest and forest land value;

2) to analyse the methods introduced in legal acts that were used to determine forest and forest land value;

3) to determine and to compare the value according to the introduced methods.

Methods and materials

The following conventional methods were used in this study: empirical analysis of documents, theoretical comparison, and systematic analysis.

The relevant legal documents were searched for in official webpage (http//www.lrs.lt) of Parliament of the Republic of Lithuania. The system of legal acts concerning FFLV and non- timber forest value estimation was constructed by logical structure as well as by the power of legal documents. The detailed theoretical analysis of the methods concerning determination of FFLV and non- timber forest value was made.

The representative forest stand was selected to determine the value according to the methodologies introduced. The following attributes of the representative forest stand were identified:

The dominant pure and mature forest stands;

The average of the area in respect to identified stands;

The average of growing stock per ha;

Site index and stocking level;

The average of height;

The units of trees per ha;

The average of stem volume m?

The average of diameter of stem cm;

The structure of wood production %;

Manual of forest taxator (1983), Forest Yield Models and Tables in Lithuania prepared by Kulie?is (1993), also Lithuanian Statistical Yearbook of Forestry (2011) were used to obtain an information on forest stand attributes. The timber prices were determined by the information provided in legal acts. Total value of timber was estimated proportionally to the structure of wood production.

The real market price of representative forest stand was determined by use of questionnaires. Ten private forest companies were asked to give their best prices according to the representative forest stand that was proposed.

Results

The review of legal documents that regulate determination of FFLV revealed a complicated system (table 2). State institutions that differ by legislative power introduced various legal acts regulating FFLV determination. Three different methods of FFLV determination were identified during the analysis of legal acts.

Firstly, it was found out that standing forest value was the most common FFLV determination method in practice. The value of forest stands was determined by the base price approved by the Ministry of Environment. The base price was changed by indexes also approved by Ministry of Environment. The indexes were determined in accordance with the value of timber in the market. Standing forest value was used to determine the lowest price of state forest, mostly for auctions. The forest land was not included in standing forest value determination.

After that, the Government of the Republic of Lithuania introduced the Order Concerning Evaluation of Land that regulated determination of FFLV. The Order Concerning Evaluation of Land was introduced mainly for the purpose of the restitution process. The Committee of Evaluation of Property that is Obligatory to Register Under the Ministry of Finance passed a pronouncement to determine the average value of market concerning personal and real estate. The methodology of FFLV determination was provided in this legal act as well. The determination of inheritance, but also the estimation of state forest rent price was the main purpose of this legal document.

Finally, the Act of Cadaster of Real Estate regulated the methodology of FFLV estimation. The data collection for real estate cadaster was the purpose regarding to the Act of Cadaster of Real Estate. Forest cadaster was incorporated into the Lithuanian cadaster system, therefore, the provided information concerning FFLV was under responsibility of forest cadaster manager.

Unfortunately, there was found no any legal act that regulated evaluation of non-timber forest goods and services. The possibility to involve the value of non-timber forest goods was defined in IAS 41 standard; however, Lithuania has not adopted it yet. The emphasis must be put on Lithuanian business standards that had not provided such possibility.

The methodology that was introduced for the calculation of environmental detriment made by illegal act in respect to FFLV was included in this study. The regulation of the Government of the Republic of Lithuania passed the rules regarding to values of environmental detriment. Additionally, it has to be highlighted that the compensation rules, also the penalty amount was regulated by the Code on Administrative Offences.

The detailed characteristics of representative forest stands were identified by the provided description in the section of methods and materials of this study. Data of Lithuanian Statistical Yearbook of Forestry (2011) revealed that forest stands of Scots Pine (*pinus sylvestris*) was dominant in Lithuania. The composition of area regarding these stands was 35.3 % in total forest land. Consequently, pure pine stands were selected as the representative in this study. According to the data of Lithuanian Statistical Yearbook of Forestry (2011), the composition of exploitable forests (the 4th forest group) was 71 % in total forest area. The dominant pine stands covered 32 % of forest area within the 4th forest group. In reference to the Forest Cadastre 2010 the average area of pure pine stands was 2.3 ha in Lithuania. The mature (allowable cutting age of 101 year) pine stands were chosen to make determination of FFLV. The average of growing stock of pine was 375 m?/ha (total 863 m?) in the 4th forest group. It was clarified that the 2nd site index, as well as stocking level of 0.8 were the most common within pine stands. The typical site type of pine stands was *La*, where *L* provided that soil was of normal meteorological humidity and index *a* – provided very infertile soil.

Table 2. The digest of legal documents that regulates determination of forest and forest land value in Lithuania

Legislative institution	**Power of the act**	**Title of the act**	**Method of FFLV determination**	**Short description of legal act**
Parliament of the Republic of Lithuania	Act	Act of Cadaster of Real Estate	Link to The Regulation of Cadaster of Real Estate of the Republic of Lithuania	The data of cadaster included detailed information about real estate. This data contained the information of FFLV. The updated forest land value has to be set in cadaster in accordance with the order introduced by the Government.
Government of the Republic of Lithuania	Regulation	The Regulation of Cadaster of Real Estate of the Republic of Lithuania	Link to the Evaluation Order of Land and link to The Rules of Land Value Drawing	*The Regulation of Cadaster of Real Estate declared that the value of land was determined in accordance with the Methodic of land value determination approved by the Government. The average market price was determined in accordance with value map of land approved by the Order of Minister of Agriculture. The average market price of FFLV was determined in accordance with the manager of Lithuanian forest cadaster. Lithuanian forest cadaster manager worked under the Approvement of Regulation and Foundation Regarding to State Cadastre of Forest of the Republic of Lithuania. FFLVwas determined by introduced methodics of The Committee of Evaluation Property that is Obligatory to Register Under the Ministry of Finance also by Order of Land Evaluation.*
Government of the Republic of Lithuania	Regulation	Concerning the Order of Land Evaluation	The value of forest land was determined by the base price. The value used to change by the indexes	The methodic of land evaluation was regulated by this act. The regulation of methodic of forest and forest land evaluation was introduced.
Ministry of Agriculture	Rules	Concerning the Approvement of Rules of Land Value Drawing	Link to the following acts: 1. The Act of the Republic of Lithuania of Tax on Land 2. Concerning Approvement of Documents that Regulate the Grand Evaluation of Land 3. Concerning the Determination of Average Market Price of Real and Personal Estate	In accordance with the Approval of Rules of Land Value Drawing the land evaluation documents were prepared for the grand evaluation. The grand evaluation was made in accordance with the Fundamental Act of the Republic of Lithuania Regarding to Evaluation of Estate and Business. If the taxes were not introduced for the land that was under evaluation The Pronouncement of Committee of Evaluation Property that is Obligatory to Register Approved Ministry of Finance was applied.
Parliament of the Republic of Lithuania	Act	Land Tax Act of the Republic of Lithuania	Link to the Determination of Average Market Price of Real and Personal Estate	In the Land Tax Act it was pointed out that the grand evaluation was not imposed for the untaxed land (id est forest land). If the taxes were not introduced for the land that was under evaluation the Pronouncement of Committee of Evaluation Property that is Obligatory to Register Approved by Ministry of Finance was applied.
National Land Service Under the Ministry of Agriculture of the Republic of Lithuania	Order	Concerning Approvement of Documents that Regulate the Grand Evaluation of Land	-	In accordance to this order grand evaluation of land also land value drawing is regulated.
The Committee of Evaluation Property that is Obligatory to Register Under the Ministry of Finance	Pronouncement	Concerning the Determination of Average Market Price of Real and Personal Estate	The value of forest land (excluding forest stands) was determined by the maps of land value. The value of forest stands was determined by the base price. The value used to changed by the indexes.	The average of market price of real and personal estate was determined in accordance with the Pronouncement of The Committee of Evaluation Property that is Obligatory to Register Approved by the Ministry of Finance also by The Regulation of Cadaster of Real Estate of the Republic of Lithuania. After consideration of various regulations the committee determined the average value of market in respect to real and personal estate. The document provided the methodic of FFLV estimation.

Continuation of the second table

Legislative Institution	Power of the act	Title of the act	Method of FFLV Determination	Short description of legal act
Ministry of Environment	Order	Concerning the Value of Standing Forest	The value of forest stands was determined by the base price. Link to the Approvement of Indexes of Price of State Standing Forest.	The Order Concerning the Value of Standing Forest provided the evaluation methodic of standing forest. This order determined the lowest market value of state standing forest. Such forest price could be set for auction or could be used for the agreements for special state demands (f.i. for social security).
Ministry of Environment	Order	Concerning the Approvement of Indexes of Price of State Standing Forest	The value of forest stands was determined by indexes.	The order regulated the value of standing forest. The value of standing forest was changed by indexes in the context of flexible market.
Parliament of the Republic of Lithuania	Act	Forest Act	To determine the value of forest the standing forest value was used. The value of forest land was determined by market price.	Forest Act regulated the evaluation of FFLV regarding to forest land purpose changing.
Parliament of the Republic of Lithuania	Act	Forest Act	Link to the Environmental Protection Act. Link to the Regulation Concerning Enactment Regarding to Order that Regulates the Compensation Rules of Environmental Detriment Caused by Illegal act of Natural Persons and Legal Entities Also Regulates the Compensation Rules of Detriment in Respect to Forest, Property or Interests of Forest Managers, Forest Owners and Users Caused by Illegal Act of Natural Persons and Legal Entities.	Forest Act regulated the evaluation of FFLV regarding to compensation of environmental detriment caused by a criminal deed in forest.
Government of the Republic of Lithuania	Regulation	The Regulation Concerning Enactment Regarding to Order that Regulates the Compensation Rules of Environmental Detriment Caused by Illegal act of Natural Persons and Legal Entities, Also Regulates the Compensation Rules of Detriment in Respect to Forest, Property or Interests of Forest Managers, Forest Owners and Users Caused by Illegal Act of Natural Persons and Legal Entities.	The value of forest stands was determined by the base price. The value was changed by indexes.	This act regulated the rules of compensation regarding to environment and forest detriment caused by illegal act of natural persons and legal entities.

It was estimated (Forest Yield Models and Tables in Lithuania, 1993) that the average height of described pine stand was 27 meters; consequently, there were 313 trees per hectare. Therefore, the average of one stem volume was 1.2 m?. Using Manual of forest taxator (1983) it was determined that the average stem diameter was 36 cm. The production structure of pine timber of such characteristics was provided in table No. 3.

Table 3. The production structure of pine timber

Large –scale industrial wood	**Middle – scale industrial wood**	**Small –scale industrial wood**	**Fuelwood**
70 %	25 %	3 %	2 %

Source: *Manual of forest taxator (1983)*

Standing forest value

The price of pine timber and the indexation of timber price were obtained from the Order of Ministry of Environment Concerning the Value of Standing Forest as well as in Approvement of Indexes of Value of State Standing Forest (table 4).

Table 4. The price of pine timber and the indexes regarding to standing forest

Large–scale industrial wood	**Middle–scale industrial wood**	**Small–scale industrial wood**	**Fuelwood**
EUR/m?			
33.9	23.7	4.9	1.5
Indexes			
1.01	1.12	2.89	3.00
Total price of industrial wood EUR/m?			
34.24	26.54	14.16	4.5

Total volume of growing stock of representative stand was 863 m?. Consequently, the amount of large–scale industrial wood was 604.1 m?, middle–scale industrial wood – 215.8 m?, small –scale industrial wood – 25.9 m? and the amount of fuelwood was 17,3 m?. The estimation indicated that the total value of pine stand was 26856.31 EUR. It has to be highlighted that the method of standing forest value determination did not provide evaluation of forest land.

FFLV determination by the Average Market Price of Real and Personal Estate

The base price for all forest stands was 231.70 EUR. The index for 101-110 age pine stands was 18 and the index for stocking level of 0.8 was 1.2. The base price was multiplied by the indexes to calculate the value of forest stand. Therefore, the value of representative pine stand was 5004.63 EUR. The method of land value estimation in this regulation was the same as in the regulation of Evaluation Order of Land.

FFLV determination by Order of Land Evaluation

The value of 36 cm diametre pine timber was provided as 3.33 EUR in the Order of Land Evaluation. It was calculated that the total value of pine stand was (863 m?*3.33EUR) 2874.33 EUR. The base price of forest land of *La* site type was 81.38 EUR.

FFLV of illegal fellings

To put the case that clear cuttings were made in representative pine stand against the law. The amount of compensation for environmental detriment and the penalty of illegal act were calculated to determine the value of the pine stand. The Government Regulation Concerning Compensation for Environmental Detriment provided 11.58 EUR/m? amend. Also the index of 1.3 for matured forest stands was applied. Therefore, the amount of compensation was 15.06 EUR/m?. It was estimated that the total value of compensation

concerning pine stand would have been (863 m?*15.06 EUR) 12996.99 EUR. Additionally, financial penalty for illegal act would be imposed in accordance with the Code of Administrative Offences. It was clarified that if the clear cut was over 500 m? the penalty from 4300 to 8700 EUR would have been levied. The average penalty fee (6500 EUR) was included in later calculations. Finally, the total pine stand value of illegal utilization was estimated and it made (12996.99 EUR + 6500 EUR) 19497 EUR.

Market value

Ten private companies that purchase forest were questionnaired. These companies were asked to give their best prices for representative pine stand by provided characteristics, additionally; the total value that included forest land was inquired to offer. The results of the questionnaire provided quite a wide range (from ~11600 to ~29000 EUR) of forest stand value that also included value of forest land. The share of forest land value in total forest stand value was around 10 %. In summary it could be stated that the market price of representative pine stand was the best offer. Therefore, it was determined that the total market value of represantative pine stand was 29000 EUR and the data of questionnaire revealed that forest land value was 2900 EUR within total market value.

Value of non-timber forest goods

Considerable classifications as well as value determination methods of non-timber forest goods and services provided by forest were done (Gregersen, 1991; Helles, Brukas, Tarp and et al., 1999) and the unique, also unified system was still not adopted. In respect to the complicated evaluation of non-timber forest goods and services the data of Mizaras (2011) investigation were used to determine the value of represantatve pine stand. Total annual economic value of Lithuanian forests that was based on standing forest value was determined and composition by percentages provided by Mizaras (2011). It was estimated that the average of annual value of non-timber forest goods and services provided by forests was 124,6 EUR per ha. This annual value had to be capitalized to calculate the real value during the period of considerable time. The traditional formula for capitalization was as follows (Clarks, Fulton, 1993):

$$R=V/p$$

where: R- annual income during the period of considerable time; V – annual income; p – interest rate.

Deltuvas, et al., (2011) proposed to use a 6.25 % value of interest rate p. The total capitalized value of non-timber forest goods and services provided by forest was (124.6 EUR * 2.3 ha/0.0625) 4583.8 EUR. The value composition in percentages and EUR of representative pine stand was introduced in table No. 5.

Table 5. Total value of non-timber forest goods and services provided by forest

Mushrooms	**Berries**	**Herbs**	**Hunting**	**Recreation**	**Carbon sequestration**	**Biodiversity conservation**	**Water and soil protection**	**Total**
The value composition of non-timber forest goods and services provided by forest in % (Source: Mizaras, 2011)								
8.0	2.1	0.3	5.9	20.5	30.5	3.3	29.3	100
Annual value composition of non-timber forest goods and services in EUR								
10.0	2.6	0.4	7.4	25.5	38.0	4.1	36.5	124.5
Total value composition of non-timber forest goods and services provided by forest in EUR								
367.0	96.9	13.8	270.1	941.7	1398.7	152.3	1343.3	4583. 8

The data in table No 5 indicated high share of carbon sequestration (30.5%) and water and soil protection (29.3 %) in total value. Also it has to be marked that determination of FFLV by non-timber forest goods and services did not provide land value. The digest of all the determined values that were rounded to hundreds were provided in table No. 6.

Table 6. The digest of determined FFLV

Name of value estimating method	Market value	Standing forest value	Determination of Average Market Price of Real and Personal Estate	Rules of Land Evaluation	Value of illegal cut	Value of non-timber forest goods and services
Total value in EUR	29000 (2900 of it forest land value)	26900	5200 (200 of it forest land value)	3100 (200 of it forest land value)	19500	4600
The purpose of determining value	Purchase and sale in market	Determination of the lowest price of state forest for auction	Inheritance, state forest rent price etc.	Restitution	Amenability regarding to illegal act	Multi value of forest

Distinct FFLV in accordance with the representative pine stand was indicated (table 6). The range of the same evaluated forest stand was from 3100 to 29000 EUR or from 1348 to 12609 EUR per ha. However, it has to be noted that the value of growing stock volume of forest stand was not included in value of non forest goods and services. Order of Land Evaluation indicated the lowest value and that was 3100 EUR. Market value without forest land (26100 EUR) was very similar to standing forest value (26900 EUR).

Discussion

The review of legal documents indicated distinct regulations concerning FFLV determination. Three following formal and/or direct methods of FFLV determination were indicated: standing forest value determination of average market price of real and personal estate and, finally, rules of land evaluation. All these previously mentioned methods were used in various regulations.

In accordance with the representative pine stand the research revealed great differences between calculated values and that was from 2300 EUR to 29000 EUR. Obviously, there was only one representative pine stand counted, nevertheless, it was proved that the value of FFLV was different. Therefore, the clarification of reasons concerning the introduced methods that indicated distinct values of FFLV were the main problem in this study. The distinct purposes of regulations regarding the FFFLV was the reason for estimated values to differ.

The results of this study confirmed that timber prices were lower in private forest than standing forest value per hectare. This because in small private stands many of private forest owners were not interested in silviculture, as well as private forest sector was sensitive to the market prices, especially, in a moment when the prices of timber came down in market.

It was estimated that the Rules of Land Evaluation determined the FFLV very low. This regulation was introduced for the purpose of restitution. Also, this value was used in Cadaster mainly for the evaluation of real estate. In case of expropriation for the purposes of state such value of compensation would be unacceptable for the forest owner. In case of privatization the initial price of forest and forest land was very low in comparison to market with standing forest value.

The low FFLV determined by Determination of Average Market Price of Real and Personal Estate was not so significant in practice. Actually, the official data was not provided regarding to taxation of inheritance and area of state forest rent.

It was interesting that FFLV determined by Legal Act of Environmental Detriment was lower than market or even standing forest value. Consequently, if the forest was cut illegally and the penalty introduced and production realized on the price of market it would still be “profitable”. Therefore, this act has to be taken into consideration to solve such problems. For example, the value of non-forest goods and services could be added in evaluation of environmental detriment.

In summary, it could be stated that the currently complicted system of legal acts concerning the evaluation of FFLV could be simplified. The calculations showed that the value range of the same forest stand (that was evaluated by given methods) was very wide.

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ECONOMIC ASPECTS OF FORESTRY IN THE LAWS ON FORESTS AFTER SECOND WORLD WAR IN SERBIA

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Abstract

Forest, as natural resource, has an important role in the economic development of Serbia. This paper presents an overview of the Laws of Forests from the World War II to nowadays, with special attention paid to review of paragraphs of Laws and innovations that were introduced to each of them. Analyzing the laws, special attention was paid to economic aspects of forestry, respecting the principles of forest policy.
Very important was to determine the role of forestry in the economic development of Serbia, trough the forest laws, which were necessary for the development of the sector and organization within the forestry sector. Each review of the paragraphs of laws is followed by commentary and analysis of the facts relating to economic and social aspects of forestry.

Keywords: Laws of Forests, Economy, Forestry

INTRODUCTION

Values of forests are very hard to be evaluated, but it is certain that many of its characteristics and benefits for the whole society are a common asset. Legislative regulation of the forestry sector need to express the general level of awareness of managerial factors in the state, and hence to protect forests as part of a national natural treasure. Therefore, forestry appears as the subject of complex and voluminous legislation.

This paper presents the Laws of Forests and their paragraphs, with accompanying comments, which reflect an important aspect of forestry presented by its economy component. Also, there was an attempt to be some economy problems, and pertinent legislation was observed in the continuum, from the first to the last observed laws, in order to be clearer insight into the developmental aspects of legislation and the relation with other questions which require legal support (ecology, organization, ownership and etc.).

GENERAL LAW OF FORESTS 13.12.1947

Paragraph 3 - The importance of forests are whole state, republican, provincial, district and local significance.
Paragraph 4 - Improvement and development of forestry, forest economy and wood industry is realized by whole state economy plan.
Paragraph 5 – The state bodies responsible for the forestry and forest management units manage the state forests based on forest plans and studies of the management planning established for the improvement and development of forestry, forest economy and wood industry. Inventory costs borne by the state. Minister of Agriculture and Forestry Federal National Republic of Yugoslavia will prescribe guidelines for the preparation of studies of the management planning.

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Paragraph 6 - In order to improve and the rational using of cooperative and private forests, the state supervises of their exploitation and their cultivation.

Paragraph 24 - The owner of forest land is required to afforest his deforested areas, as all those lands that may be used only if they are under the forest plantation, within the period in the framework of whole state economy plan, determine its decision the competent national body for the forestry.

Paragraph 28 - Defines the competence in supervising and managing of forests and divides them between the Minister of Agriculture and Forestry FPRY, Republic of Ministers of Agriculture and Forestry, the Executive Committee of the provincial and district People's Committee and the Assembly (in ph. 29 to them was assigned, also, the role of forests managers over the forests out of the composition of forest management units).

Paragraph 30 - The main body for management of state forests is a forest management unit (FMU). It is a state economic enterprise, and it is established based of the rules of Basic Law on State economy enterprises.

Paragraph 31 – Forest management unit has a task: raising, cultivation, development and exploitation of forests, melioration of forest lands, construction and restructuring of forest means of transport and timber transportation and industrial machinery, processing of forest products and their distribution in the local supply.

Paragraph 34 - Exploitation of state forests and forests that are under state supervision perform professional forestry enterprises in the framework of whole state economy plan, approved on the basis of the studies of the management planning

Very important is the connection between forestry and wood processing industry in the same unit of state interests, such as integration into a unified system of State action (whole state economy plan) as an operational expression of the economic policy of the State.

Also, it is interesting that the legislator differs "plans" and "the management of forest and elaborate", because they are separately stated. This fact gives rise to a different place and role of both types of documents in the frame of the State economy measures when it is related to forestry.

In addition, this Law in some extent was treated forests in other forms of ownership out of the State, which indicate that the State keeps the right of "control" over their use, leaving the government to trough its acts this term (its scope and content).

This law defines the bodies of management of State forests, and the main is forest management unit. This administrative instance has, primarily an economic function.

What is especially interesting here is that this body takes care about the “the construction and reconstruction of industrial woodworking equipment", which once more emphasizes the connection between the forestry and wood industries. That is also a kind of obligation of Forestry to take care about solving the basic problem of processing (not only a problem of supply of raw material, but affects the wider process of reproduction in the manufacturing industry).

In addition, the forest management unit has a very difficult task and it concerns that scope of exploitation of forestry is determined **only** (noted by N.R. and Lj.K.) based on the approved studies of the management planning. The difficult of this task is reflected in the fact that at that time only for a relatively small part of the forest were created these studies.

Therefore, the laws should be put only what you can truly be fulfilled, because this, despite the good intentions of the legislator, can generate negative consequences.

LAW OF FORESTS FROM 18.02.1950

The novelty, compared to the previous Law, is the content of par. 2 which defines the term forest.

Paragraph 6 - State forestry bodies, forestry enterprises and other State organs and enterprises entrusted with the management of State forests, manage the state forests on the basis of plans and studies of the management planning established for improvement and development of forestry, forest economy and wood industry. Cooperative and private forests will be managed on the basis of studies of the management of forest and lower order with program of cuttings.

Paragraph 34 - To protect forests from over-exploitation and to raise the sawmill - and other wood processing facilities - brought into line with their planning capabilities needed wood supply within the normal yield of forests in which the plant is addressed, the decision on the establishment, extension and renewal of sawmill and other wood processing facilities, shall be taken in accordance with the Forestry Minister and Minister of wood processing.

Paragraph 43 - FMUs and enterprises are obliged, because of agreeing and harmonization of its tasks with the needs of the population, cooperate with the bodies of the county People's Committees and representatives of district councils for forestry those districts whose population gravitates forests under the Forest Estate.

Paragraph 48 - Forests of State of agricultural goods and other state economic enterprises and institutions will be managed by the regulations which are valid for the management and governing by the other State forests. If the administration of these forests has no professional forestry management within the, agricultural goods commercial enterprises or institutions, professional management will make the closest forest body at their cost.

This law regulates the process of cooperative management of forests and forests owned by agricultural goods (par. 6 and 48), whereby the experts in forest management units are appointed as these who will work jobs in the case that these organizations do not have their human resources.

The institutionalization care of forestry for the processing industry in this Law exists in the same form as previous. However, there is added a new paragraph (ph. 34), which is manifested by concern for the forest and strive to bring production and consumption by the establishment, expansion and renovation of sawmill and other wood-industrial facilities by conditional approval of two Ministers (forestry and the wood industry).

Apparently this ensures that no copy processing facilities that can not be supplied in a timber suitably and thus protect the forests of possible over-cutting.

However, in practice it is only formally respected because the agreements were given quite easily and without insight into the actual situation on the ground. Hence, the wood processing facilities sprang up everywhere, however, without any intention of the legislator to prevent it, and the pressure on forests is increasingly growing.

LAW OF FORESTS FROM 17.12.1955

Paragraph 4 - Forests can be public and owned by private individuals.

Paragraph 8 - Private forests are managed by their owners, and cooperative by cooperatives.

Paragraph 9 - Forest management shall be established by long-term plans and the management studies.

Paragraph 27 - Clear cuttings of forests are forbidden (below of this article are defined exceptions of this prohibition).

Paragraph 38 - Defines the forest estate and activities which deals with (among other things, is defined that "... forestry estates can process wood on it's sawmills for their own needs and to make them less services").

Paragraph 39 - Forest estates are self-financing institution operated by a collective management body (in this paragraph is defined the organ who determines boundaries of farms and the way it works).

Paragraph 42 - Forest estates managed forests based on long-term plans, and studies of the management planning and annual surveys of the management plans. Long-term plans are done by the National Assembly of People's Republic of Serbia. Studies of the management planning are done by forest estate according to long-term plans. One-year plans prepared by forest estate based on long-term plans of the management and study.

In this Law, for the first time since World War II in the same level put public and private forests and defines who and how they are managed. In addition, explicitly prohibits clear cuts and cite exceptions to this rule, and the conditions for their performance.

A lot of the paragraphs of this Law is dedicated to the forest estate, because this Law served to establish a new organizational setting of State in forestry sector.

It is much more precisely defined the management estate and the scope of his work, which now includes the ability to conduct business of primary wood processing (sawmill). However, this activity is limited to own needs and less service. Forestry states are defined as institutions with independent financing and thus put in the same level with other commercial enterprises.

This Law precisely defines three types of documents which are the basis for forest management operations: long-term plan, the management study and a one-year plan.

Thereby they are clearly separated according to the purpose and body, avoiding their overlap and interference in terms of content, purpose and implementation. It can be concluded that the long-term plan is more political, and the management study and a one-year plan are more economical and technologically skilled document.

LAW OF FORESTS FROM 26.04.1961.

Paragraph 1 - Forests, as a good of general interest, is managed to achieve durability and increase their yield and to achieve the purpose of forests.

Paragraph 3 - According to the purpose, the forests are economic, protective and with the special purpose.

Paragraph 4 - Forests in public ownership are given for using to commercial organizations. Some forests in public ownership may be given to the use and other organizations, institutions and government agencies. Forests in public ownership are managed by business and other organizations, institutions and state bodies to which are given to the use of forests.

Paragraph 5 - Forests in civil property are managed by their owners.

Paragraph 6 - Forests are managed based on the forest management plans.

Paragraph 7 – in the aim of rational forest management the forest-economic areas are formed. Forest-economic areas are formed by natural, economic and other conditions that indicate the unity of the whole area (later in this article defines who manages such area and who is responsible for their formation).

Paragraph 8 – Economic organization that managing forests is used the terms of business management, as well as in terms of determining the distribution of income, regulations applicable to commercial organizations.

Paragraph 9 - Organizations that manage forests can be undertaken and processing of wood and other forest products, agriculture, cultivation and exploitation of wildlife and other supplementary activities.

Paragraph 11 - In order to recording the status and changes in forests, establishes the cadastre of forests. Cadastre contains information on forest area, wood volume, forest growth, yield and technical equipment of forests, and the changes that occur in them.
Paragraphs 20-23 - These paragraphs treat the forest - economy management plan, a detailed elaboration of the concept and define the bodies that make and approve it.
Paragraphs 42-43 - Defines the regrouping of the forest, and define the reasons for arrondate of the forest, which can combine with the surface and in whose favor it can be done.
Paragraph 44-52 - This set of articles of this Law discusses the issue of forest inspection, and its formation, the scope of tasks, competencies and educational profile of employees.
In this Law, for first time forests is defined as good of common interests, in particular states and the principle of permanence of return. Also, the forests are precisely defined according to their purpose.
This law defines a slightly different relation of the community managed forests by the forest, so it is said that the forest "... given the use of certain subjects.
Forests are managed according to forest management plans (changed name of the management study, and this term is no longer used), and management unit size is equal to the size of the commercial forest area.
Forest-economic area is a new term and is intended to ensure the unity and integrity of forest ecosystems that are the subject of management. In this Law has corrected the error from the previous Law (it is not defined the process of forests in the lack of the existence of the management study), and defines how to manage forests when the forest - economy plans have not yet been passed (management is based on annual plans).
Confirms the economic character of the organizations that manage with forests, a specificity that is now clearly allows forestry organizations dealing with the other (secondary) activities, which is a list that goes beyond that of the previous law.
There are now included, in addition to the primary production, and hunting, agricultural production, etc. In addition, it establishes some new services, bodies and procedures, such as the cadastre of forests, forest inspection and regrouping of the forest.

LAW ON THE IMPLEMENTATION OF CORE LAW OF FORESTS OF 18.11.1961.

Paragraphs 1-3 - Defines the process of formation of forest - economy areas.
Paragraphs 11-12 - Defines the procedure for adoption of forest management plans (and in this Law states that the forest management that were made forest Management Plan is according the annual management plans).
Paragraph 17 - Clean cutting of forests, which is not prescribed by Forest management plan may be approved if it is necessary for the introduction of types of higher value or faster growth and better forms of cultivation, and to the special conditions:
Paragraph 25 - Forest order must be imposed: 1) after wood cutting, 2) when the forest order was damaged by fire or the effects of wind, snow and other natural disasters, or plant diseases and insect pests.
Paragraph 32 - The text of this article defines the jurisdiction and procedure of determining the boundaries of forests in public ownership.
Paragraphs 37-38 – More precisely regulates the way of spending of the Fund resources for the improvement of forestry and how it will allocate unspent funds in the current year.
This Law was passed very soon after the primary one (in the same calendar year) and makes it a supplement or amends the Basic Law on Forests. The amendments are the paragraphs which define the process of formation of forest - economic areas and making forest - economy basis, as well as the obligation of introducing forest order.

Here is for the first time, indirectly mentions form of financing forestry funding in the frame transitional and final provisions. There is defined only procedure of scheduling unspent resources for the current year. However, based on the text of paragraphs which make development of it, it can be concluded that the Fund was structured according to political division of the republic, provincial, district and county level.

LAW AMENDING THE LAW ON PRIMARY LAW OF FORESTS 17.03.1965.

Paragraph 1 - Forest and forest land in public ownership, managed by economy and other labor organization, are the assets of these organizations.

Paragraph 2 - Forest management includes in particular: 1) forest cultivation, forest maintenance (care, protection and conservation), reconstruction (conversion of lower forest types in higher, replacement types of trees) and the establishment of new forests and plantations, 2) exploitation and plantations (wood and other forest products), 3) trade of wood and other forest products, 4) transport of forest and 5) construction and maintenance of forest roads and other appropriate facilities.

Paragraph 20 - Performs a supplement of the same amendment in primary Law, which defines the content of the forest - economy plans, and it must contain the state of forests, objectives of management, the minimum volume of work on forest cultivation and maximum extent of forest cutting.

Paragraph 28 - The value of cleared forest must be compensated, and compensation funds may be used as resources for amortization of forests.

This Law brings many changes, additions and corrections basic Law, but the most important is that these changes, for the first time, wood is classified as fixed assets of enterprises for forests management.

Although the forest has not all the characteristics of the fixed asset (it is specifically assets), this measure is done an attempt to create a much stronger financial base to fund investments in biological reproduction of forests (forest depreciation). Also, the only forest management is much more accurate and more defined, just like the concept and content of the forest management plans.

Heaving in mind the fact that the later development of historical circumstances and events collapsed of federal government it is very important to consider precisely the provisions of the Law.

LAW OF FORESTS 06.05.1967.

Paragraph 2 - General guidelines of cultivation and exploitation of forests in the territory of Socialist Republic of Serbia and autonomous provinces, the program determines the Forestry development program. Forestry Development Program is adopted by the Assembly of the Socialist Republic of Serbia, the territory of autonomous provinces - the provincial assembly.

Paragraph 10 - Forest-management plan is adopted, for a period of ten calendar years, depending on the type of forest management methods.

Paragraph 15 - Work organizations and organs that managing of forests in public ownership, they are obliged to record execution of works on cultivation and cutting of forests in the forest management plan.

Paragraph 38 - Forest Cadastre is establishing and running the municipal organ responsible for forestry in all forests and forest land in the municipality.

The changes brought by this Law are reflected, in the fact that forest management is related to forestry development program (losing the term of long-term plans), which is adopted at the national level. According to the place where it mentions, and organ which makes it development of this program is clearly represents the basic document for the management of forest policy in Serbia.
In this Law, along the forest-management plan adds precisely determined period of its duration, and it is 10 years. Also, organizations in forests managements are obligated to keep records of all completed projects in forests. Legal regulation of this issue is probably caused by a rather irresponsible attitude to the written record keeping work in the past.
Once more is expanding space for clean cutting performance, adding exceptions to the prohibition of its execution.
This Law specifically defines the cadastre of forests, and organs responsible for its establishment and maintenance. This Law has undergone two and additions (1968 and 1971), but they did not introduce any substantial changes, but only noticed some mistakes corrected and done a better refinement of some positions.

LAW OF FORESTS 30.04.1974.

Paragraph 14 - Forest-economic area formed the Assembly of the Socialist Republic of Serbia. Decree on the establishment of economic forest area is determined, with her consent, and the organization that has the right to use forests in public ownership in a business-relevant forest area.
Paragraph 17 - General guidelines for forest management are determined by the Forestry Development Program adopted by the Assembly of the Socialist Republic of Serbia.
Paragraph 18 - The organization which manages forests in public ownership should have a professional service for forest management. Organization that manages forests in public ownership of forest - economy covered area must have in its professional services Forestry graduate engineers.
Paragraph 19 - Forests in the public ownership of forest-economy covered area, managed on the basis of general and special forest management plans.
Paragraph 55 - In the forest, as a rule, allowed the collection of natural forest fruits (raspberries, blackberries, blueberries, strawberries, mushrooms, etc.) and herbs, if it is not detrimental to the productive capacity of forest land or forest for cultivation, beekeeping.
Paragraph 57 - In the forest can be grown only those types of game and in the number that do not interfere with the proper forest management.
Paragraphs 60-63 - Defined a new organization that has an impact on forestry, and it is the self interest in community forestry (Forestry SIZ). It elaborates its establishment (ph. 60 and 61), scope of work (ph. 62) and financing (ph 63). The transitional and final provisions of this Law defines the way of preparation for the establishment of SIZ (ph. 116) and transfer of certain Republican money to financial SIZ (ph. 117).
Paragraph 82-86 – In those paragraphs, for the firs time was defined trade, rental and administrative transfer of forests and forest lands.
Through all the provisions of this Law it can be noticed social changes that occurred just prior to its adoption and directly caused its formulation.
Move on social self-management, as a manifestation of the socialist system of relations, produced a major social and economic changes and restructuring, which impinged on all aspects of social and economic activities.

In this sense, this Law has promoted social self-management in forestry. In addition, the opportunity was used to fix some ambiguities in previous Laws, and bring some changes in accordance to the development of forest industry and profession.
The Law confirms that the organization of associated labor only manages forests in the name of the whole society, and the Forestry Development Program definitely becomes the basic document for the management of forest policy.
This Law provides the obligation of employment in forestry engineers on work related to forests and forestry. This legal decision has a role to provide the professional approach and methods to solve grown and more complex problems related to forests and forestry.
Possibilities are expanded and conditions for the use of "secondary" forest products, and to perform tasks related to growing and hunting predicts the existence of hunting-economic plan. In addition, this basis must be consistent with the forest management plan.
A very important part of this Law is that which relates to the establishment, operation and financing a new institution in forestry - Self-interest community of forestry. This institution takes over many functions previously established funds and has a basic task to secure the financing of some very important investments in forestry (afforestation, construction of forest roads, etc.), mainly of infrastructural character.
The main difference in relation on the earlier funds that were functioned in forestry is a system of collecting resources. The SIZ Forestry has provided the financial resources of all the active organizations of associated labor (enterprises) from the territory where it seemed SIZ (republican, provincial, district, regional and local level). This fulfilled an important principle, namely that anyone who has, directly or indirectly, benefits from the forest participate in their state of repair and restoration.

GENERAL LAW OF FORESTS 29.06.1981.

Paragraph 1 - Forest and forest land, as a resource of general interest, because of its forest management functions enjoy special protection given by Law and are used under conditions and in the way prescribed by Law.

Paragraph 2 - Under the multiple benefit forest functions, in sense of this Law, means: protection, hydrology, climate, hygiene and health, tourism and recreation, economic, educational, scientific research and defense functions of forests.

Paragraph 3 - The forests in public ownership managed by the workers in primary and other organizations of associated labor as a condition of their work.

Paragraph 7a - Organizations of associated labor use forests in the social owned, an organization of associated labor involved in wood processing and organization of associated labor involved in trading of wood and wood products, in the self-managing communities of interest in forestry, self-managing agreements and coordinate relations determine the rights, obligations and responsibilities of a widening and strengthening of forest reserves as a raw material for the activities of these organizations.

Paragraph 8a - In order to improve their forests, organized involvement in commodity exchange and exercise of other interest, owners of forests can their work, forests, work and other assets on which there is a property right to join collective farms and other forms of association of farmers and associate them with work of workers and social environments in organizations that use the forest.

Paragraph 8b - Define self-managing agreements about association of forest owners in cooperatives and other forms of association, which regulates the way of activities and tasks in the use of forests.

Paragraph 11a – By social agreement can be further developing criteria for the application of the Law established the conditions for organizing the basic organizations of associated labor.

Paragraph 14a - If on the forest - economy area in the labor organization that uses wood in public ownership was established more of basic organizations of associated labor and self-managing agreement governing the mutual rights, obligations and responsibilities in taking action regarding the use and improvement of forest established in the general and special FMPs.

Paragraph 21a – By general and specific Forest Management Plans are determined the way of use of forest land until they make afforestation, so as to ensure its rational utilization to improve livestock and for other purposes and to protect soil from erosion.

Paragraph 22 - General and specific Forest Management Plan serves as a base for establishing long-term and medium-term plan for the organization that manages the forest.

Paragraph 25 - An organization that manages the forest brings the annual operational plan of forest management, which includes data on the type and scope of works, place, time and way of their performance. It should be harmonized with the general and special forest management plan and it is an integral part of the annual medium-term plan of achieving an organization that managed forests.

Paragraph 69a – With the organization plans that manage forests and plans of self-managing community for forestry, it is presented the **balance of trees**. It contains the data about forests (area, yield, etc.), but also gives the forecast conditions and possibilities of production of forest assortments and planned marketing of wood on the market.

In the first paragraph of the Law, we meet the definition of forests, where is emphasized that they have multiple benefit functions, which have a wider significance for the whole community.

Here is underlined the significance of the working class and the organization of associated labor, which use wood in public ownership, with the aim of strengthening the forest resources (forest production function is particularly important in this period).

In ph. 8a for the first time encountered the attitude of the association of forest owners with holders of arable land, which affects in the improvement and expansion of production capacity, both in forestry and agriculture.

In particular, it emphasizes the use of forests as one of the most important disciplines of forestry sector observation period. Because there are special and general forest plans, which determine the way of use of forest land, and especially emphasizes the importance of the existence of forests especially in areas prone to soil erosion. This Law is expressed a strong need and necessity of rational forest management, in accordance with the principles of sustainability.

In organizational terms is a very important organization that manages the forests, because it brings the annual forest management plan, which should be in accordance with the general and specific basis.

This law has, above all, the importance that emphasizes the organizational aspects of the forestry sector. At the first time it is mentioned the possibility of establishing an association that would unite the goals that have agriculture and forestry owners. Also, introduces a new term of balance of wood, which gives complete information on the forestry sector and its development prospects in the future.

GENERAL LAW OF FORESTS 06.03.1982.

Paragraph 4 - Forests must be maintained, updated and exploited to preserve their values, provide permanence and constantly increasing growth and yield and their multiple benefit functions.

Paragraph 5 - To ensure rational use of forest resources and the achievement of the expanded reproduction of forests, which will take place according to the general interests of the community to natural, economic and other conditions, to form a forest-economic areas.

Paragraph 16 - Forest-economic area includes forests in public ownership and forests in which there is no right of ownership, that the forests in public ownership in this area consists of a unique natural and economic entity.

Paragraph 20 - Exploitation of forest are: forest cultivation, production of wood assortments and building and maintaining forest roads and other facilities.

Paragraph 25 - Special Forest Management Plan is adopted for a one management unit. It provides analysis of the previous forest management, presents the status of forests and the forest management objectives, the type and scope of works, measures for achieving the goals of management and economic - financial analysis of forest management.

Paragraph 42 - Clearly defines the tasks for organization and forest owners who manage with forest. These tasks are focused on permanent conservation the value of forests and ensure the continuing increase in their growth.

Paragraph 51 - It is forbidden to devastation and deforestation, clean cut is not allowed as the form of forest regeneration, felling rare types of trees, growing beech forest, pruning the trees, collecting litter and moss, cutting seed stands and seed trees, arbitrary seizure of forests.

Paragraph 64 - Organization of joint work, community work and working people and citizens across local communities have to establish regional self-managing community of interest for the forests. Regional Community for Forestry joins the Republican self-managing community of interest for the Regional Community Forestry. Forestry and Republican Board of Forestry form the self-management agreement concluded between organizations of associated labor, the labor community and working people and citizens across local communities.

Paragraph 70 - Funds for the execution of tasks in self-managing community of interest for forestry are provided: pooling of funds of the joint work, community work and working people and citizens of the fees of members of the regional community, pooling funds of self-managing organization, from the funds collected from penalties for economic crimes, loans and public loans.

Paragraph 93 - The boundaries of forests in public ownership that are not specified, determines organ by decision which establishes the authority designated by the Municipal Assembly at the request of the organization that manages the forest.

Paragraph 96 - Organization of associated labor which disposes the forests in public ownership covered by forest – economy areas can certain forest or parts of forest to transfer to organizations of associated labor to manage the forests with the consent of the authority responsible for formatting forest – economy areas.

In this law is particularly prominent multiple benefit functions of forests. To ensure rational use of forest resources and the realization of simple and expanded reproduction to form a forest-economic areas, and provides the basis of economic and financial analysis of forest management.

This law shows the objective and scope of activities in the field of forest management. In addition to general and special forest-economic grounds, there are general and Forest

Management Plans (for forest covered by forest – economy area) and Forest Management Plan (forest not covered by forest – economy area).
This law is progressively more complex tasks and responsibilities within the forest management, but the goal is unique and consists of forest management on the principles of **intensive forest management**.
Also, these trends of development should be consistent with the trends of development of wood industry and overall economy in general. In this Law the balance of forest replaces the previously mentioned basics, which gives to forest management a different, more complex dimension. All of the basics are intended to identify the long and medium plans of the organization that manages the forest.
In the frame of this Law are clearly underlined the priorities and objectives in terms of cultivation, promotion and exploitation of forests, but also special established responsibilities which they should adhere to the owners of forests, and the law in this respect has more binding character. Also, more precisely the specific prohibitions in forest areas, which is important for forestry in terms of conservation of forest resources in the country.
In organizational terms, citizens gain greater freedom to participate equally in matters concerning the forest sector, and the republican form of regional and community forestry, with certain powers.
With their existence is doing on democratization and public participation in the forestry sector of the economy, coordinate and share personal interests and needs in the use of forests (recreation, tourism) and improves forestry (regeneration, reforestation, etc.).
The regional community is becoming one of the most important body for decision middle and long-term planning in forestry, but intensively monitor the exercise of social and spatial plans and recommend measures for their implementation.
Self-management agreements about formatting Autonomous communities of interest for forestry (ph. 66) regulates many important jobs in the forestry sector, such as making the community plan, pooling resources and their uses, delegate responsibilities, rights, obligations and responsibilities of community work, etc.
While self-management agreement of formatting the regional community forestry (ph. 67) is determined: the basic conditions for the organization of communities, the tasks and activities of members, etc, which led to organizational fragmentation. This unnecessarily complicates administration and the organization does not change significantly. Thereby, so has increased the cost of administration, which has led to an unnecessary increase in costs of forest management and hazardous process of bureaucratization.
This law is clearly highlighted the need for an accurate determination of the borders of forests, which is very important because it directly depends on the ownership structure. In addition, forests in public ownership do not give the citizens of the lease. The Law established the department of forestry activities and powers of inspection, which implemented its obligations in accordance with the law and penal provisions in this law is very extensive, from which it can be concluded that this law has a serious character in this respect than his predecessors .

LAW AMENDING THE LAW OF FORESTS of 23.09.1986.

Paragraph 4a - Forest management is an activity of special public interest.
Paragraph 72a - The organization of associated labor and the working community for which is prescribed an obligation of establishing self-managing communities of interest in forestry, provides a means of income from the payment of the Republican self - managing community

of interest for the enforcement of forestry activities: afforestation, melioration of degraded forests, protection and care of forests plantations.

Paragraph 95a - An organization that manages forests in public ownership is required to obtain written documentation of the basis of use and other rights to forests and forest land, establish and maintain records of forests and forest lands.

Paragraph 100a – Regrouping of forests and forest land can be made in favor of the organization of associated labor that manages forests in public ownership in the way and procedure stipulated in the Law about the use of agricultural land.

These amendments are particularly emphasizes the importance of forest management. Also, the organization that manages the forest is not required to make operational plan for forest management for work on the melioration of degraded forests and thickets, afforestation, care and conservation of forest plantations, but the works performed by the program to use the funds on the basis of which self-interest groups for forestry and other participants in the financing of the funds allocated to these works (ph. 13).

This law is particularly emphasized the scope of self-interest obligations for community forestry, as well as the obligations of the organization that manages the forest. One paragraph is committed to the restructuring of forests and forest lands, which may be made in favor of the organization that manages forests in public ownership.

GENERAL LAW OF FORESTS of 30.09.1989.

Paragraph 4 - In order to secure financial and other requirements for the protection, use and improvement of forests was established the Social Fund for Forests in Serbia.

Paragraph 7 - For management of forests in public ownership covered by forest – economy areas are established public enterprises.

Paragraph 11 - Public enterprise is establishing for one or more areas of forest – economy areas.

Paragraph 13 - Incomes of public enterprises are: funds generated from forest management, funds generated by purchasing or trading of forest products, providing services in forest management, means that the Fund focuses on the implementation of medium-term and annual programs of the Fund for the promotion and protection of forests, funds provided directly pooling of funds of stakeholders.

Paragraph 51 - Fund for the reproduction of forests, whose obligation is determined by extracting federal law, are used for maintenance of forests, restoration and rehabilitation of forests, planting new forests and forest plantations and their care and conservation.

Paragraph 53 - Fund: makes medium-term and annual program for conservation and forest improvements, brings the financial plan, determines the amount of fees that are a source of income of the Fund, establishes the criteria and conditions for directing and allocation of the Fund resources, decide on the allocation of resources, monitor the implementation of the program works and control the use of Fund resources.

Paragraphs 77-80 - A company may for a fee to dispose the woods in public property can some trees or its parts to replace the other parts of the forest by contract.

This law is very similar to that of 1982 year. Within it for the first time is mentioned establishing a social Fund for forests of Serbia, which provides financial resources for financing activities in the forestry sector (assumes the role previously repealed SIZ).

Also, the established public enterprises for forest management, which are of special importance and have important public interest (by establishing their earlier state forests practically translated into state property). For this purpose, and to facilitate forest

management formed the 16 forest - economy areas (ph. 9), while forests that are not covered by forest- economy areas are managed by companies in the field of water management, agriculture etc.
Sources of income of public enterprises are numerous, a public enterprises is obliged to ensure that forest management which is directed on perform all necessary tasks in forestry. The representatives of the founder, who participate in the work of public company, have tasks related to activities related to: the adoption of specific forest plans, the draft of the Statute, the adoption of medium-term annual work plans and development of public enterprises, etc.
This law clearly and accurately describes the general objectives and specific forest – economy plans, which are similar as in the previous Law. Here are discussed, also a non wood forest products which besides wood have an important role in forestry (gathering berries, ph. 46), and raising the game that occurs in accordance to a special forest - economy plan and the hunting-economy plan.
In part related to forest resources for reproduction forests, is precisely determined a priority tasks and where the funds are directed to forest reproduction. Also, define the functions of the Forest Fund of Serbia, whose scope of work expanded, and are the Fund's income, which comes from fees for harvested wood, compensation for pollution and noise from the reproduction of forests (ph. 54). It can be concluded that this Law fund gains importance, because its functions are multiplied and became very important for financing activities in forestry.
Поседници шума овим законом обавезни су да предузимају мере ради заштите шума од пожара и других непогода, као и од биљних болести, штеточина, итд. Предузећа су обавезна да имају план заштите шума, којима се обезбеђује превентива у области шумарства. Предузећима се пружа већа слобода у погледу промета, закупа и арондације шума (могућа је замена шума, уступање, и сл.).
Holders of forests in this Law are obliged to take measures to protect forests from fire and other disasters, as well as plant diseases, pests, etc. Enterprises are required to have a forest protection plan, which provides prevention in forestry. Enterprises are providing more freedom in terms of trade, tenure and forest regrouping (possible replacement of forests, transfer, etc.).

GENERAL LAW ON FORESTS from 31.07.1991.

Paragraph 5 – Due to of rational forest management, forest lands and other forest resources in a particular territory are established forest areas.
Paragraph 9 - It was established a public enterprise for forest management of state-owned covered by forest areas. Public enterprise for forest management operates under the name: The Public Enterprise for Forest Management "Srbijašume".
Paragraph 21 - Forest area includes forests in the state and private property.
Paragraph 22 - Management of forests in terms of this Law, shall include in particular: ... forest cultivation (simple and extended reproduction) ... Under the simple reproduction of forests is included: preparing the land for natural regeneration, filling, care and cleaning of the stands, afforestation of areas that appear clear cutting ... protection of forests against harmful effects of man ..., conservation of forests from illegal use and illegal occupation, production of forest seeds and seedlings of forest roads and ... Under the expanded reproduction of forests is included: the reconstruction and melioration of degraded forests ..., production of forest seeds and seedlings, construction of forest roads and development projects and plans for expanded reproduction.

Paragraph 24 - State-owned forest which are covered by forest area and forest of national parks are managed based on general and specific plans for forest management ... Privately owned forests are managed on the basis of general plan and programs for private forest management ... Implementation Plans and Management Programs forests provide the annual performing state forest management plan and annual plan for private forest management.

In this Law the name of forest - economy areas was replaced by forest areas. It is formed exclusively according to geographical and natural conditions, in contrast to the forest - economy areas that could be set aside by some other criteria.
It has been established the general plans (forests cover by an area of one forest area) and specific plans of forest management (for a management unit). Clearly is defined, the deadlines, tasks and data that should be included in basis, and provisions concerning the breeding, improvement and use of forests have significantly changed and supplemented.
The novelty refers to the collection of non wood forest products (which may represent a significant source of revenue in forestry). Thus, these products can be collected only with the written approval of the users (owners) of forests (ph. 49). So this provision by its nature takes on more restrictive and binding character.
The novelty is that it establishes a public enterprise for forest management "Srbijašume", which has retained the activities of public companies mentioned in the Law of 1989 year, with what appeared and additional tasks (preparation of projects, programs and basis of forest management, performing of geodetic works, wholesale and retail trade, external - trade turnover, restoring economic activities abroad, etc.).
Most are related to sales and marketing of forestry products in the market, both domestic and foreign. The financing company is done by selling forest products, services, and fees for the forest has been cleared, loans, budget of Republic, etc. It is noted that the sources of financing companies more numerous than in the previous Law, and Forest Fund does not participate directly in financing companies. Management of the company is in a certain way centralized and administrative body also in this case is complicated, with a relatively negative impact on the development of "Srbijašume".
In this Law for the first time was given a comprehensive definition of simple and expanded reproduction in forestry (ph. 22). Fund incomes for the forest, come from the several sources. Additional sources, compared to the previous Law, are from one-time fee for the forest has been cleared, budget of Republic, deforested fines under this Law, and etc. (ph. 57). In this way the Fund for the forest becomes more important and has more tangible assets, invested in forestry.
From the forest Law were thrown out provisions relating to protective forests and forests with special purpose, as well as provisions regarding the determination of forest boundaries. They were not needed, because they were an integral part of other paragraphs in the provisions concerning forest area and forest management.

CONCLUSIONS

Based on analysis of texts of the laws of forests, it can be traced to the development tendencies of solving certain important issues of economic character. As issues of particular importance can be distinguished the follows:

– problem of **professional basis** for forest enterprises - this refers mostly to the existence and treatment of relevant documents to ensure a professional approach to planning and implementing all activities in forest management (the management studies, forest - economy

plans, forest bases), the what is notable shift from the purely economic (technical - technological and economic) to the ecologically-oriented character of their contents;

- **relationship with the wood industry** - initially there was a close relationship which was later changed the shape and gradually weakened, but it is evident that such a relationship in the beginning of the period after World War II allows to this processing industry a somewhat privileged position to start its development;
- **problem of forest ownership** - at the beginning this issue was almost ignored, but later it solved by recognition of private property, as well as introducing some new categories of property (cooperative, self-managing communities, etc.), but the focus was shifted more towards the obligations of the owner compared to the forest, but to his rights available to these other properties. In addition, for state forests always emphasized those enterprises which manage them (forestry enterprises) are not their owners but do this in the name of the entire community. Only the recent Law (1991 year) defines the state ownership of former community forests managed by the Public Enterprise for Forest Management "Srbijašume". On the other side, it is evident the growing influence of state to the private sector in forestry, both from biological and technical, as well as the organizational aspects;
- **macro planning problem** - state planning in forestry (forest management policy) in the beginning it was related to the general public planning documents (five-year development plans), where more attention was paid to balancing the development of war-ravaged economy but on the interests of other economic sectors. Later he formed a sector long-term plans (long-term forestry development plan, 1967 year), which grew at a later stage in the Forestry Development Program (1974 year). In the future, this role should have a national forest program;
- issue of "secondary" forest products - wood and wood products are constantly in the focus of attention, only to the middle of the period and other forestry products started to take its place in the legal solutions. Initially these were restrictions (prohibition of collecting at a certain time, etc.), and later the corresponding solutions were regulated the other aspects of their production (the purchase, terms of use, etc..). Particularly, the important role takes hunting and wildlife management, that in the planning documents equated with the production of wood (there is the existence of hunting - economy plans and their alignment with the forest management plans);
- problem of **financing forestry** - forestry initially funded more from budget (all revenues are folded into the budget, that would be reconciled expenditure from it), but later was moved to self-financing.

However, it soon realized that these funds are not sufficient for all necessary work in the forests (primarily of biological nature), so it resorted to additional sources of funding. Such an additional source of funds that were initially acted to "spill over" funds from better to worse forest area (Forestry improvement fund), and later received much wider character, according to the sources of funding.

Especially it is important the role of the appearance of Self-interest communities in forestry (1974 year.), which took over the duties and role of previous funds. Namely, there is a particularly important way of financing, since it means the Forestry SIZ was collected from all businesses that have operated in the territory of which the SIZ was responsible.

Thereby has respected the principle that everyone, either directly or indirectly, have a benefit from the forests involved in the repair of their states. On the basis of operation way of SIZ Forestry, Social work has continued by Public fund for the forests of Serbia, but with much less administrative body (reduced opportunities for the bureaucratization of the fund). However, in 1997 year the Fund ceases to operate, thus breaking the long-term additional

funding forestry, and this is happening at the moment when the degree of vulnerability of forests more than ever before, and when the retrograde trends already visible in almost all indicators of forest states (Ranković N., Vuckovic M., Nonić D., 2000).

In addition to these major issues that have continuity in most of the laws, there are some others that have a slightly different character, such as the ban on clear cutting, consolidation, regrouping of the forest, declaration of forests as the fixed assets companies (1965 year), obligation of existence of the balance tree, cadastre of forests, forestry employment obligations of engineers in tasks related to forests and forestry, forest inspection, etc. All of these questions and problems had their place in the legislation during the period, so we could say that it has played an important role in forestry development, as well as economy fields.

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ECONOMIC ASPECTS OF FORESTRY
IN THE LAWS ON FORESTS AFTER SECOND WORLD WAR IN SERBIA

Summary

Through the analysis of forest law in this paper explored the area in particular concerning: the relationship of forestry and wood industry, personnel management, forest ownership, macro planning in forestry, forest finance, as well as problems of “secondary” forest products.

Problem of **professional basis** for forest enterprises work are observed in the historical period ranging from purely economy to the ecological-oriented character of their contents. The relationship with the forest and wood industry in the beginning was much more intense, until after World War II weakened and so this type of economy activity gradually got more and more important. The problem of **forest ownership** is resolved by recognizing private property, as well as introducing some new categories of ownership. The focus was shifted more towards the owner of obligations in relation to the forest, but to his rights available to these other properties.

Also, it is evident that the growing influence of state to the private sector in forestry, both from biological and technical, and from an organizational aspect. Question about macro planning in forestry refers to the state planning in this sector (forestry management policy), which was originally related to the general state planning documents, but later formed a long-term sectoral plans, which have grown at a later stage in the Forestry Development Program, a in the future, this role should have a National Forest Program.

The question of "secondary" forest products becomes significant only in the middle of the period. Initially these were prohibitions relating to the collection at a certain time, etc., and later the corresponding solutions were regulated and other aspects of their production (the purchase, terms of use, etc.). **Financing of Forestry** is also imposed as an important economy aspect of the forestry sector. During the period under forestry has had a variety of funding sources, which are analyzed in detail in the review.

ОСОБЕННОСТИ ПРАВОВОГО РЕГУЛИРОВАНИЯ И УПРАВЛЕНИЯ ЛЕСАМИ В ТУРКМЕНИСТАНЕ

Ё.А. КЕПБАНОВ[45]

Summary: *Features of the Forest Code of Turkmenistan (2011), the maintenance of its separate concepts, issues of the property right for forest fund, protection, use of sites of forest fund and forest reproduction, and also forest seed-growing are considered. The special place to issues on organization of forestry management in Turkmenistan, activity of state bodies, forest enterprises in sphere of forest protection and uses considered.*

Key words: *the legal regulation, forest legislation, forest fund, using of forest fund, forest protection, forest reproduction.*

1. Предисловие

Аридный Туркменистан – один из лесодефицитных регионов Центральной Азии. Леса произрастают в жестких природно-климатических условиях аридной зоны. Основную территорию лесного фонда страны занимают пустынные леса.

Общая площадь лесного фонда Туркменистана составляет 9,9 млн. га, в том числе, покрытая лесом – 4,1 млн.га. [7]. Общий запас древесины в лесных насаждениях составляет 13,7 млн. мз, в том числе спелых и перестойных – 4,2 млн. мз, или 30,7% (А.Г. Бабаев, 1995).

Леса Туркменистана в условиях жаркого и сухого климата имеют огромное экологическое значение. Они играют большую роль в регулировании климата и водного баланса, выполняют важную почвозащитную, водоохранную и противоэрозионную функции. К началу 90-х годов прошлого века антропогенные факторы в сочетании с суровыми климатическими условиями привели к сокращению площади лесов в Туркменистане. Из-за массовой вырубки и пожаров на горных склонах возникли пустыри и участки с изреженной растительностью, результатом чего явились деградация почвы, растительности, уменьшение числа водных источников и их исчезновение. Общая площадь вырубленных лесов саксаула в пустынных лесах составила примерно 64% от прежнего ареала. В горах в результате неконтролируемой вырубки площадь арчовых лесов сократилась более чем в 2 раза, а тугайных – на 5,5 тыс. га [7].

Начиная с 1990 года заметно усилилось внимание государства к экологическим проблемам леса. В числе первых постановлений, принятых Правительством Туркменистана «О мерах по обеспечению сохранности и улучшению использования лесного фонда» 29 апреля 1990 года была запрещена рубка главного пользования, усилен государственный контроль за охраной, состоянием и использованием лесов [15]. В стране были предприняты усилия по обеспечению развития лесного хозяйства и озеленению, приняты несколько постановлений Президента Туркменистана [8-12; 14]. В результате целенаправленной политики лесовосстановления и лесоразведения постепенно стала увеличиваться площадь покрытых лесом земель, обеспечиваться принцип воспроизводства, охраны лесов, повышаться их устойчивость и

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продуктивность. Благодаря централизованному снабжению топливом и газификации сельских населенных пунктов снизились объемы заготовок древесины, незаконная рубка леса. Таким образом, за период с 1998 года по настоящее время, площадь восстановленных лесов в Туркменистане составляет более 40 тыс.га.

Трансформация функций лесов в сторону их экологической значимости, ставит перед лесным законодательством новые задачи, связанные с оценкой таких функций леса, как сохранение их биологического разнообразия, регулирование климата, повышение почвозащитных и водоохранных функций и др. Для их достижения, потребуются, прежде всего, меры правового характера, направленные на развитие и реализацию лесного законодательства.

2. Особенности правового регулирования лесами в Туркменистане

Основным нормативным правовым актом в области охраны, защиты, рационального использования и воспроизводства лесов является Лесной кодекс Туркменистана, принятый 25 марта 2011 года [5]. Он охватывает правовым регулированием широкий круг вопросов в сфере лесных отношений и по своему содержанию существенно отличается от ранее действовавшего Лесного кодекса 1993 года.

В целях единообразного понимания лесной терминологии, их правильного толкования и применения в Лесном кодексе впервые предусмотрена статья о понятиях, в которой представлены такие правовые категории, как «лес», «дерево», «лесной фонд», «лесное хозяйство», «лесовладение», «лесопользование», «лесные ресурсы», «пользование лесным фондом» и другие.

Базовым для лесного законодательства является понятие «лес». Учитывая специфический характер леса и его особенности в условиях Туркменистана, он определяется как «совокупность взаимосвязанных и взаимодействующих компонентов биологического разнообразия и природной среды, где преобладает древесно-кустарниковая растительность, минимальная площадь которой составляет 0,5 гектара, минимальная ширина - 3 метра и проективное покрытие - не менее 10 процентов данной площади» (ст.1, п.5).

Безусловно, такие по размеру минимальные цифровые характеристики леса в Туркменистане обусловлены природно-климатическими условиями, а также особенностями пустынных лесов, которые занимают большую часть территории лесного фонда. Определение базируется как на биологической, так и технической характеристике леса и основано соответственно на компонентах биологического разнообразия и показателях, характеризующих территориальные его пределы. При технической характеристике леса описывается лесная экосистема посредством характеристики группы деревьев, которые приводят к созданию определенного лесного микроклимата в древостоях и основываются на минимальной площади, ширине и проективном покрытии (в процентном выражении).

В данном случае весьма важно акцентирование понятия леса на территориальной характеристике - площади его фактического произрастания. И это понятно, ведь основным объектом лесных правоотношений, согласно Лесному кодексу, являются леса. Среди его нормативных положений приоритет отдается правовому регулированию лесов и лесных земель, там, где непосредственно произрастает лес.

Учитывая данное обстоятельство, Лесной кодекс не случайно предусматривает, что его положения не могут в полной мере применяться в отношении нелесных земель, даже если они в установленном порядке переданы лесохозяйственным и иным

предприятиям во владение и пользование. Например, участки лесного фонда не покрытые лесом и нелесные земли могут использоваться для сельскохозяйственных целей - сенокошения, выпаса скота, размещения ульев и пасек, огородничества, бахчеводства и выращивания других сельскохозяйственных культур, в учебно-опытных и научно-исследовательских целях, в культурно-просветительных, воспитательных, туристических, оздоровительных, рекреационных и спортивных целях (ст. 34-38). Отношения, возникающие по данному поводу на участках лесного фонда, регулируются в большей степени иным законодательством, на что непосредственно указывают соответствующие отсылочные нормы Лесного кодекса. В данном случае налицо приоритет специального законодательства перед возможностью регулирования данных отношений самим Лесным кодексом, который затрагивает указанные отношения лишь для необходимости обеспечивать охрану, рациональное использование и воспроизводство лесов.

При определении понятия «лес» лесное законодательство ряда стран СНГ, прежде всего, основывается на его биологической характеристике, что, на наш взгляд, может затруднять применение положений соответствующих законов (кодексов). Говоря об этом, Шуплецова Ю.И. справедливо отмечает, что в настоящее время законодательство Российской Федерации не содержит нормативного определения «лес». В Лесном кодексе России говорится только «о представлении о лесе». [17].

Такой же специфический подход в Лесном кодексе имеет место при определении понятий «дерево», «кустарник» и другие. При всей своей неоднозначности они, будучи закрепленными в Лесном кодексе, приобретают нормативное, обязательное для применения толкование.

Лесной кодекс определяет понятие «лесной фонд» как часть территории Туркменистана, где произрастает лес, а также территории, не покрытые лесом, которые предназначены для нужд лесного хозяйства (ст.1, п.3).

К лесному фонду относятся все леса естественного и искусственного происхождения, а также не покрытые лесной растительностью земельные участки, предоставленные для нужд лесного хозяйства (ст.8, ч.2).

В состав земель лесного фонда входят лесные и нелесные земли. К лесным землям относятся земли, покрытые, а также временно не покрытые лесом, но предназначенные для нужд лесного хозяйства. К нелесным землям относятся земли, не покрытые лесом, но предназначенные для нужд лесного хозяйства (просеки, дороги, противопожарные разрывы и др.).

Ранее действовавший Лесной кодекс Туркменистана от 12 апреля 1993 года (ст.4) не включал в состав земель лесного фонда земли особо охраняемых природных территорий, где соответственно произрастает лес.[6]. Ныне действующий Лесной кодекс такую оговорку исключил, тем самым подтвердив «де-юре» факт того, что «леса, находящиеся на территории Туркменистана, образуют лесной фонд, независимо от категорий земель, на которых они расположены» (ст.8, ч.1).

В лесной фонд не входят деревья и группы деревьев, полезащитные лесные полосы, а также иная древесная и кустарниковая растительность на землях сельскохозяйственного назначения; деревья, группы деревьев, а также иная древесная и кустарниковая растительность на приусадебных, дачных и садовых участках (ст.8, ч.4). В данном случае, хотя они конкретно не названы лесами, а именуются «деревья, группы деревьев и иная древесная и кустарниковая растительность», тем не менее, Лесной кодекс не различает эти понятия между собой. Поэтому статус лесов, не входящих в лесной фонд вполне идентичен со статусом лесов, входящих в лесной фонд

и на них распространяются нормы Лесного кодекса об охране, защите, использовании и воспроизводстве лесов.

Принимая во внимание различные функции леса с учетом его экологических, социальных и экономических функций, Лесной кодекс подразделяет леса на категории защитного, специального и производственного назначения (ст.11). Такая классификация заменила ранее существовавшее деление лесов на первую, вторую и третью группы.

К лесам защитного назначения относятся: водоохранные леса по берегам рек, озёр, водохранилищ и других водных объектов; защитные полосы лесов вдоль автомобильных и железных дорог, иных транспортных и коммуникационных линий; леса пустынных и полупустынных зон; леса зелёных зон вокруг городов и других населённых пунктов; горные леса; леса зон санитарной охраны источников водоснабжения (ст.12, ч.1).

К лесам специального назначения относятся: леса особо охраняемых природных территорий; городские леса; рекреационные и оздоровительные леса; леса, расположенные в пограничной зоне и полосе пограничного контроля, а также на землях, предоставленных для нужд обороны; особо ценные лесные массивы; леса, имеющие научное или историческое значение (ст.13, ч.1).

К лесам производственного назначения относятся леса, предназначенные для заготовки древесины и иных лесных ресурсов и не отнесённые к лесам специального и защитного назначения (ст.14, ч.1).

Как видно из данной классификации, основной упор сделан на охранные (защитные) функции леса, которые свойственны большинству их разновидностям и которые, прежде всего, выполняют важные экологические функции. Учитывая аридные климатические условия Туркменистана, Лесной кодекс определяет специфические особенности лесов, основным предназначением которых является выполнение средообразующих, водоохранных, защитных и иных функций. Именно эти факторы обусловливают особенности правового регулирования лесами в стране.

Что касается производственных лесов, то они, в нынешних условиях не играют какой-либо существенной роли для экономики страны. Даже при осуществлении рубки главного пользования, которая может проводиться в спелых и перестойных древостоях, главной её целью является не экономический фактор, а природоохранный, предусматривающий регенерацию и стабилизацию древостоев (ст.39, ч.1). Учитывая общее состояние лесов в Туркменистане, обусловленную значительным сокращением их общей площади, использование производственных лесов путем применения рубки главного пользования в ближайшем будущем представляется проблематичным.

Лесной фонд является исключительной собственностью государства, который в целях охраны, защиты, рационального использования, а также воспроизводства передаётся в бессрочное владение и пользование соответствующим государственным органам и организациям Туркменистана (ст.5, ч.1-2). Туркменистан осуществляет право собственности на лесной фонд через специально уполномоченные государственные органы. К их числу Лесной кодекс относит государственные лесохозяйственные предприятия (лесхозы), особо охраняемые природные территории со статусом юридического лица и другие государственные организации и учреждения (лесовладельцы).

Вместе с тем к числу лесовладельцев следует относить также и негосударственные организации, например, дайханские объединения (наподобие бывших колхозов), которые создаются для ведения сельскохозяйственного производства и основаны на смешанной форме собственности [6]. В настоящее время

около 6,5 млн. га территории лесного фонда находится в долгосрочном пользовании дайханских объединений под пастбища [7]. В Лесном кодексе на этот счёт не имеется прямого запрета либо ограничения и поэтому негосударственные организации можно относить к числу лесовладельцев.

Лесовладельцы, в свою очередь, обладая соответствующими участками лесного фонда вправе передавать их в пользование (аренду) юридическим и физическим лицам, которым предоставлено право срочного лесопользования (лесопользователи). Их право пользования участками лесного фонда возникает на основании решений владельцев лесного фонда.

В настоящее время законодатель прямо не предусмотрел право собственности юридических и физических лиц на леса. Вместе с тем возникает вопрос, как быть с лесами, которые находятся на земельных участках, являющихся собственностью юридических и физических лиц? Кодекс Туркменистана «О земле» от 25 октября 2004 года допускает право частной собственности граждан на землю (для ведения личного подсобного хозяйства (ст.25), для производства сельскохозяйственной продукции (ст.27) и семьям граждан для индивидуального жилищного строительства (ст.26) [3].

Учитывая данное обстоятельство, законодатель, видимо, специально не включил леса, находящиеся на указанных земельных участках в состав лесного фонда. Согласно статье 8 (ч.4) Лесного кодекса в лесной фонд не входят: деревья и группы деревьев, полезащитные лесные полосы, а также иная древесная и кустарниковая растительность на землях сельскохозяйственного назначения; деревья, группы деревьев, а также иная древесная и кустарниковая растительность на приусадебных, дачных и садовых участках. Следовательно, из этого следует, что леса, расположенные на указанных земельных участках граждан являются их собственностью. Лесной кодекс тем самым косвенно допускает право частной собственности граждан на леса (в отношении лесов не входящих в лесной фонд). В этом случае лесопользователи имеют возможность использовать такого рода лесные участки, владеть, пользоваться и распоряжаться лесными ресурсами по своему усмотрению.

Таким образом, следует отметить, что пока единственным собственником лесного фонда в Туркменистане является государство, которое может передавать участки лесного фонда во владение и пользование.

Леса, как отмечалось, выполняют важные экологические и социально-экономические функции. При этом, учитывая особые климатические условия Туркменистана, приоритет в большей мере отдается экологическим функциям леса. Об этом свидетельствует тот факт, что в стране, совсем недавно, была запрещена рубка главного пользования и наличие большой разновидности лесов защитного назначения. Именно эти факторы обуславливают особенности правового регулирования лесопользования в стране.

Под понятием «использование» в отношении не только лесов, но и всех природных ресурсов законодатель имеет в виду их рациональное использование. В лесном праве понятие «рациональное использование лесов» учитывает специфические особенности лесов, их способность к возобновлению, многофункциональность, выполнение важных средообразующих, водоохранных, защитных и иных функций [4].

Лесопользование, согласно Лесному кодексу, является установленное законодательством Туркменистана право юридических и физических лиц на пользование лесным фондом. В свою очередь, физические и юридические лица, которым предоставлены вышеуказанные права, именуются лесопользователями. Для осуществления этого права, лесопользователи обладают достаточным объемом полномочий, а также гарантиями обеспечения, предоставленных им прав (ст.27-28).

Использование лесов допускается с предоставлением или без предоставления лесных участков. Не случайно, учитывая данное обстоятельство, Лесной кодекс употребляет такие формулировки как предоставление «земель лесного фонда» либо предоставление «лесных ресурсов».

Наиболее распространенным способом осуществления права лесопользования является аренда. Добытые лесные ресурсы по договору аренды лесных участков принадлежат, по общему правилу, арендатору на праве собственности.

Предоставление лесных участков (лесных ресурсов) осуществляется, как в долгосрочное (от 5 до 40 лет), так и краткосрочное (до 5 лет) пользование.

Предоставление земель лесного участка (лесных ресурсов) осуществляется на основании договора, заключаемого между лесовладельцем и лесопользователем. Лесной кодекс устанавливает условия долгосрочного и краткосрочного лесопользования на участках лесного фонда, которые в обязательном порядке должны отражаться в договоре на пользование участком лесного фонда.

В договоре долгосрочного лесопользования должны указываться границы участка лесного фонда, на котором осуществляется лесопользование, площадь участка лесного фонда, виды, объёмы и сроки лесопользования, размер платы за лесопользование, обязанности сторон по охране, защите и воспроизводству лесных ресурсов, ответственность сторон за нарушение условий договора и иные условия, предусмотренные законодательством Туркменистана. Договор заключается в письменной форме и подлежит государственной регистрации (ст.30). Такого рода требования содержатся и в договоре краткосрочного лесопользования, однако Лесной кодекс не предусматривает в отношении него требование по государственной регистрации (ст.32).

Таким образом, в договоре на лесопользование закрепляются обязательные требования, вытекающие из Лесного кодекса, а также положения, которые стороны дополнительно могут отразить в договоре по своему усмотрению, предусмотренные законодательством Туркменистана. В данном случае, имеются в виду, применение норм гражданского, земельного и иного законодательства.

Законодатель установил целевое использование арендованного участка лесного фонда, т.е. участок лесного фонда может предоставляться в аренду только для осуществления лесопользования. Лесной кодекс в этом отношении прямо предусматривает, что юридические и физические лица могут использовать участки лесного фонда только для тех видов лесопользования, которые предусмотрены в специальных разрешениях (ст.26).

Во избежание различного рода спекуляций и исключения коррупционной составляющей, Лесной кодекс предусматривает предоставление лесных ресурсов в лесопользование на основе тендера, гласно и с учётом интересов населения, проживающего на соответствующей территории (ст.29, ч.1; 31, ч.5). В данном случае речь идёт о проведении публичного отбора претендентов, которым должны быть присущи компетентность и профессионализм, наличие у них производственных мощностей для лесозаготовок и переработки древесины.

Говоря об учёте интересов местного населения, Лесной кодекс предусматривает норму о том, что при сдаче земель лесного фонда на условиях лесопользования (аренды) преимущественное право отдаётся населению, проживающему на соответствующей территории. Такой подход соответствует тезису об устойчивом управлении лесами, имея в виду бережное отношение местного населения к лесным ресурсам, а также с точки зрения решения социально-экономических задач на местах.

Лесной кодекс закрепляет открытый перечень видов лесопользования (ст.34). В зависимости от вида пользования лесов лесные участки могут предоставляться: в побочное лесопользование, в учебно-опытных и научно-исследовательских целях, в культурно-просветительных, воспитательных, туристических, оздоровительных, рекреационных и спортивных целях, рубки леса и заготовке древесины и для иных видов лесопользования. Четкое закрепление видов лесопользования на уровне закона имеет исключительно большое значение для его исполнения и является важной гарантией целевого использования предоставляемых участков лесного фонда.

Пребывание граждан в лесах обеспечивается для проведения отдыха, участия в культурно-оздоровительных, рекреационных, туристических и спортивных мероприятиях, а также сбора для собственных нужд дикорастущих плодов, орехов, грибов, ягод, лекарственных растений и иных лесных ресурсов (ст.46). Сбор гражданами для собственных нужд указанных дикорастущих плодов, ягод, орехов, грибов и других лесных ресурсов разрешается в пределах установленных норм.

Таким образом, внедрения гражданско-правовых начал в сферу лесопользования являются важной новеллой Лесного кодекса Туркменистана, необходимым условием заинтересованности лесопользователей в рациональном использовании, охране и воспроизводстве лесов. В этой связи, в современных условиях, включение лесов в гражданский оборот, является одной из наиболее остро стоящих проблем, решение которой возможно с учетом экологической функции лесов и соблюдения приоритета их охраны [17]. Вместе с тем, к данному вопросу необходимо подходить весьма взвешенно, так как применение «гражданского законодательства может привести к установлению для лесов такого же правового режима, как для другого имущества, без учета их природных особенностей» [17].

Лесной кодекс впервые предусмотрел обязательное проведение лесоустройства, без наличия которого ведение лесного хозяйства и лесопользование на участках лесного фонда запрещаются (ст.49; 50, ч.3; 51, ч.2). К сожалению, в бытность Союза ССР в связи с отсутствием в Туркменистане специализированных научных учреждений материалы лесоустройства разрабатывались за его пределами - в России и Узбекистане. Последние материалы лесоустройства Туркменистана были подготовлены и датируются 1988 годом.

Хотя работы по лесоустройству на территории лесного фонда возложены на Министерство охраны природы, тем не менее, последнему следовало бы определиться со структурой, которая потенциально могла бы подготовить материалы лесоустройства. Кадровый и научный потенциал потребуется также и для подготовки лесного кадастра, проведения мониторинга и учета лесов.

Данные государственного учёта лесного фонда, лесного кадастра, лесоустройства и иные данные составляют информацию о лесном фонде, без которых невозможно управление в целях охраны, рационального использования и воспроизводства лесов. В этом плане Лесной кодекс впервые предусмотрел положение, что информация о состоянии лесов является открытой.

Большое место в Лесном кодексе отведено вопросам воспроизводства лесов, которое обеспечивается с помощью лесовосстановления. Целью лесовосстановления является своевременное восстановление лесов на вырубках, гарях и иных ранее занимаемых лесом территориях лесного фонда, улучшение породного состава лесов, обеспечение рационального использования земель лесного фонда.

Для воспроизводства лесов естественного возобновления недостаточно. Поэтому для условий Туркменистана большое значение имеет лесоразведение, представляющее собой такое лесохозяйственное мероприятие, при котором искусственно выращиваются

лесные насаждения. Лесоразведение проводится на нелесных землях лесного фонда в целях повышения лесистости территорий, предотвращения эрозионных процессов, улучшения экологической обстановки и агролесомелиорации.

В Туркменистане в целях расширения площади лесного фонда вопросам лесоразведения и озеленения территорий придается исключительное большое значение, которые широко проводятся на земельных участках различных категорий, особенно населенных пунктов (вокруг городов, поселков и сельских населённых пунктов). Правительством страны за последние несколько лет приняты целый ряд постановлений, среди которых «О развитии садоводства и озеленения в Туркменистане» от 9 ноября 1992 г. [8], «О создании парковой зоны в предгорьях Копетдага» от 22 июня 1998 г. [9], «О развитии парковой зоны в предгорье Копетдага» от 10 октября 1998 г. [10], «О создании зеленого пояса вокруг г. Ашхабада» от 26 августа 1999 г. [11] и «О мерах по улучшению природной среды» от 29 ноября 1999 г. [12]. В этот процесс вовлечены практически все министерства и ведомства, местные органы власти, предприятия, учреждения и организации.

Работы по лесовосстановлению и лесоразведению осуществляются по специальным программам и проектам, утверждаемым Кабинетом Министров, что подчеркивает важность и обязательность проведения такого рода мероприятий.

Исключительно большое значение для воспроизводства лесов имеет лесное семеноводство, особенности которой также впервые нашли свое закрепление в Лесном кодексе (ст.57). Правовое регулирование пользования лесными семенами и иными лесными репродуктивными материалами помимо Лесного кодекса осуществляется также Законом о семеноводстве и иными законодательными актами Туркменистана. Вместе с тем, учитывая, что в Законе о семеноводстве больше сделан акцент на семена в сельском хозяйстве, то в Лесном кодексе сформулированы положения, касающиеся особенностей лесного семеноводства. В частности, в этих целях должны осуществляться мероприятия по лесосеменному районированию, созданию постоянных лесосеменных участков и маточных плантаций, формированию фонда семян лесных растений, а также по производству, заготовке, обработке, хранению, реализации, транспортировке и использованию семян лесных растений.

В целях обеспечения сохранности лесов они подлежат охране и защите. Это комплекс организационных, экономических, правовых и других мер, направленных на обеспечение рационального использования лесного фонда, сохранение лесов от уничтожения, повреждения, загрязнения и иного вредного воздействия. К их числу относятся мероприятия по предупреждению лесных пожаров, своевременному их обнаружению и ликвидации; обеспечению соблюдения всеми лесопользователями и предприятиями и организациями, расположенными на территории лесного фонда, а также находящимися в лесу физическими лицами, правил пожарной безопасности и санитарии; охране лесов от незаконных порубок, повреждений и других нарушений лесного законодательства, а также охране земель лесного фонда; своевременному выявлению очагов вредителей и болезней леса, прогнозированию их развития и борьбе с ними; проведению биотехнических мероприятий; обеспечению соблюдения правил охоты и рыболовства на территории лесного фонда и др. (ст.60).

Защита леса входит в состав общего понятия охраны лесов (ст.60). По сравнению с охраной, защита леса ограничивается такими мерами, как выявление в лесах вредных организмов (растений, животных, болезнетворных организмов, способных при определённых условиях нанести вред лесам и лесным ресурсам) и предупреждение их распространения. Защита лесов от вредных организмов, отнесённых к карантинным объектам, осуществляется в соответствии с Законом о карантине растений.

Таковы основные черты Лесного кодекса Туркменистана, которые в нынешних условиях необходимо обеспечить в повседневной деятельности субъектов лесных правоотношений. По нашим подсчетам, Лесной кодекс содержит более 20 отсылочных норм, реализация которых потребует принятия соответствующих нормативных правовых актов, как на правительственном, так и ведомственном уровнях.

3. Организация управления лесами в Туркменистане

Государственное управление лесами в Туркменистане осуществляют Кабинет Министров, Министерство охраны природы, органы местной исполнительной власти и местного самоуправления.

За Туркменистаном, как за собственником лесного фонда закреплены все ключевые полномочия по владению, пользованию и распоряжению данной собственностью. Эти полномочия от его имени осуществляет, прежде всего, Кабинет Министров (Правительство) - исполнительный и распорядительный орган.

В компетенцию Кабинета Министров отнесены такие важные вопросы, как утверждение основных направлений государственной политики в области лесного хозяйства и обеспечение её реализации; утверждение программ по вопросам охраны, защиты и пользования лесным фондом, воспроизводства лесов и лесоразведения; определения порядка ведения государственного учёта лесного фонда, лесного кадастра, мониторинга лесов, лесоустройства; принятие решений об изъятии земель лесного фонда для нужд, не связанных с ведением лесного хозяйства; определение размера платежей за пользование лесным фондом и порядка их взимания и др. (ст.16).

Министерство охраны природы Туркменистана отвечает за развитие лесной отрасли. Его функции и полномочия определяются Лесным кодексом и Положением о Министерстве, утвержденным постановлением Президента Туркменистана от 8 сентября 2000 г.[13].

В соответствии с Положением, Министерство охраны природы является органом, осуществляющим государственную политику и межведомственный контроль в сфере охраны и рационального использования природных ресурсов, включая лесной фонд, и координирующим деятельность в этой сфере иных органов [13].

В связи с передачей в 2009 году Акционерного Общества «Гек Гушак» в ведение Министерства охраны природы, а также с принятием нового Лесного кодекса, помимо контрольных функций, на Министерство охраны природы были возложены функции по воспроизводству лесов и лесоразведению. Для реализации возложенных на него функций в составе Министерства охраны природы в 2009 году было образовано Управление лесного хозяйства. Управление является самостоятельным структурным подразделением Министерства охраны природы и действует на основе принципов хозяйственной самостоятельности и самофинансирования.

К числу основных задач и функций Управления лесного хозяйства относится организация мероприятий по охране и рациональному использованию лесов, лесовосстановлению и защитному лесоразведению; контроль за состоянием, использованием, воспроизводством, охраной и защитой лесов; охрана лесов от самовольных заготовок, пожаров и защита лесов от вредителей и болезней; лесоустройство и учет лесного фонда, а также ведение лесного кадастра; лесосеменное дело и питомническое хозяйство и др. В его ведение находится 14 государственных лесохозяйственных предприятий (лесхозов). Согласно Лесному кодексу основными функциями лесхозов являются: участие в разработке и выполнении программ охраны, защиты и пользования лесным фондом, воспроизводства лесов и лесоразведения,

выполнение мероприятий в этой области, содержание постоянных лесосеменных участков и лесосеменных плантаций, заготовке, обработке и хранению лесных семян, обеспечение рационального использования лесных ресурсов, оказание содействия в ведении государственного учёта лесного фонда, мониторинга лесов, участие в работах по ведению государственного лесного кадастра, осуществление всех видов рубок, побочное лесопользование и реализация полученной при этом продукции и др. (ст.17, ч.3).

Постановлением Президента Туркменистана от 3 декабря 1998 г. «О совершенствовании управления и использования лесных ресурсов Туркменистана» с 1 января 1999 года все лесхозы были переведены на полный хозяйственный расчет и самофинансирование [16]. Такая ситуация сохраняется и по настоящее время, что в перспективе будет тормозить развитие лесной отрасли.

В бытность Союза ССР лесная отрасль Туркменистана финансировалась в централизованном порядке. После обретения Туркменистаном независимости и до конца 1998 года она также финансировалась из государственного бюджета. Однако, после перевода экономики на рыночные отношения, лесная отрасль, начиная с 1999 года, была переведена на самофинансирование. В этих условиях лесхозы стали больше заниматься выращиванием посадочного материала, производством сельскохозяйственных культур, в то же время вопросы воспроизводства, охраны и защиты лесов, в связи недостаточностью финансовых средств, отошли на второй план.

В составе Министерства охраны природы образуется Государственная лесная охрана. Целью её создания связано с тем, чтобы разграничить функции государственного контроля за лесами и использования лесных ресурсов. Ранее действовавшее лесное законодательство позволяло лесхозам одновременно осуществлять эти функции, что негативно сказывалось на развитие лесной отрасли.

Государственная лесная охрана обладает особым статусом, большим объемом контрольных полномочий за соблюдением лесного законодательства и занимает особое место в структуре Министерства охраны природы, учитывая, что Положение о ней и перечень её должностных лиц утверждаются Кабинетом Министров.

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SITUATIONAL ANALYSES OF THE CURRENT STATE OF HABITAT CONSERVATION STRATEGY IN GEORGIA

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1. Background

The aim of this article is to analyze the current state of habitat conservation strategy and evaluate the conceptual phases of the habitat classification and prioritization activities in Georgia. This information will be used for updating the document - National Biodiversity Strategy and Action Plan (NBSAP, 2005) elaborated and adopted as a requirement of the Convention of Biological Diversity (CBD). This updating and implementation processes of NBSAP is planned for the period of 2013–2020 initiated with assistance of GIZ in the framework of the project "Sustainable management of the biodiversity, South Caucasus" commissioned by German Federal Ministry for Economic Cooperation and Development (BMZ) with duration from 2008 to 2016 working for the Biodiversity Protection Service (BPS) under the Ministry of Environment Protection of Georgia (MoE).

Currently, there are many existing gaps and problems in development of habitats conservation strategy and action plans in Georgia. So far, priority habitats of Natura2000 network are determined in Georgia but not accepted and their protection plan is not developed. Georgia does not already join the European habitat protection program - Natura2000 (CD 92/43/EEC). Although, country is already involved in several EU projects on conservation of habitats such as Emerald network (T-PVS/PA(2010)10revE09) and the European Landscape Convention. Therefore, it is necessary to activate the process of assessment of habitat priority and develop sustainable management of natural resources usage and economic development in natural and rural areas. One local-level priority thematic is the management of natural resources at the pilot locations. This means that the evaluation of natural resources including species and habitat diversity will contribute in determining of priority areas for conservation needs. The internationally recognized areas are not identified on the basis of legal protection areas of the country. However, they need to be assessed on a case by case basis due to the variations in institutions responsible for managing the area that include national government, private landowners and local communities.

2. Analysis of the current situation

2.1. Habitat definition and classification

The main problem in habitat conservation strategy was absence on any information on habitat classification and prioritization in Georgia up to recent time. The classical definition of a habitat is a sum of all environmental conditions at a particular place to which an organism, species, or community are normally adapted (Evans, 2010). However, the habitat as a conservation unit used by European network programs is based on species composition and plant community types besides the abiotic features. The problem in this case is that there is a serious difference in plant species and community type's taxonomic nomenclature in different countries. This is caused by differences between International Code of Phytosociological Nomenclature (Weber et al., 2000) based on two Finland and Swiss schools of phytosociology used in Soviet Union and European countries, respectively. The Georgian geobotanists were using Finland classification systems of plant communities called as associations and phytocenoses (Grossheim et al., 1928; Kimeridze, 1965; Nakhutsrishvili,

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[46] GSNE "Orchis"

1999, Dolukhanov, 2010). Therefore, both plant species and community definitions were different in most countries in the past period and some scientific experts did not have a positive opinion about the suitability for phytosociology to be the main geobotanical approach for managing vegetation systems.

The solution of the habitat classification problem was introduced by Natura2000 habitat directive (Council Directive 92/43/EEC) based on CORINE biotope classification (Devillers et al., 1991) and its successor the Palaearctic habitat classification (Devillers & Devillers, 1996), using the phytosociological nomenclature of European syntaxa, which are syntaxonomic or heterotypical synonyms of species names based on different nomenclatural types and are considered to belong to the same syntaxon. This is a way to solve the problem in different nomenclatural systems.

To support the development of the EU Natura2000 network for extension to new east European countries as they have joined the EU in 1996 the Emerald network of Areas of Special Conservation Interest (ASCI's) under the Berne Convention was adopted. The list of habitat types was taken from the Palaearctic classification in 1996 (Devilliers & Devilliers 1996). However, later was developed new European Nature Information System (EUNIS) habitat classification (T-PVS/PA(2010)10 revE 09), where the habitats are considered as 'a place where plants or animals normally live, characterized primarily by its physical features (topography, plant or animal physiognomy, soil characteristics, climate, water quality etc.) and secondarily by the species composition of plants and animals that live there' (Davies et al., 2004). EUNIS habitats are based not on plant communities but on a 10 hierarchy levels where terrestrial and freshwater habitats are the highest level. In the marine sector it is based on the JNCC Marine Habitat Classification for Britain and Ireland (Connor et al, 2004) and habitat types developed by the Barcelona and HELCOM marine conventions (Barcelona Convention, 1998; Helsinki Commission, 1998). Although, EUNIS habitats are re-structured and re-defined to Annex I of the EU Habitats Directive, they are cross-referenced in the internet databases (http://www.biodiversitya-z.org). The ASCI's of the Emerald network contains several habitat types of Natura2000 and represents not a habitat but their combination, which will not correspond to the priority areas in each country (Moss, 2008). Therefore, it is much easier to identify priority areas by habitats based on plant community type and not on combination of many different habitats. Therefore, all EU countries have developed a classification system where EUNIS units coincide to Natura2000 habitats (Evans, 2010). Thus, the habitat classification becomes the core issue for GIZ project on Caucasus Biodiversity in order to define priority habitat types for the country.

2.2. Analyses of habitat conservation strategy in the NBSAP Georgia 2005

Georgia signed the CBD in 1994. The state program to assess the biodiversity in the country was started in 1996. The assessment was done by the local Environmental NGO - Noah's Ark Centre for the Recovery of Endangered Species "NACRES", in partnership with the MoE and the United Nations Environment Program (UNEP). NBSAP was launched since 1998. The process was supported by the Global Environment Facility (GEF) and coordinated by the MoE and three national NGOs - NACRES, the Georgian Protected Areas Programme (GPAP), and The Centre for Sustainable Use of Forest Resources. The final report "NBSAP-Georgia" was adopted by the Cabinet of Ministers of Georgia on February 2, 2005 (Resolution #27, 19.2.05).

This document contains species and habitat diversity and conservation strategy. However, there is no description of the habitats identified with the international classification systems. The vegetation description is presented by major biomes of Georgia. However, the biomes do not coincides with general biome types, but is described as vegetation zones of

Georgia. Therefore, the habitat types of Georgia are not presented in this document (NBSAP, 2005).

The second issue was evaluation of the habitat disturbances. The major impact on habitat degradation is considered anthropogenic impacts such as forest cutting, wetland drainage and transformation of natural habitats into artificial or semi-natural landscapes. No information is done on climate change effect on habitats.

The strategic plan to maintain and restore Georgia's species, habitats and genetic diversity was based on methodology of *in-situ* and *ex-situ* conservations and through sustainable use of biological resources, which is a right way for maintenance of biodiversity. However, the problem is ignorance of habitat type classification to be necessary for determination of priority and sensitive habitats, which should be protected as pilot areas. The establishment of special areas for conservation (SAC) should be associated with sensitive habitats.

National legislation relating to biodiversity conservation is considered as one of the keystone action for further improvement of nature conservation strategy of the country in this document (NBSAP, 2005). The legislation should be ensuring harmonization to international conventions and laws. Currently, most actual amendments of laws and regulations having contact with habitat conservation include Law of Georgia on "Red List" and Forest Code.

The action plan for maintenance of habitat diversity is considered as identification of threatened plant communities (rare, relic, primary and near primary, globally important, and sensitive communities). This action plan do not coincides with international convention guidelines where plant communities are considered as basis for habitat determination and the priority and sensitivity of habitats should be considered as a major indicator for determination of threats. The hot spots outside legal protected areas and vegetation types are indicated as conservation targets instead of habitats in this document. As threatened areas are considered in NBSAP (2005) Important Bird Areas (IBAs) in Georgia (including complete identification of transboundary IBAs), wetland ecosystems, flood plain forests, overgrazed pastures, semi-arid ecosystems and biological corridors (Surami and Gombori ranges). Javakheti Wetlands Conservation Management Plan is considered as approved agreement between the neighboring countries (Armenia, Georgia, Turkey) on a large-scale transboundary project achieved.

The main shortcoming of this document concerning evaluation of habitat conservation strategy is a gap with international conventions and networks such as Natura2000 and Emerald. Therefore, it is necessary to conduct analyses of these network guidelines and implement them in Georgian NBSAP action plan.

2.3. Natura2000 network assessment in Georgia

The classification and creation of the list of Georgian habitats (Habitats of Georgia, 2010, 2012) based on the directives of Natura2000 (92/43/EEC and 79/409/EEC) and Interpretation manual (EUR27) was made in 2010 in the framework of the GIZ project "Sustainable Management of Biodiversity, South Caucasus" and revised in 2012. The description of each habitat types is composed by sections: 1) General description of distribution area and environmental conditions; 2) Species of plants and animals including dominant, rare and endemic species; 3) Corresponding categories in other countries of Europe; 4) Associated habitats, which occupy adjacent territories; 5) Bibliography. The total number of natural, rural and urban habitats of Georgia is 65. Among them only 21 habitat types are identical to listed in Annex I of Directive 92/43/EEC, 44 different habitat types are present in Georgia, and 25 are priority types (Annex I). The syntaxonomic list of the vegetation units Georgia (up to alliance level) is 147 with 66 sub-types of forest habitats.

The priority habitats ensure the conservation of vulnerable areas such as marine, terrestrial and freshwater habitats, wetlands, floodplains and forests with relic and endemic umbrella species including arid open woodlands, Colchic mixed and subalpine birch forests, etc., which in turn helps to safeguard the animals and plants needed these places to survive. A diverse range of priority habitats should be protected, including as well meadows, estuaries and cave systems and this benefits a huge variety of wildlife species throughout the Georgia. It is not only natural habitat types, but also semi-natural ones, which depend on management of humans (e.g. certain types of grasslands, urban and rural habitats). Habitat types recorded in Georgia is essential for the sake of vegetation mapping and nature conservation.

2.4. Emerald network assessment in Georgia

The Emerald Network aims to identify and conserve areas of a great ecological value for both the threatened and endemic species listed in the Appendices of the Bern Convention and for the endangered habitat types. The project "Development of the Emerald Network in Central and Eastern Europe and the South Caucasus" was started in 2008 in 7 target countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, the Russian Federation and Ukraine). Since 2009 was started the Joint Programme entitled "Support for the implementation of the Convention on Biological Diversity Program of Work on Protected Areas in the EU Neighbourhood Policy East Area and Russia : Extension of the implementation of the EU's Natura2000 principles through the Emerald Network" (DCI-ENV/2008/149-825), which aimed the implementation of an action to identify species and habitats to protect and in selecting the potential sites suitable for ensuring the long-term survival of the species protected by the Bern Convention. Emerald Network Joint Program in Georgia was done by the local NGO NACRES.

Steps undertaken in April-December 2009 are: (1) GIS boundary data for 17 sites were identified; (2) Final list of 20 species of animals and plants identified/agreed; (3) List of habitats identified/agreed (FPR, 2010). List of habitats: 1. Phrygana; 2. Dense perennial grasslands and middle European steppes; 3. Arctoalpine riverine swards; 4. *Salvinia* covers; 5. Near-natural raised bogs. In December 2010 were identified 17 potential Emerald sites, covering an area of 596475,63 ha. Total number of species or habitats within the annexes and resolutions are 161 species and 15 habitats. The list of habitats was not presented (T-PVS/PA(2010)10 revE 09). These areas are EUNIS habitats, but these units contain several habitats of Natura2000 and are cross-referenced to Natura2000 habitat types in the internet databases. They do not correspond to the concrete plant community types, but contain several habitat combinations. The Emerald network (beyond the EU) is still in its initial phase and needs further implementation.

3. Strategic approach of biodiversity and steps for selection of priority habitats for conservation in Georgia

The Georgia's strategic plan to protect priority habitats in the coming NBSAP phase have to take into account the following approaches:

Natura2000 is a basic program in EU nature protection policy which includes a network of protected areas important for conservation of priority habitat types and endangered species (EUR27). This program contains classification of the European mainland, extending east to the Ural Mountains, including Anatolian Turkey and the Caucasus (Sundseth, Creed, 2008). This program is best to use for conservation of priority habitats in each country. Integration in Natura2000 network proceeds in three basic phases for each country: making of national lists of habitats, selecting Site of Community Interest (SCI) and designation of SAC.

The Georgian Natura2000 habitat classification and prioritization is already done. However, the next steps should be implemented in the future.

The Emerald Network ASCIs within EU member states are the same as the Natura2000 habitats (EIB, 2009). This network in EU non-member countries seeks to positively influence the conditions for the survival of habitats and species in the fragmented natural areas and human dominated landscapes, through creation of 'core areas', 'corridors' and 'buffer zones'. These ASCIs are based on EUNIS habitat classification. However, the data bases in the internet (http://www.bio-diversitya-z.org) presenting the areas for protection in all EU member countries contains both EEA's/EUNIS and Natura2000 habitats databases. The data from EU non-member countries are included in these data bases in a few amounts. This is the one of the main approach for involving in a strategic plan of NBSAP of Georgia to introduce the data on Georgia's habitats and ASCI's in these data bases.

The European Landscape Convention (Florence Convention) promotes the protection, management and planning of landscapes and organizes European co-operation on landscape issues with non-member states. The Convention was signed by Georgia in 12.05.2010. The main approach of this program is to identify each landscape forms and structures in the country: types of territories, social perceptions and ever-changing natural, social and economic forces. Once this identification work has been completed and the landscape quality objectives set, the landscape can be protected, managed or developed. The main aim of this convention is to reveal and sustain the great diversity of the interactions between humans and their environment, to protect living traditional cultures and preserve the traces of those which have disappeared, these sites, called cultural landscapes, have been inscribed on the UNESCO's World Heritage List. WWF of Georgia started project on natural heritage area determination in 2012.

Urban environment protection is actual when intervention of some functions of habitat takes place in an urban area. The protection of rural areas is not implemented so far. The problem remains for the species, which are growing in rural habitats and on arable lands mixed with field crops have different assessment to threats (Akhalkatsi et al. 2012). These species are depending in their existence to the monitoring of arable lands, which crop will be sown, how will be transformed field crop to pasture or hay meadow, or what kind of herbicides and mineral fertilizers will be used in the field. The governmental institutions should control the processes which might bring to the genetic erosion of CWRs having high value of conservation. In this case the legislation bases should be effective to control local farmers not affect CWRs with ecologically unsuitable for this species actions in the field leading to changing in technology of field cultivation methodology and leading to disturbances of wild weed species of high conservation value.

Climate change impacts are forecasted to lose 52%±12.1 of European vertebrates and plants within existing terrestrial protected areas by 2080 (T-PVS/Inf (2009)10 rev). Effective biodiversity conservation requires the identification and management of stationary refugia, or range retention areas (where species are most likely to survive despite climate changes), displaced refugia (where species are able to find suitable conditions after being displaced by climate change), and areas of high connectivity (allowing species to track climate changes through dispersal; Araújo 2009). From the habitat types flatland areas are more reflected by climate change. High altitude habitats may gain species at the expense of the loss of cold-adapted species, some of which are narrow endemics. The safeguarding of new conservation lands freshwater and marine habitats as well as refugia and corridors to upland habitats would allow the establishment of migrating species in the long-term. An integrated policy for mitigation of climate change impacts on biodiversity requires that current approaches for the management of protected areas should be revised.

Transboundary Protected Areas (TBPAs) are recognised by IUCN World Commission on Protected Areas' (WCPA) as conservation initiatives for National Parks, Conservation and Development Areas, and Transboundary Migratory Corridors. TBPAs are managed cooperatively between two or more countries or the national sub-units. TBPAs are of significant biodiversity importance as large protected areas, which are effective for allowing greater migration of species, especially fauna, maintenance of landscape connections, where animals, plants, and ecological processes, including the human being, can move freely from one habitat to another. TBPAs are also important for adapting to climate change by linking landscapes and allowing ecological processes to take place in fragmented ecosystems. TBPAs allow for greater control of pest species or alien invasive species, poaching and illegal trade across boundaries, reintroduction of large species. The south boundary of Georgia with Turkey was protected long time by military and the territories are actual for creation of TBPAs in Javakheti, Meskheti and Adjara.

4. Action Plan

1. The following actions should be considered as agenda for conservation of habitats in Georgia: (1) to harmonize habitat and species lists through co-ordinate interpretation of the habitat types included in the lists; (2) to create relevant data for areas of special conservation interest and make available to the public, including mapping of designated areas on a Pan-European scale, compatible with geographical information systems and available on the Internet; (3) strengthen the legal status for recognition and protection of the areas by national government; (4) incorporate development of the Natura2000/Emerald networks into European Union development assistance programs, namely through European Union accession and neighborhood policies; (5) strengthen existing guidance and mechanisms for reporting and implementation with a view to being able to react to non-compliance with infringement procedures, similar to the European Union procedures.
2. As a next step will be done acceptance of Natura2000 priority habitats by government and the creation of designating SCI by scientific assessment of threat status and distribution of mentioned habitats at national level. While doing this, it is necessary to take into consideration ecological quality of habitats, degree of representatively, size and density of the population of threatened species, degree of isolation, determine umbrella species, etc. After the site has been designates as SCI, member state has six years to declare it as SAC. The most endangered sites have to be protected first. During this six year period member state has to gradually implement different measures for the protection of these areas. Additionally, connectivity between Natura2000 sites and other areas of conservation need to be further improved, namely thought wider countryside measures;
3. The Emerald Network projects should conduct following activities: (1) Draw up and implement management plans which will identify both short- and long-term objectives; (2) Clearly mark the boundaries of ASCIs on maps; and, as far as possible, on the ground; (3) Conduct training of national multidisciplinary Emerald teams; (4) Provide the evaluation of threats in the chosen 17 ASCIs of the Emerald Network; (5) Do description of selected areas of special conservation interest using the Standard data form of the Emerald/Natura 2000 software which are fully compatible with each other.
4. Each planned possibly threatening activity in the Natura2000/Emerald sites has to be assessed from the nature protection point of view. Also, the public has to be involved in this assessment. It is necessary to avoid any activity that can negatively influence on the ecologically important area, except in the cases of prevailing public interest. In those

cases, activities are approved, but with determination of compensatory measures that are primarily concerning the designation of substitute protected area at the other location.

5. Sometimes certain activities have to be restricted or stopped where they are a significant threat to the species or habitat types for which the site is being designated as a Natura2000 site. Keeping species and habitats in good condition is not necessarily incompatible with human activities; in fact many areas are dependent upon certain human activities for their management and survival, such as agriculture. The European Commission invites partnership with small and medium sized enterprises (SMEs) at the local level to support Natura2000 sites in activities such as eco-tourism. The EU member states are responsible for ensuring that all Natura2000 sites are appropriately managed by conservation authorities in each country. It will be future perspective to provide guidelines to support SAC areas as conservation units for eco-tourism activities in different regions of Georgia.

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ABBREVIATIONS USED IN THE TEXT

ASCI's - Emerald network of Areas of Special Conservation Interest
BMZ - German Federal Ministry for Economic Cooperation and Development
BPS - Biodiversity Protection Service
CBD - Convention of Biological Diversity
CoE – Council of Europe
CWRs – Crop Wild Relatives
EEA – European Environmental Agency
EIB - European Investment Bank
ENPI - European Neighbourhood and Partnership Instrument
EU – European Union
EUNIS - European Nature Information System
GEF - Global Environment Facility
GIS - Geographic Information System
GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit
GPAP - Georgian Protected Areas Programme
HELCOM - Helsinki Commission
IBAs - Important Bird Areas
IUCN - International Union for Conservation of Nature
JNCC – Joint Nature Conservation Committee
MoE - Ministry of Environment Protection of Georgia
NACRES - Noah's Ark Centre for the Recovery of Endangered Species
NBSAP - National Biodiversity Strategy and Action Plan
SAC - Special Areas of Conservation
SCI - Site of Community Interest
SMEs - Small and Medium sized Enterprises

TBPAs - Transboundary Protected Areas
UNEP - United Nations Environment Program
UNESCO - United Nations Educational, Scientific and Cultural Organization
WCPA - World Commission on Protected Areas'
WWF - World Wildlife Fund

Annex I

Table 1. The list of priority habitats of Natura 2000 Network in Georgia. (Habitats of Georgia 2012).

N	Code	Priority Habitats Natura2000
	1150*	Coastal lagoons
	2130*	Fixed coastal dunes with herbaceous vegetation (grey dunes)
	7110*	Mezo-oligotrophic marshes with sphagnum (*Sphagneta palustrae*)
	70GE01*	Tall grass marshes
	70GE02*	Low grass marshes
	70GE03*	Tussock sedge wetlands
	70GE04*	Short rhizome sedge marshes
	70GE05*	Long-rhizome sedge marshes
	8310*	Caves
	8340*	Rock and true glaciers
	9140GE*	Subalpine beech woods with *Acer* spp.
	9150GE*	Limestone beech forests (*Cephalanthero-Fagion*)
	91FCGE*	Beech forests with Colchic understory (*Fageta fruticosa colchica*)
	9180GE*	*Tilio-Acerion* forests of slopes, screes and ravines
	91D0*	Bog woodland
	91E0*	Alluvial forests
	91I0*	Xero-thermophyte oak forest
	91PP-GE*	Bichvinta Pine Forest *(Pinus pithyusa)*
	91TBGE*	Yew forest *(Taxus baccata)*
	9260CSGE*	Chestnut forest (*Castanea sativa*)
	92ZCGE*	Zelkova forest (*Zelkova carpinifolia*)
	92BCGE*	Forest with Boxwood (*Buxus colchica*)
	9BCGE*	Kolhketi relic broad-leaved mixed forest
	9AOWGE*	Arid open woodlands
	9BFGE*	Sub-alpine birch krummholz

ЭКОЛОГИЧЕСКИЕ И ПРАВОВЫЕ АСПЕКТЫ ОХРАНЫ ЛЕСОВ ОТ ПОЖАРОВ В СИСТЕМЕ УСТОЙЧИВОГО РАЗВИТИЯ РЕСПУБЛИКИ БЕЛАРУСЬ

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Summary This paper centers on analysis of fire behavior and fire prevention, detection and extinction in the total forest area and covers various points of forest fire protection and normative and legal aspects of the sustainable forest management system.

Key words: total forest area, fires, forest protection, environmental safety, normative and legal basis.

В Республике Беларусь леса занимают 38,8% территории и являются одним из уникальных природных ресурсов и важнейших национальных богатств, имеют большое значение для устойчивого социально-экономического развития страны. Располагаясь на водоразделе Балтийского и Черноморского бассейнов, белорусские леса являются важным компонентом экологического каркаса региона и представляют большую ценность как средообразующий, водорегулирующий и природоохранный фактор, что обусловливает то высокое внимание, которое уделяется в стране решению проблем охраны лесов от пожаров.

В видовом составе лесов преобладают хвойные породы (59,8%), в том числе сосна обыкновенная (*Pinus sylvestris L.*) – 50,4% и ель европейская (*Picea abies (L.) Karst*) – 9,4%. В силу своего породного, структурного состава и сильного антропогенного воздействия леса на территории Беларуси являются потенциально пожароопасными. В лесном фонде также значительная часть лесов произрастает на песчаных и супесчаных почвах в условиях недостаточного увлажнения (лишайниковые, вересковые и мшистые типов леса), имеются большие площади осушенных лесов и выработанных торфяников, которые характеризуются повышенной пожароопасностью.

К настоящему времени вследствие аварии на Чернобыльской АЭС 1,82 млн. га лесного фонда представлены радиоактивно загрязненными лесными экосистемами, последствия пожаров в которых могут ухудшить экологическое состояние обширных регионов, что является серьезной международной проблемой. Признано, что именно перенос радионуклидов с дымами и золой радиоактивных лесных пожаров, генерирующих открытые источники ионизирующего излучения с высокими уровнем и массой радиоактивных отходов на 1 га лесной территории, является одним из путей их миграции на большие расстояния [1].

В лесном фонде к I классу природной пожарной опасности отнесено 6,7%. II - 26,1%, III - 34,5%. IV - 25,7% и V - 7,0% лесных земель. Средний класс природной пожарной опасности лесов – 2,7.

Лесные пожары являются одним из наиболее влиятельных природных факторов, оказывающих негативное воздействие на лесные экосистемы. В экстремальные по метеорологическим условиям годы пожары охватывают в лесном фонде Беларуси, расположенном в центре европейского континента, значительные площади нанося при этом как прямой материальный ущерб, так и косвенный ущерб, проявляющийся в снижении экологических функций лесов.

На территории лесного фонда Республики Беларусь на протяжении 1959–2011

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годов возникло 132,6 тыс. пожаров на общей площади 197,3 тыс. га (Рис. 1).

Средняя площадь одного пожара, которая является показателем оперативности его обнаружения и ликвидации, составила 1,5 га, при минимуме 0,16 га и максимуме 6,93 га.

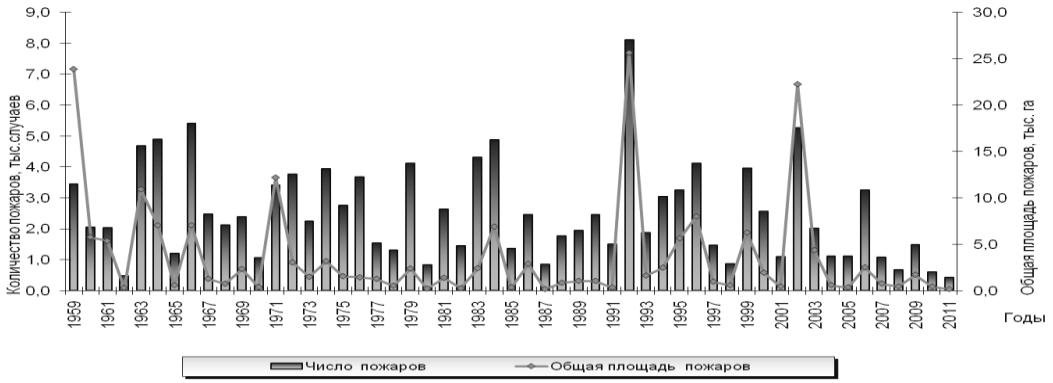

Рис. 1. Динамика пожаров на территории лесного фонда Республики Беларусь за 1959–2011 гг.

Минимальное число лесных пожаров произошло в 1962 г. Экстремально засушливым годом для Беларуси оказался 1992 г., когда на ее территории сложилась чрезвычайная лесопожарная ситуация и был зарегистрирован 8121 случай возникновения лесных пожаров, а пройденная ими площадь составила свыше 25,6 тыс. га. В 2011 году благодаря успешной организации охраны лесов от пожаров отмечена минимальная (156 га) площадь лесных пожаров на протяжении последних двадцати лет.

В лесном фонде Беларуси на протяжении 1959-2011 гг. максимум по количеству возникновения пожаров и пройденной ими площади наблюдается 2-3 раза на протяжении каждого десятилетия.

Причиненный пожарами в лесном фонде Республики Беларусь на протяжении 1975-2011 гг. ежегодный материальный и экологический ущерб составил, в среднем, около 900 тыс. долларов США.

Охрана лесов от пожаров направлена на их предотвращение, своевременное обнаружение и ликвидацию.

Министерство лесного хозяйства, как республиканский орган государственного управления в области использования, охраны, защиты лесного фонда и воспроизводства лесов, при поддержке Правительства реализует комплекс мер по предупреждению пожаров в лесах, своевременному их обнаружению и ликвидации. Комплекс мер включает в себя мероприятия, направленные на научное, финансовое, материально-техническое, организационное и кадровое обеспечение лесопожарных служб и государственной лесной охраны, организацию эффективного взаимодействия с местными органами власти, заинтересованными ведомствами, местным населением.

Введено в действие лесопожарное районирование территории Беларуси. В его основу положен региональный комплексный показатель потенциальной опасности возникновения и распространения лесных пожаров, учитывающий ряд факторов: класс природной пожарной опасности лесов, лесистость региона, уровень горимости лесов, плотность населения региона, степень радиоактивного загрязнения территории. По природно-климатическим, почвенно-гидрологическим, лесопирологическим, эколого-экономическим, организационно-хозяйственным, антропогенным и другим условиям территория Беларуси разделена на три лесопожарных пояса (Рис. 2).

Внедрение лесопожарного районирования в практику охраны лесов от пожаров позволяет сопоставлять территориальные единицы региона по потенциальной пожарной опасности лесов в разрезе юридических лиц, ведущих лесное хозяйство, обоснованно планировать и реализовывать виды и объемы противопожарных мероприятий, более эффективно использовать средства, выделяемые на охрану лесов от пожаров, минимизировать затраты.

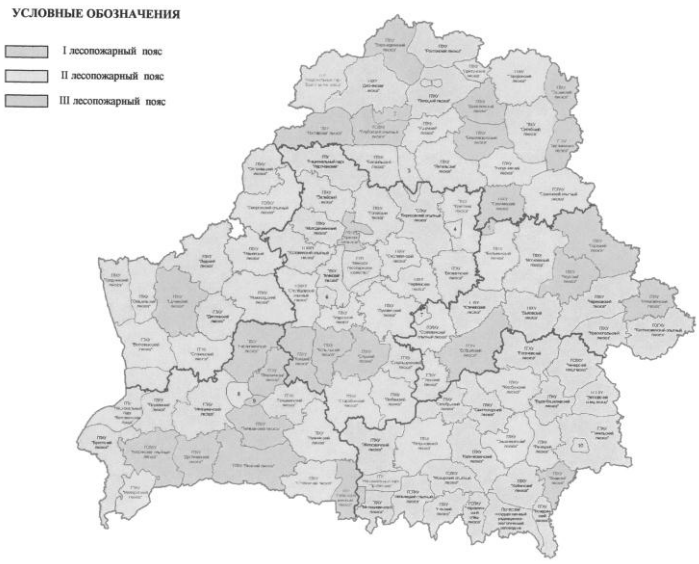

Рис. 2. Карта лесопожарного районирования территория Беларуси

В настоящее время на территории Республики Беларусь определение класса пожарной опасности лесов по условиям погоды осуществляется национальным Гидрометеоцентром по шкале загораемости лесов Н.А. Диченкова на основании данных, получаемых со всех метеостанций республики. Информация за последние сутки и краткосрочный (до 3-х дней) прогноз загораемости лесов по областям и районам республики в виде изолиний различной окраски по классам пожарной опасности наносится на синоптические карты и оперативно передается органам лесного хозяйства.

Представленные сведения дают возможность юридическим лицам, ведущим лесное хозяйство, регламентировать работу служб охраны лесов от пожаров, своевременно сосредоточить силы и средства пожаротушения в местах с повышенной опасностью возникновения и распространения пожаров.

Мониторинг и прогнозирование лесных пожаров на территории Беларуси осуществляется в соответствии с СТБ 1408-2003 «Безопасность в чрезвычайных ситуациях. Мониторинг и прогнозирование лесных пожаров» [2].

Существующая в Республике Беларусь система обнаружения лесных пожаров основана на осуществлении визуальных наблюдений с летательных аппаратов (авиапатрулирование), а также с пожарно-наблюдательных вышек и мачт, дистанционного видеонаблюдения и наземного патрулирования работников государственной лесной охраны общей численностью 15,4 тыс. человек.

В лесном фонде Республики Беларусь в настоящее время реализуется и к 2016 году будет создана единая автоматизированная информационная система слежения и раннего обнаружения лесных пожаров дистанционными методами с использованием средств видеонаблюдения на базе общереспубликанской системы ПНВ и мачт, обеспечивающей

замкнутость контуров наблюдения в лесном фонде, которая обеспечит оперативность обнаружения лесных пожаров.

В настоящее время на территории лесного фонда Беларуси применяется также космический (на основе искусственных спутников Земли) способ мониторинга лесных пожаров, позволяющий обеспечить после запуска 22 июля 2012 года Белорусского космического аппарата дистанционного зондирования Земли получение данных о возникновении, масштабах пожаров и их последствиях 4 раза в сутки.

Анализ площади пожаров в лесном фонде к моменту их обнаружения показывает, что на протяжении последнего десятилетия (2002 – 2011 гг.) 78% пожаров имели площадь до 0,10 га и только 3,2% пожаров ко времени их обнаружения достигали площади более одного гектара (табл. 1).

Таблица 1. Распределение лесных пожаров по площади в момент обнаружения

Площадь пожара, га	до 0,05	0,06–0,10	0,11–0,50	0,51–1,00	1,01–5,00
Число пожаров, %	56,7	21,2	15,2	3,7	3,2

Эффективность работы лесопожарных служб в значительной степени определяется их оснащенностью специальными средствами пожаротушения, транспорта и связи, от которых зависят продолжительность тушения и площадь пожара к моменту его локализации.

Анализ многолетних (2002-2011 гг.) статистических данных о сроках тушения пожаров после обнаружения их в лесном фонде показал, что основное их количество (93,4%) ликвидируется в течение суток. Продолжительность тушения пожаров в большинстве случаев (51,6%) составляла до 1 часа, 14,5% пожаров было ликвидировано в течение 1-2, 18,4% – 2-6, 6,4% – 6-12 часов и 2,5% в течение 12-24 часов. Ликвидация только 6,6% почвенных пожаров производилась в срок от 1 до 5 суток (табл.2).

Таблица 2. Распределение числа лесных пожаров по срокам тушения после обнаружения

Срок тушения	Часы						Сутки	
	до 0,5	0,6-1,0	1,1-2,0	2,1-6,0	6,1-12,0	12,1-24,0	1-2	3-5
Число пожаров, %	34,1	17,5	14,5	18,4	6,4	2,5	3,7	2,9

Очень важным показателем оперативности локализации пожара является прирост его периметра за время тушения. Данные таблицы 3 свидетельствуют о том, что около 74,7% обнаруженных пожаров было ликвидировано лесопожарными службами на площади до 0,10 га, 13,3% от общего числа пожаров к моменту их ликвидации имели площадь свыше одного гектара, среди них 3,2% верховых пожаров распространялись на площади более 5,0 га.

Таблица 3. Распределение лесных пожаров по площади после ликвидации

Площадь пожара, га	до 0,10	0,11-0,50	0,51-1,00	1,01-5,00	5,01-10,00	10,01-50,0	50,1-100,0
Число пожаров, %	56,9	17,8	12,0	10,1	1,5	1,5	0,2

Все это свидетельствует о высокой оперативности и эффективности работы лесопожарных служб и государственной лесной охраны Беларуси.

Охрана лесов от пожаров на территории страны осуществляется в соответствии с действующими техническими нормативно-правовыми актами (ТНПА) и законодательными актами Республики Беларусь.

Противопожарное обустройство лесного фонда осуществляется на основании лесопожарного районирования территории Беларуси в соответствии с СТБ 1582-2005 «Устойчивое лесоуправление и лесопользование. Требования к мероприятиям по охране леса» [3] и ТКП 193-2009 «Правила противопожарного обустройства лесов Республики Беларусь» [4].

Основополагающим ТНПА в области пожарной безопасности в лесном фонде являются ППБ 2.38-2010 «Правила пожарной безопасности в лесах Республики Беларусь» [5].

Охрана лесов от пожаров в зонах радиоактивного загрязнения на территории Беларуси осуществляется на основании вышеназванных ТНПА с учетом Правил ведения лесного хозяйства в зонах радиоактивного загрязнения [6].

Охрана лесов от пожаров на территории Республики Беларусь осуществляется с учетом их экономического, экологического и социального значений путем применения комплексной системы организационных, профилактических мероприятий, мероприятий по ликвидации лесных пожаров, выполняемых юридическими лицами, ведущими лесное хозяйство.

Согласно Лесному кодексу Республики Беларусь [7] государственное управление в области использования, охраны, защиты лесного фонда и воспроизводства лесов осуществляют Президент Республики Беларусь, Правительство Республики Беларусь, специально уполномоченный республиканский орган государственного управления в области использования, охраны, защиты лесного фонда и воспроизводства лесов (Министерство лесного хозяйства Республики Беларусь), местные исполнительные и распорядительные органы и другие государственные органы в соответствии с законодательными актами Республики Беларусь.

Положения, правила, инструкции и указания государственных органов Республики Беларусь в части охраны лесов от пожаров обязательны для всех ведомств, государственных, кооперативных, общественных предприятий, организаций, учреждений и граждан.

Охрана лесного фонда от пожаров является обязанностью юридических лиц, ведущих лесное хозяйство в полном соответствии с Лесным кодексом Республики Беларусь.

В целях осуществления высокоэффективной охраны лесов от пожаров в Республике Беларусь в настоящее время функционирует следующая организационная структура управления охраны лесов от пожаров (Рис. 3).

Организацию и ведение работ по охране лесов от пожаров на республиканском и территориальном уровнях осуществляют специально уполномоченный республиканский орган государственного управления в области использования, охраны, защиты лесного фонда и воспроизводства лесов, его соответствующие структурные подразделения, а также юридические лица, ведущие лесное хозяйство

Государственный контроль за охраной лесного фонда также осуществляют Министерство природных ресурсов и охраны окружающей среды Республики Беларусь, Государственная инспекция охраны животного и растительного мира при Президенте Республики Беларусь и их территориальные органы, а также иные государственные

органы в соответствии с нормативными и правовыми актами Республики Беларусь.

Мероприятия по охране лесов от пожаров проводятся с соблюдением следующих основных принципов.

– обеспечение устойчивости лесов, их способности в максимальной степени выполнять свои природоохранные и средообразующие функции;

– сохранение биологического разнообразия;

– обеспечение рационального использования лесных ресурсов и экологической безопасности;

– применение многоуровневой высокоэффективной системы профилактики и ликвидации лесных пожаров на основе совершенствования и модернизации служб охраны лесов, оснащенных современными средствами оперативного обнаружения и борьбы с различного вида лесными пожарами;

– ответственности за нарушение лесного законодательства и законодательства об охране окружающей среды.

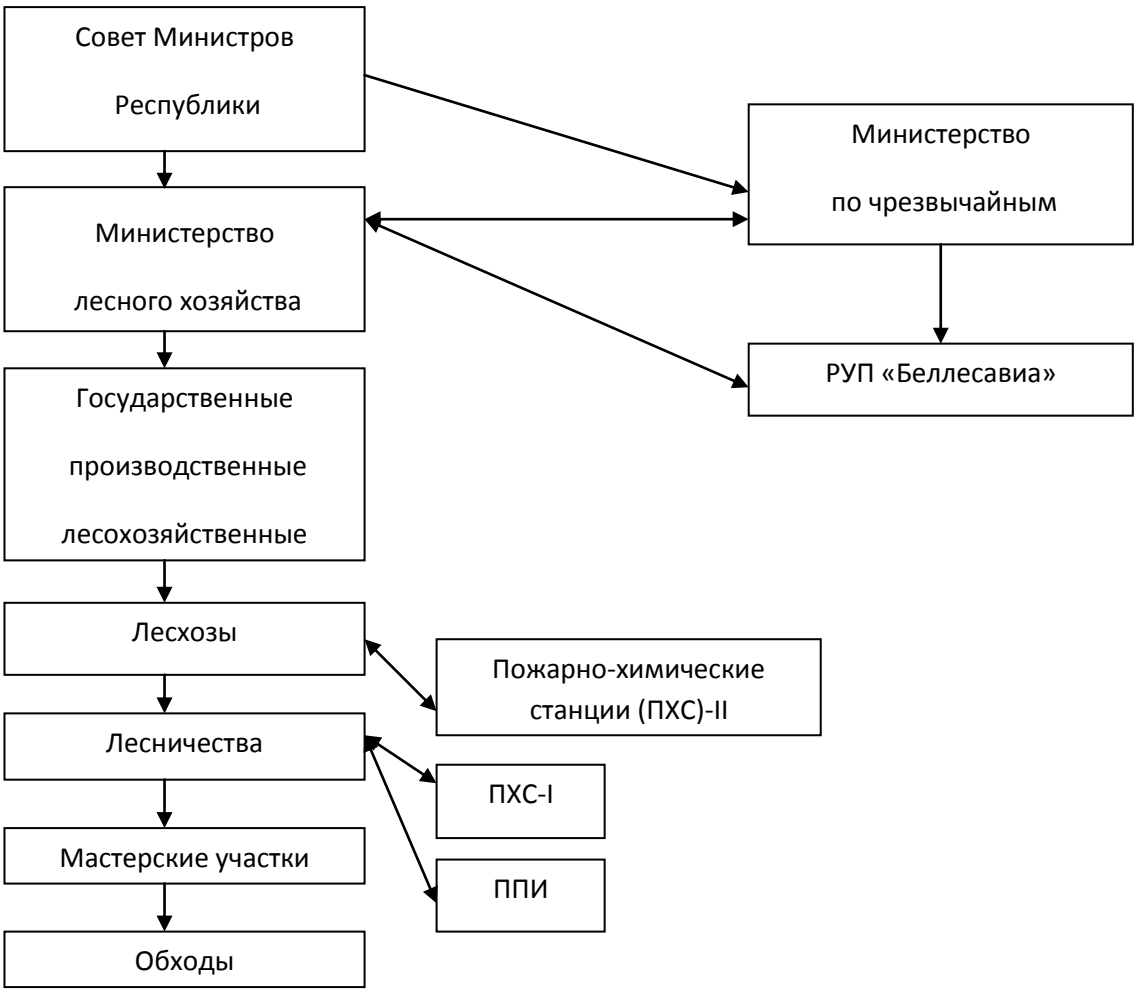

Рис. 3. Организационная структура управления охраной лесов от пожаров в Республике Беларусь

Для обеспечения наземной охраны лесов от пожаров, в порядке, определяемом Президентом Республики Беларусь, создана государственная лесная охрана Республики Беларусь. Структура, обязанности и права государственной лесной охраны регламентируются Лесным кодексом и Положением о государственной

лесной охране.

Объем проводимых мероприятий по охране лесов от пожаров определяется проектом организации и ведения лесного хозяйства юридического лица, ведущего лесное хозяйство, на данный ревизионный период, составленным при лесоустройстве в соответствии с Генеральным планом противопожарного устройства лесов Республики Беларусь, с учетом лесопожарного районирования территории страны, а также класса пожарной опасности лесов по условиям погоды.

Одним из ключевых звеньев в области охраны лесов от пожаров является организация эффективного взаимодействия с территориальными органами Министерства по чрезвычайным ситуациям Республики Беларусь. С этой целью ежегодно разрабатываются совместные планы действий на пожароопасный сезон и привлечения при необходимости техники и людских ресурсов из других отраслей народного хозяйства для ликвидации лесных пожаров.

Важной межгосударственной проблемой к настоящему времени является разработка и согласование нормативно-правовой базы по трансграничному противопожарному обустройству лесных территорий, оперативному обнаружению лесных пожаров и координации действий по их ликвидации.

Заключение

В Республике Беларусь с ее ограниченными природными ресурсами охрана лесов от пожаров и ликвидация их последствий являются важнейшими составными частями мероприятий по сохранению природного комплекса, обеспечивающими устойчивость лесных экосистем и сохранение биологического разнообразия живой природы.

В настоящее время проводимый на территории лесного фонда страны комплекс противопожарных профилактических мероприятий, использование современных средств раннего обнаружения и оперативной ликвидации пожаров, в соответствии с действующим лесным законодательством и законодательством об охране окружающей среды, обеспечивает минимизацию масштабов лесных пожаров и причиняемого ими материального и экологического ущерба.

Эффективное решение проблемы противодействия лесным пожарам отвечает интересам всех стран. В целях разработки перспективной стратегии международного сотрудничества в этой сфере необходимо заключение соответствующих соглашений, организация целенаправленной и планомерной работы по обмену знаниями, технологиями и передовым опытом в области охраны лесов от пожаров, в том числе совершенствование технических нормативно-правовых актов.

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О ПРАКТИКЕ ПРИМЕНЕНИЯ ЛЕСНОГО КОДЕКСА РЕСПУБЛИКИ БЕЛАРУСЬ

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Резюме: The practice of the Forest Code of the Republic of Belarus was analised and was discussed the need to make changes and additions to the law relating to forest management, the size of forest land, the division of forests into groups and categories of protection.

Ключевые слова: Forest Code, forest management, forest protection categories, forest land.

Практика организации и ведения лесоустройства, лесного хозяйства, осуществления лесопользования, охраны и защиты лесов, основанная на положениях и нормах Лесного кодекса Республики Беларусь принятого в 2000 году, свидетельствует о достаточно эффективной системе лесоуправления и лесных отношений, что подтверждается положительной динамикой развития лесных ресурсов, полным обеспечением потребностей республики в лесных товарах и услугах за счет собственных ресурсов, сохранением окружающей природной среды и другими факторами.

Леса являются достаточно сложным объектом управления, прежде всего из-за постоянно происходящих в них изменений, обусловленных естественным ростом и развитием насаждений, хозяйственной деятельностью. В последнее десятилетие существенное воздействие на леса оказывают стихийные (ветровалы, засухи, буреломы) и биотические (болезни, вредные насекомые) факторы. В этой связи таксационная характеристика участков леса, определяемая на основе одноразовой инвентаризации лесного фонда при проведении базового лесоустройства с запроектированными лесохозяйственными мероприятиями на десятилетний период, существенно может изменяться уже в первые годы после проведения лесоустройства и требует внесения соответствующих изменений в лесоустроительные материалы.

До 2006 года данная проблема решалась путем применения технологии непрерывного лесоустройства, при которой специалисты лесоустройства ежегодно после базовой инвентаризации обследовали в натуре соответствующие участки и, при необходимости, вносили коррективы Однако в связи с уменьшением бюджетного финансирования данная технология была отменена. На практике лесхозы в настоящее время направляют в массовом порядке в лесоустроительное предприятие на согласование материалы с изменившейся таксационной характеристикой участков леса для проведения в них тех или иных видов рубок, поскольку согласно части второй

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[47] (РУП «Белгослес»)

статьи 25 Лесного кодекса лесоустроительные проекты и другие документы лесоустройства являются обязательными нормативно-техническими документами при ведении лесного хозяйства.

В сложившейся ситуации возможность внесения изменений и дополнений в лесоустроительные проекты, предусмотренная в части третьей статьи 25 на практике не может быть реализована, поскольку это будет непрерывный процесс корректировки и проведения государственной экологической экспертизы проектов.

Соблюдение требований статьи 25 Лесного кодекса Республики Беларусь об обязательности исполнения проектов находится под строгим надзором контролирующих органов республики и в случаях отклонений от лесоустроительных материалов, допущенных лесхозом, к нему принимаются соответствующие административные или иные строгие меры, включая возбуждение дел в судебном порядке.

Обобщив практику правоприменения в этом отношении в других странах можно сделать вывод о чрезмерной зарегулированности данного вопроса в нашей республике. Специалисты лесного хозяйства должны иметь право принимать в необходимых случаях оперативные решения на местах по проведению тех или иных лесохозяйственных мероприятий руководствуясь действующими нормативными техническими документами по лесному хозяйству в рамках общих норм лесопользования и воспроизводства лесов установленных в лесоустроительном проекте. В этой связи предлагается внести в статью 25 Лесного кодекса Республики Беларусь следующие изменения и дополнения:

- в части второй вместо слов «обязательными нормативно-техническими документами» записать «основой для планирования и ведения лесного хозяйства»;

- часть третью статьи 25 принять в следующей редакции: «Использование лесоустроительных проектов, а также внесение в них изменений и дополнений осуществляется в порядке, установленном республиканским органом государственного управления в области использования, охраны и защиты лесного фонда и воспроизводства лесов».

Одним из ключевых положений Лесного кодекса Республики Беларусь является деление лесов на группы и категории защитности лесов (статья 16). В процессе лесоустройства осуществляется распределение лесов по целевому назначению с уточнением границ и площади тех или иных категорий защитности, проектируются соответствующие мероприятия. Общая тенденция, которую необходимо отметить - это последовательное увеличение площади лесов первой группы достигшей 51,4%. Наиболее представленными в ней являются водоохранные (16,2%), санитарно-гигиенические и оздоровительные леса (16,9%). Интенсивно расширялись в последнее десятилетие особо охраняемые природные территории в лесном фонде, площадь

которых достигла более 1,3 млн.га (14,5%). Соответственно уменьшается площадь эксплуатационных лесов, доля которых составляет 48,6%.

Складывающееся соотношение площади лесов первой группы и эксплуатационных лесов не совсем благоприятно с точки зрения экономики. В Литве, например, эксплуатационные леса составляют около 70%, в других странах также доминирует эта категория лесов.

На практике имеют место коллизии, связанные в основном с установлением при лесоустройстве границ запретных полос лесов по берегам рек, озер, водохранилищ и других водных объектов в водоохранных зонах, выделенных после принятия Лесного кодекса согласно постановления Совета Министров Республики Беларусь от 21 марта 2006 года №377. Границы запретных полос, также выделенных решениями Правительства в более ранний период, и границы водоохранных зон, как правило, пересекаются.

Полагаем целесообразным упразднить категорию защитности «запретные полосы лесов по берегам рек, озер, водохранилищ и других водных объектов» и выделить вместо нее «водоохранные полосы лесов по берегам рек, озер, водохранилищ» с уточнением их ширины в соответствующих нормативных актах.

Из других особенностей можно отметить различия в ширине полос леса выделяемых в составе защитных лесов первой группы вдоль автомобильных дорог согласно статьи 16 Лесного кодекса (250 м) и выделяемых придорожных полос шириной 100 м согласно статьи 24 Закона Республики Беларусь от 2 декабря 1994 г. № 3434-XII «Об автомобильных дорогах и дорожной деятельности». Целесообразно принять единую ширину придорожных полос леса (100 м) с отнесением их к особо защитным участкам вместо защитных полос лесов вдоль автомобильных дорог и железнодорожных линий.

Считаем также целесообразным в целом упорядочить общую схему функционального деления лесов. Такое определение, как «группа лесов» утратило свое значение и уже не применяется в лесном законодательстве как сопредельных, так и других стран. Первая группа лесов в принципе является объединением различных категорий защитности со сходным правовым режимом охраны и использования, однако он весьма отличается, например, в заповедниках и запретных полосах лесов.

Вторая группа лесов представлена только одной целевой категорией – эксплуатационными лесами, т.е. по сути это не группа.

Учитывая вышеизложенное и международную практику функционального деления лесов можно рекомендовать следующий вариант.

В статье 16 Лесного кодекса Республики Беларусь «Деление лесов по целевому назначению» исключить группы лесов, а также запретные полосы лесов, защитные полосы вдоль автомобильных и железных дорог и образовать:

- особо охраняемые леса (леса на особо охраняемых природных территориях; леса особо ценных участков лесного фонда и т.п.);

- защитные леса (противоэрозионные, водоохранные полосы лесов по берегам рек, озер, водохранилищ и других водных объектов (взамен запретных полос и т.п.);

- рекреационные леса (зеленые зоны, городские леса и т.п.);

- эксплуатационные леса.

Подобные схемы деления лесов приняты в странах Прибалтики, Украине, Польше и других.

Предлагаемое упорядочение деления лесов оптимизирует соотношение площади различных категорий лесов природоохранного и хозяйственного назначения.

Целесообразно также рассмотреть некоторые другие положения Лесного кодекса.

Введенная в 2004 году в Лесной кодекс Республики Беларусь статья 45-1 «Концессия лесов (участков лесного фонда)» не находит применения. Концессия, как это принято в ряде стран, предполагает предоставление собственником лесов (государством) участков лесного фонда и функций хозяйственного управления лесным фондом частному бизнесу, в том числе иностранному. Вместе с тем, в статье 21 «Право ведения лесного хозяйства» Лесного кодекса Республики Беларусь установлен исчерпывающий перечень юридических лиц, ведущих лесное хозяйство, обязанных выполнять согласно статьи 23 Лесного кодекса хозяйственные функции. На практике это реализуется вполне успешно. Полагаем, что статья 45-1 Лесного кодекса носит декларативный характер и ее целесообразно исключить.

В связи с изменяющимися экономическими условиями и интенсивным развитием рыночных способов реализации древесины целесообразно также уточнить содержание статьи 52 Лесного кодекса. В настоящее время и в перспективе уже нет необходимости утверждать Правительством размер лесосечного фонда. На практике утверждаемый размер лесосечного фонда полностью соответствует размеру расчетной лесосеки, определяемой при лесоустройстве и утверждаемой в соответствии со статьей 19 Лесного кодекса республиканским органом государственного управления в области использования, охраны и защиты лесного фонда и воспроизводства лесов по согласованию с Министерством природных ресурсов и охраны окружающей среды Республики Беларусь. Целесообразность утверждения размера лесосечного фонда Правительством была в условиях его централизованного распределения по различным отраслям и ведомствам. В настоящее время вопросы приобретения древесины регулируются соответствующими нормативными правовыми актами. Предлагается в этой связи исключить часть вторую статьи 52 Лесного кодекса Республики Беларусь.

НЕКОТОРЫЕ ПРОБЛЕМЫ РАЗВИТИЯ ПРАВА СОБСТВЕННОСТИ НА ЛЕС В РЕСПУБЛИКЕ БЕЛАРУСЬ

Е.В. ЛАЕВСКАЯ[48]

Summary This paper centers on analysis of legal regulations of forest property in Belarus. The author formulates legal propositions on possible forest property development on the base of the experience of different countries.

Key words: forest legal regulations, forest protection, forest property.

Правовое обеспечение развития форм собственности на лес является базой для построения системы управления лесами и лесным хозяйством любого государства.

В соответствии со ст.13 Конституции Республики Беларусь леса находятся в исключительной собственности государства. Данная новелла закреплена в 1996 году в новой редакции Конституции вполне последовательно, если учесть, что в Законе Республики Беларусь “О праве собственности на землю” (ныне утратил силу), который впервые после 1917 года предусмотрел возможность выпуска в частную собственность земельных участков, запрещалось приватизировать земли лесного фонда.

Указанная конституционная норма свидетельствует о политической воле и стремлении законодателя сохранить на ближайшую перспективу исключительно государственную собственность на леса в Республике Беларусь. Статья 13 Конституции Республики Беларусь получила свое дальнейшее закрепление в нормах Кодекса о земле (ст. 13), Лесного кодекса (ст.7). Государство, как исключительный собственник лесов, осуществляет владение, пользование, распоряжение лесами на основе норм Гражданского кодекса (раздел 2), Лесного кодекса и иных нормативных правовых актов лесного и земельного (в части земель лесного фонда и иных земель, занятых лесами).

Следует подчеркнуть, что в подавляющем большинстве государств мира (за исключением ряда стран, входящих в СНГ) законодательно закреплена возможность существования государственной и частной формы собственности на лес (в ряде случаев в федеративных государствах – собственности федерации и муниципальной - собственности административно-территориальных образований).

По данным различных источников доля частных лесов в странах мира различна: в Польше, Канаде - около 10%, Финляндии - около 60%, Швеции, Франции - около 80%, в США - еще более значительна (Петров А.П, 2001; Соколов В.И.).

Примечательно, что на основе принятия обновленного законодательства в 90-е годы прошлого века в ряде стран Европы, которые ранее входили в состав СССР в качестве союзных республик были проведены законодательные реформы, обеспечившие закрепление в законодательстве возможности существования и развития частной формы собственности на лес. В настоящее время в Литве частные леса составляют около 35%, а в Латвии и Эстонии - около 50%. В большинстве стран Центральной и Восточной Европы право собственности на лес в 90-е годы появилось на основе принятия нормативных актов (Законов о лесах), устанавливающих условия возврата лесных земель бывшим владельцам, которые в свое время в период

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деятельности демократических режимов в условиях национализации потеряли право собственности на лес. При этом в большинстве указанных стран законодательно закреплено ограничение на получение леса в собственность иностранными субъектами – физическими и юридическими лицами.

В Лесных кодексах Российской Федерации, Украины, Республики Молдова допускается существование частной собственности на лес (Козырева Г.Б, 2006). Так, в соответствии со ст.6 Лесного кодекса Республики Молдова “частная собственность на леса допускается в случаях посадки их в установленном законодательством порядке на землях, являющихся частной собственностью”. Согласно ст. 10 Лесного кодекса Украины леса в Украине могут находиться в частной собственности граждан и/или юридических лиц Украины.

В Республике Беларусь в Концепции устойчивого развития лесного хозяйства Республики Беларусь до 2015 года (в настоящее время утратила силу) поднимался вопрос о вещных правах на лес: на первом этапе реализации концепции предлагалось сохранить положение об исключительно государственной собственности на лес, на втором этапе (2005 г. и далее) - предлагалось организовать процесс передачи во владение фермерам небольших участков леса, расположенных среди сельскохозяйственных угодий. Таким образом, в концепции не ставился вопрос о передаче лесов в частную собственность, речь шла о формировании условий возникновения и существования ограниченных вещных прав на лес (ограничения основываются как на воле собственника, так и на определенных ограничениях, запретах, установленных законодательством).

В настоящее время Концепция устойчивого развития лесного хозяйства Республики Беларусь до 2015 года как нормативный правовой акт утратила силу в связи с принятием иных актов, однако, по мнению экспертов, вопрос о возможности развития вещных прав на лес в Республике Беларусь может иметь актуальность с учетом процессов либерализации бизнеса, формирования условий для развития частной формы собственности в различных сферах деятельности.

Научно обоснованное формулирование предложений по вопросу совершенствования вещных прав, в том числе на лес возможно только на основе оценки исторического и современного опыта стран по данной проблеме, тенденций развития законодательства как Республики Беларусь, так и иных государств, имеющих подобный опыт.

Анализируя вопрос о праве частной собственности на лес, автор не ставит перед собой задачу оценить природоохранную, лесоводственную эффективность той или иной формы собственности, поскольку имеются и позитивные, и негативные примеры хозяйствования в частных и государственных лесах, о чем неоднократно было отмечено в научной литературе разного времени. Общепринято, что не форма собственности на лес является определяющей в оценке (негативной или позитивной) устойчивости лесопользования и обеспечения доступа населения к лесным ресурсам. Принимая во внимание тот объективно существующий факт, что абсолютной частной собственности на лес, как и на иные природные ресурсы, нет ни в одной стране мира, государство законодательно ограничивает собственника в той или иной мере в правомочиях владения, пользования и распоряжения лесами, в том числе и в общественных интересах, в целях охраны окружающей среды и т.п.

Например, на X Мировом конгрессе (сентябрь 1991 г.) в Париже было признано, что рыночный механизм и частная собственность на леса применительно к лесосохранию не являются панацеей. Очевидно, что рыночные отношения должны сочетаться с мерами государственного регулирования, что же касается частного

лесовладения, то к таким мерам относятся различные нормы, ограничивающие собственника в распоряжении лесом как социально-экологическим благом. Следует отметить, что такие ограничительные нормы имеют давнюю историю и в настоящее время занимают значительное место в законодательствах европейских стран.

Исследователи отмечают, что в современных нормативных правовых актах зарубежных стран регламентация государством частнособственнического лесовладения осуществляется в двух основных направлениях, через ограничение рубок лесов, через обязанность лесовозобновления и защиты лесов (Краснова И.О, 1992).

Необходимость разрешения объективно существующей коллизии между общественными интересами сохранить лес как общественное благо и частными интересами получить от него максимальный доход, в условиях, когда реальный доход от леса можно получить через 30-40 лет после посадки, порождает стремление государства к введению множества законодательных ограничений. Эти ограничения, прежде всего, затрагивают распорядительные правомочия частного собственника, то есть правомочия, через которые проявляется сущность и специфика частной собственности на лес как особого вещного права. Распорядиться - означает определить юридическую судьбу леса независимо о воли других субъектов, в том числе при осуществлении рубок и иных видов лесопользования. Ограничения основываются на принципе, который закреплен в конституционных нормах зарубежных стран и развит в специальном законодательстве: осуществление права собственности на лес не должно наносить вреда окружающей среде, историко-культурным ценностям, ущемить права и защищаемые законом интересы других лиц.

Так, Лесным кодексом Франции закрепляется положение, в соответствии с которым все собственники осуществляют в отношении лесов . . . и земель, подлежащих облесению все права, вытекающие из собственности, с особыми ограничениями, предусмотренными настоящим кодексом и законодательством, с целью обеспечить биологическое равновесие в стране и удовлетворение потребности в древесине и других продуктах леса. Административные власти Франции могут в соответствии со ст.541-I Лесного кодекса объявить обязательным выполнение работ в определенных секторах. В случае уклонения частных собственников от выполнения работ государство может экспроприировать их собственность. Лесные массивы, сохранение которых необходимо с экологической точки зрения, могут быть объявлены охраняемыми в общественных интересах независимо от того, кто является их собственником.

В США лесозаготовки в частных лесах могут проводиться только с письменного разрешения органов лесной службы, в лесозаготовке может быть отказано в случае совершения ранее (в течение 3 прошлых лет) нарушений правил ведения лесного хозяйства; устанавливаются обязанности обеспечения естественного лесовозобновления (Краснова И.О, 1992).

Такие же ограничения предусмотрены в законодательствах Швеции и Финляндии. В Швеции лесная служба вправе даже потребовать преобразования низкокачественных сельскохозяйственных земель и бросовых земельных участков в лесные угодья за счет собственника. В Финляндии рубке предшествуют внесение залога в обеспечение последующего лесовозобновления, а в Германии обязательно разрешение на отчуждение лесного участка, причем следует отказ в выдаче такого разрешения, если в результате сделки произойдет бесхозяйственное уменьшение или раздробление участка и др (Петров А.П, 2001).

Интересен в этом смысле современный законодательный и правоприменительный опыт Литвы по передаче лесов в частную собственность. Этот процесс в Литовской Республике начался с 1991 года и был законодательно оформлен в Законе “О лесах”.

Современное лесное законодательство Литвы построено на принципе признания разнообразия форм собственности на леса при преобладании государственной формы.

К исключительной государственной собственности относятся: государственные заповедники, заповедники национальных и региональных парков, Куршско-Нярийский национальный парк, защитные леса в полосе шириной до 7 км от Балтийского моря и залива Куршю-марес, особо ценные рекреационные леса, научно-исследовательские и учебные объекты, леса I и II зон охраны курортов, городские леса, лесопарки, лесные генетические заповедники, питомники, семенные плантации.

Государство стремиться обеспечить развитие именно крупного лесовладения, поскольку в условиях последнего возможна организация интенсивного лесного хозяйства на научной основе.

Так, владения частных лесов не подлежат делению, если их площадь составляет менее 5 га. Преимущества в покупке леса имеют по закону собственники смежных владений.

Значительное внимание в законе уделено регламентации обязанностей собственника частных лесов. Он обязан обеспечивать охрану лесов от пожаров, защит от вредителей, болезней и других отрицательных факторов, своевременное и надлежащее воспроизводство срубленного леса, осуществлять лесопользование способами, содействующими уменьшению негативного воздействия на окружающую среду, рационально вести лесное хозяйство, поддерживать плодородие почвы, сохранять биологическое разнообразие лесов, вести учет и маркировку лесов.

Основой ведения лесного хозяйства, в том числе и в частных лесах, являются проект лесоустройства. Годовая норма рубки устанавливается для каждого собственника леса в соответствии с методикой, утвержденной Министерством ленного хозяйства. При этом собственники не имеют права превышать годовую норму пользования, за исключением случаев стихийных бедствий и недоиспользования нормы в предыдущие годы. Восстановление леса и лесоразведение обязаны осуществлять собственники за счет собственных средств.

Анализ законов (кодексов) о лесах Латвии, Эстонии, Польши, Швеции, Украины, США и других стран позволяет сделать вывод, что все без исключения государства, в которых на законодательном уровне закреплено право частной собственности на лес, вводят значительные ограничения правомочий владения, пользования и распоряжения собственников леса, принимая во внимание тот факт, что лес рассматривается в качестве общественного блага, требующего особой защиты и охраны.

Вместе с тем, хотелось бы обратить внимание на существенный момент, характеризующий процессы приватизации лесов в 90-е годы, способы возникновения права собственности на лес в зарубежных странах в этот период. Указанные страны в большинстве своем, прежде всего, сформировали частные леса, осуществив возврат земель, в том числе и занятых лесам, бывшим собственникам.

Предавая участки леса в собственность частных лиц, возвращая леса бывшим владельцам, государство решало, по мнению многих исследователей, не только политическую задачу (восстановление имущественных прав на леса бывшим собственникам), но и задачу экономическую. Речь идет о перераспределении материальных затрат по ведению лесного хозяйства, лесоразведению, лесоустройству, охране лесов. Эти значительные в материальном смысле затраты возлагались на собственника, что, как свидетельствуют многие исследователи данного вопроса, дает возможность государству направить материальные потоки на укрепление службы государственной лесной охраны, контроля в области лесопользования, в том числе и в частных лесах.

По нашему мнению, дискуссия о достоинствах и недостатках различных форм лесной собственности, основанная на множестве негативных примеров ведения лесного хозяйства как в частном лесовладении, так и на участках, принадлежащих государству, малопродуктивна. Частная собственность на лес закреплена в законодательствах большинства стран мира. Развитие рыночных преобразований в лесном комплексе основано на свободе выбора формы хозяйствования и формы собственности, в том числе на лес. Безусловно, внедрение любых правовых новаций в области вещных прав на лес требует серьезных исследований, и, прежде всего, экономических, с целью выявления негативных и позитивных сторон с учетом современного опыта приватизации лесов других государств.

Представляется, что радикальный способ формирования частных лесов – бесплатный возврат лесных угодий бывшим владельцам (по опыту Литвы, Латвии) не может быть применим в Республике Беларусь. В Литве, где советская власть была установлена значительно позже, чем в большинстве районов Беларуси, еще сохранились участки бывших лесовладельцев. В Республике Беларусь в большинстве своем эти угодья претерпели существенные изменения (уничтожены во время войн и послевоенных преобразований), ряд территорий загрязнены радионуклидами. Учитывая это, попытка передачи лесов бывшим владельцам может существенно повысить социальную напряженность и не является эффективной.

Иной способ появления частных лесов за счет продажи (приватизации) участков государственных лесов теоретически возможен, однако представляется малоперспективным в ближайшие годы в Республике Беларусь, поскольку требует значительных изменений в законодательстве – прежде всего, в Конституции, которая установила в ст. 13 право исключительной государственной собственности на леса.

Вместе с тем, по мнению экспертов, в Республике Беларусь имеют место предпосылки для появления в определенной перспективе лесов на участках земли, предоставляемой в пожизненное наследуемое владение согласно Кодексу о земле.

Стратегия снижения выбросов и увеличения абсорбции поглотителями парниковых газов в Республике Беларусь на 2007 - 2012 годы в качестве меры по увеличению стоков парниковых газов предусматривает увеличение площади лесов за счет лесозаращивания низкопродуктивных земель, выведенных из сельскохозяйственного оборота. По информации из официальных источников площади пахотных земель с уровнем плодородия до 25 баллов включительно составляют в республике около 1,2 млн. га, количество подобных земель имеет тенденцию к увеличению, принимая во внимание объективность климатических изменений. Облесение низкопродуктивных земель, выведенных из сельскохозяйственного оборота, требует значительных вливаний за счет средств государственного бюджета в условиях существования исключительной государственной формы собственности на леса. В то же время история знает примеры, когда облесение малопродуктивных в смысле сельскохозяйственного использования земель решалось за счет стимулирования землевладельцев к лесовыращиванию. Указанная работа достаточно успешно проводилась в России на основе Положения о сбережении лесов России 1888 года, при этом землевладельцы освобождались на 30 лет от уплаты земельного налога (Лаевская Е.В, 1994). Подобная практика стимулирования государством частных лесовладельцев и землевладельцев известна и в современной Швеции.

Представляется, что лесовыращивание на низкопродуктивных землях, выведенных из сельскохозяйственного оборота, в том числе и в целях реализации Стратегии снижения выбросов и увеличения абсорбции поглотителями парниковых газов в Республике Беларусь, может быть организовано на основе передачи их в

пожизненное наследуемое владение. Данная стратегия не потребует значительных изменений в законодательство, поскольку Гражданский кодекс и Кодекс о земле закрепляют в качестве ограниченных вещных прав на землю право пожизненного наследуемого владения.

Потенциально возможным способом формирования в будущем частных лесов в Беларуси является также стимулирование передачи небольших участков лесов, расположенных среди сельскохозяйственных угодий, в пожизненное наследуемое владение.

Реализация указанных предложений возможна на основе изменений и дополнений законодательства:

- дополнить статью 14 Кодекса о земле «Пожизненное наследуемое владение земельными участками» основанием возникновения владения – «для целей лесовыращивания»; определить в статье 36 Кодекса о земле размеры земельного участка, предоставляемого для лесовыращивания;
- ввести в Лесной кодекс раздел «Лесовладение», предусмотрев основные принципы лесовладения, права и обязанности владельцев, ограничения (обременения), приостановление и прекращение лесовладения;
- при наличии политической воли передачи земельных участков в пожизненное наследуемое владение необходимо в специальном акте земельного законодательства предусмотреть основания предоставления земельных участков во владение для целей лесовыращивания, изъятия их из владения, правовой механизм контроля за целевым использованием указанных земель;
- сформировать систему стимулирования рационального лесопользования, в том числе, порядок и условия покрытия специальных расходов, связанных с охраной лесов от пожаров и болезней, права, обязанности, гарантии и меры ответственности владельцев лесов на таких участков, местного населения и государственного органа, осуществляющего контроль в этой области;
- в целях сохранения хозяйственной и экологической целостности участка лесного фонда, передаваемого во владение, следует закрепить в лесном законодательстве принцип неделимости данного объекта (по аналогии с землей, передаваемой в пожизненное наследуемое владение крестьянскому фермерскому хозяйству).

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ПРОБЛЕМЫ ПРАВОВОГО ЗАКРЕПЛЕНИЯ УЧАСТИЯ ОБЩЕСТВЕННОСТИ В ПРОЦЕССЕ ПРИНЯТИЯ РЕШЕНИЙ, КАСАЮЩИХСЯ ОКРУЖААЮЩЕЙ СРЕДЫ, В ТОМ ЧИСЛЕ ЛЕСОВ

Е.В. ЛАЕВСКАЯ[49]

Summary The article deals with the legal regulation of public participation in decision-making on issues related to the environment, including forests. The author analyzes the legislation of Belarus based on the Aarhus Convention, formulate proposals to improve it.

Key words: forest, public participation, Aarhus Convention.

Европейско-североазиатский министерский переговорный процесс (ЕСА ФЛЕГ) призван стать импульсом для достижения и выполнения международных договоренностей, свидетельствующих о приверженности стран делу борьбы с незаконными рубками, торговлей лесной продукцией незаконного происхождения и коррупцией в лесном секторе силами всех заинтересованных сторон. Он должен создать политическое пространство на национальном и региональном уровнях для согласованного решения этих сложных и политически болезненных проблем и объединения усилий с основными заинтересованными структурами, представляющими общественность и частный сектор. В рамках указанного министерского переговорного процесса 44 государствами Европы и Северной Азии подписана Санкт-Петербургская декларация (ноябрь 2005г.), закрепляющая решимость стран в противодействии незаконной деятельности в лесном секторе. Всего в реализации программы ФЛЕГ принимает участие семь стран ЕСА – Армения, Азербайджан, Беларусь, Грузия, Молдова, Украина и Российская Федерация.

Республика Беларусь, входящая в десятку наиболее лесных стран Европы (лесистость составляет около 40% территории), также активно включилась в этот министерский процесс, хотя проблема незаконных рубок в нашей стране, как свидетельствуют различные официальные источники, не носит таких масштабов, как в других государствах, инициировавших принятие Санкт-Петербургской декларации.

В тоже время участие Беларуси в министерском процессе ЕСА ФЛЕГ является подтверждением заинтересованности нашей страны в развитии сотрудничества в области борьбы с незаконными рубками и торговлей лесопродукцией, коррупцией в лесном секторе. Кроме того, позиция Беларуси, как участника этого процесса, может быть учтена при выработке дальнейших действий по борьбе с незаконной деятельностью в сфере лесного хозяйства на международном уровне. Немаловажным также является тот факт, что подобное участие страны в министерском процессе является возможностью для оценки перспектив в совершенствовании лесоуправления, законодательства, регулирующего лесные отношения, в целом с позиций приоритетов устойчивого развития государства, вызовов и угроз современности.

Документы, принимаемые в рамках процесса ЕСА ФЛЕГ, в том числе Санкт-Петербургская декларация, стимулирует страны к выработке совместных действий на международном уровне и совершенствованию национального законодательства, регулирующего отношения в лесном секторе.

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Важными для совершенствования национального законодательства являются принципы ФЛЕГ, отраженные в Санкт-Петербургской декларации, в частности:

- принцип признания права местных жителей, жизнь которых зависит от леса, уважения их традиционных прав и практики лесопользования, необходимость способствовать участию местного населения в лесоуправлении с целью обеспечения их социально-экономического и культурного развития и охраны природных ресурсов;

- принцип вовлечения всех заинтересованных сторон, включая представителей общественности, частных лесовладельцев, НПО в процесс выработки и реализации лесного законодательства и лесной политики в рамках открытого процесса, основанного на принципе участия, способствуя повышению прозрачности, сокращению коррупции, повышению уровня справедливости и сводя к минимуму неправомерное влияние привилегированных групп.

Законодательство Республики Беларусь закрепляет правовые основы участия общественности в решении вопросов, касающихся планов и программ, связанных с окружающей средой, в самом общем виде.

Следует иметь ввиду, что ст. 6, 7 Конвенции о доступе к информации, участии общественности в процессе принятия решений и доступе к правосудию по вопросам, касающимся окружающей среды (вступила в силу для Республики Беларусь 30 октября 2001г.) (далее – Орхусская конвенция) закрепляет обязанности Стороны обеспечить право граждан на участие в процессе принятия решений по конкретным видам деятельности и в процессе подготовки планов и программ, связанных с окружающей средой, предоставляя общественности необходимую информацию... По возможности каждая Сторона прилагает усилия для обеспечения общественности возможностей для участия в разработке политики, связанной с окружающей средой.

Конвенциональное положение в определенной степени отражено в лесном законодательстве. Так, согласно ст.14 Лесного кодекса граждане, общественные объединения и органы территориального общественного самоуправления имеют право участвовать в рассмотрении затрагивающих их интересы вопросов, связанных с изъятием, использованием, охраной, защитой лесного фонда и воспроизводством лесов, через местные референдумы, собрания и иные формы прямого участия в государственных и общественных делах. Органы государственного управления должны способствовать проведению таких референдумов и собраний в соответствии с законодательными актами Республики Беларусь. Согласно указанной норме государственные органы предоставляют гражданам, общественным объединениям и органам территориального общественного самоуправления в соответствии с законодательными актами Республики Беларусь экологическую информацию в области использования, охраны, защиты лесного фонда и воспроизводства лесов. Однако механизм предоставления информации в области использования, охраны, защиты лесного фонда и воспроизводства лесов (в активной и пассивной форме) в дальнейших нормах не развивается, тем самым вышеуказанная норма остается нормой-декларацией.

Нормы статьи 6 Орхусской конвенции нашли отражение в ряде нормативных правовых актов Республики Беларусь. Так, Положение о порядке проведения ОВОС 2010г., в частности, определило процедуру проведения общественных обсуждений отчета об ОВОС; Положение о деятельности общественных инспекторов охраны животного и растительного мира 2009г., закрепило права и обязанности общественных инспекторов; Положение о порядке проведения общественных обсуждений в области архитектурной, градостроительной и строительной деятельности 2011г., установило особенности участия общественности в обсуждении и принятии решений по вопросам градостроительного планирования развития территорий, в том числе населенных

пунктов, их благоустройства. В соответствии с Положением о порядке проведения общественной экологической экспертизы 2010г. представители общественности вправе организовывать общественную экологическую экспертизу градостроительных проектов общего планирования, специального планирования, детального планирования, архитектурные проекты застройки территорий; обоснований инвестирования в строительство, архитектурныех и строительныех проектов, для которых в соответствии со ст. 13 Закона Республики Беларусь «О государственной экологической экспертизе» требуется проведение ОВОС. Также определены отдельные особенности участия общественности в принятии решений по вопросам удаления объектов растительного мира на основании Положения о порядке выдачи разрешений на удаление объектов растительного мира в населенных пунктах и разрешений на пересадку объектов растительного мира в населенных пунктах 2011г.

Анализ законодательства позволяет сделать вывод, что Положение о порядке проведения ОВОС не в полной мере отвечает требованиям статьи 6 Орхусской конвенции в части обеспечения прав общественности на участие в процессе принятия экологически значимых решений по конкретным видам деятельности.

В частности, неэффективным с точки зрения учета общественного мнения по статье 6 Орхусской конвенции представляется проведение общественных слушаний посредством сообщения о реализации проекта о конкретном виде деятельности в средствах массовой информации. Отсутствует процедура возможного сбора комментариев от общественности в данном случае и учета мнения общественности, последующего уведомления общественности об итоговом решении. Нуждается в совершенствовании положения законодательства с целью закрепления четких и осуществимых правовых мер, направленных на то, чтобы сроки процедур участия общественности отвечали требованиям пункта 3 статьи 6; участие общественности было обеспечено на ранней стадии согласно пункту 4 статьи 6, в том числе общественность была бы уведомлена об охвате данного вида деятельности национальной или трансграничной процедурой оценки воздействия на окружающую среду; процедуры участия общественности позволяли общественности подавать замечания, информацию, анализ либо мнения, которые, как она считает, имеют отношение к планируемой деятельности в соответствии с пунктом 7 статьи 6; общественность незамедлительно информировалась о решении согласно пункта 9 статьи 6; при пересмотре или обновлении государственным органом условий осуществления деятельности положения пунктов 2-9 статьи 6 применялись с необходимыми изменениями.

Очевидная связь статьи 6 Орхусской конвенции и статьи 7 об участии общественности, касающиеся планов, программ и политики в области окружающей среды (в особенности, включенные в нее положения статьи 6), а также статьи 8 об участии общественности в процессе разработки нормативных актов, имеющих непосредственную исполнительную силу, и других общеприменимых юридически обязательных правил, предписывает, на наш взгляд Стороне обеспечивать права общественности на участие в решении вопросов, касающихся планов, программ и политики, связанных с окружающей средой, в подготовке нормативных положений, имеющих непосредственную исполнительную силу, и/или общеприменимых юридически обязательных нормативных актов.

При этом, как указано в статье 7 Орхусской конвенции, «каждая Сторона предусматривает соответствующие практические и/или другие положения в отношении участия общественности в рамках открытой и справедливой структуры в процессе подготовки планов и программ, связанных с окружающей средой, представляя

общественности необходимую информацию. В рамках этой структуры применяются пункты 3, 4 и 8 статьи 6: пункт 3 статьи 6 – «процедуры участия общественности предусматривают разумные сроки осуществления различных этапов, которые обеспечивают достаточное время для информирования общественности в соответствии с пунктом 2 выше и подготовки и эффективного участия общественности в процессе принятия решений по вопросам, касающимся окружающей среды», пункт 4 статьи 6 – «каждая Сторона обеспечивает участие общественности уже на самом раннем этапе, когда открыты все возможности для рассмотрения различных вариантов и когда может быть обеспечено эффективное участие общественности», пункт 8 статьи 6 – «каждая Сторона обеспечивает, чтобы в соответствующем решении надлежащим образом были отражены результаты участия общественности».

В соответствии со ст. 15 Закона Республики Беларусь «Об охране окружающей среды» общественные объединения, осуществляющие деятельность в области охраны окружающей среды, имеют право разрабатывать, пропагандировать и реализовывать программы рационального использования природных ресурсов и охраны окружающей среды, участвовать в разработке проектов государственных (республиканских, отраслевых, местных и иных) программ и мероприятий по рациональному использованию природных ресурсов и охране окружающей среды и способствовать их выполнению. Например, в Республике Беларусь предусмотрена разработка местных или территориальных планов действий по охране окружающей среды (далее - МПДООС), которые разрабатываются на основе Национального плана действий по рациональному использованию природных ресурсов и охране окружающей среды Республики Беларусь (далее - НПДООС) на 2006-2010 гг., утвержденного Указом Президента от 5 мая 2006 №302.

Однако детальное правовое регулирование участия общественности в разработке подобных планов и программ с учетом приведенных выше требований Орхусской конвенции, отсутствует.

Подобные нормы о праве граждан, общественных объединений на участие в рассмотрении затрагивающих их интересы вопросов, связанных с изъятием и предоставлением земельных участков, изъятием, использованием, охраной, защитой государственного лесного фонда и воспроизводством лесов, обращением с объектами растительного мира, кроме указанной нормы Лесного кодекса, содержится в Кодексе Республики Беларусь «О земле», Законах Республики Беларусь «О растительном мире», «О животном мире». Так, Закон Республики Беларусь от 10 июля 2007г. «О животном мире» содержит общую норму ст. 13 об участии граждан, общественных объединений в «принятии затрагивающих их права и законные интересы государственных решений, связанных с охраной и использованием животного мира, через местные референдумы, собрания и иные формы прямого участия в государственных и общественных делах в соответствии с законодательством». Согласно статье 16 Закона Республики Беларусь от 8 июля 2008г. «Об особо охраняемых природных территориях» «граждане и общественные организации (объединения) имеют право вносить предложения и оказывать содействие государственным органам в осуществлении мероприятий по организации, функционированию, охране и использованию особо охраняемых природных территорий. В ст.4 Закона Республики Беларусь от 5 июля 2004г. «Об архитектурной, градостроительной, и строительной деятельности» закреплено право физических лиц на участие в градостроительном планировании развития территорий, в том числе населенных пунктов. В развитие указанной нормы на уровне административно-территориальных единиц в последнее время принято ряд Инструкций о порядке

организации и проведения общественного обсуждения градостроительных проектов, вопросов благоустройства, жилищного и иного строительства (Решение Мингорисполкома от 20 апреля 2006г. №718 с изменениями, Решение Брестского областного исполнительного комитета от 16 октября 2007г. №844, Решение Могилевского областного исполнительного комитета от 24 января 2008г. №1-26). Объектами общественного обсуждения градостроительных проектов являются: генеральные планы городов и иных населенных пунктов; проекты и схемы территориальной организации особо охраняемых природных территорий, проекты территориальной организации иных территорий, предусмотренных законодательством; проекты детального планирования частей населенных пунктов (территориальных зон, кварталов, микрорайонов, улиц, территорий предполагаемой инвестиционной деятельности).

Тенденцию разработки подобных документов следует приветствовать, однако они нуждаются в совершенствовании в части соответствия положениям пункта 3 статьи 6, как этого требует статья 7 Орхусской конвенции относительно планов и программ. Все эти инструкции содержат положение о весьма краткосрочном периоде для рассмотрения проектов и программ общественностью – не более 15 дней, при этом в течение этого же срока участники обсуждения «имеют право проводить профессиональные независимые экспертизы выставленного на общественное обсуждение градостроительного проекта за счет собственных средств», что представляется невыполнимым за столь короткий срок.

Следует отметить инициативную деятельность Министерства природных ресурсов и охраны окружающей среды, которое постановлением от 19 января 2007г. №2 утвердило Положение об общественном координационном экологическом совете при Министерстве природных ресурсов и охраны окружающей среды Республики Беларусь. Основными задачами этого совета, кроме прочего, являются оказание Министерству природных ресурсов и охраны окружающей среды Республики Беларусь содействия в: проведении единой государственной политики в области охраны окружающей среды и рационального использования природных ресурсов; разработке и реализации государственных программ, планов действий и других документов в области охраны окружающей среды и рационального использования природных ресурсов. Позитивно оценивая такой подход министерства, однако необходимо отметить, что указанный нормативный правовой акт не содержит в себе механизма, на основе которого возможно организовать участие общественности в разработке планов и программ как постоянный процесс.

Таким образом, несмотря на то, что в ряде законодательных актов закреплен в общем виде принцип участия общественности в процессе подготовки планов и программ, связанных с окружающей средой, который можно было бы применить и к лесным отношениям, в тоже время в законодательстве Республики Беларусь отсутствуют правовые механизмы (процедуры), позволяющие реализовать положения пунктов 3, 4 и 8 статьи 6, как это указано в статье 7 Конвенции.

Отношения в области участия общественности в процессе принятия решений, имеющих отношение к окружающей среде, состоянию и использованию лесов, нуждаются в более детальном правовом регулировании с учетом положений Орхусской конвенции. Совершенствование правового регулирования должно, по мнению автора, осуществляться в следующих направлениях:

- необходимо правовое обеспечение предоставления гражданам экологической информации в области использования, охраны, защиты лесного фонда и

воспроизводства лесов не только по запросу, но и в порядке активного распространения (в том числе посредством создания электронных информационных ресурсов);

- следует формировать общественные лесные советы при органах лесного хозяйства с целью обеспечения прозрачности процесса принятия решений;

- следует разработать правовой механизм, обеспечивающий участие общественности в принятии наиболее значимых решений, касающихся лесного фонда: планов и программ, проектов по конкретным видам деятельности, в результате осуществления которых производятся рубки леса с учетом положений ст.6-8 Орхусской конвенции.

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СОВЕРШЕНСТВОВАНИЕ ПОДГОТОВКИ СПЕЦИАЛИСТОВ ЛЕСНОГО ХОЗЯЙСТВА: ПРАВОВЫЕ И МЕТОДИЧЕСКИЕ АСПЕКТЫ

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Резюме

Are shown legal and procedural aspects of improving the training of forestry specialists with a regional perspective and modern requirements on the example of Gomel State University of F. Skorina

Keywords: higher education, a forestry engineer, improving the training of specialist

Высшее лесохозяйственное образование в Республике Беларусь имеет давнюю историю и традиции. Оно основано на классическом лесном образовании с учетом направлений современной лесной политики, последних достижений науки и практики.

Подготовка студентов по специальности «Лесное хозяйство» осуществляется в соответствии с Образовательным стандартом Республики Беларусь (ОСРБ 1-75 01 01-2007). Специальность относится к техническому профилю подготовки специалистов с высшим образованием.

Образовательная программа подготовки инженеров лесного хозяйства включает изучение циклов социально-гуманитарных, естественнонаучных, общепрофессиональных и специальных дисциплин, а также факультативных дисциплин и дисциплин специализаций. При этом социально-гуманитарный блок дисциплин состоит из обязательного компонента дисциплин и дисциплин по выбору студентов. Естественнонаучный, общепрофессиональный и специальный блоки представлены обязательным компонентом дисциплин, вузовским компонентом и дисциплинами по выбору студентов.

Если объем всех видов учебных занятий, включая учебные и производственные практики, принять за 100%, то, социально-гуманитарные дисциплины, такие как История Беларуси, Основы идеологии белорусского государства, Философия, Социология, Основы педагогики и психологии, Физическая культура, Иностранный язык и др., составляют 15,4% учебного времени. Доля естественнонаучных дисциплин, таких как Высшая математика, Физика, Экология с основами метеорологии и др. – 14,8 %, соответственно.

Цикл общепрофессиональных и специальных дисциплин включает 32 дисциплины, объем которых составляет 41,4%. С развитием лесохозяйственной отрасли и современных информационных технологий, экологизации лесного хозяйства вводятся новые дисциплины. Так, к относительно новым курсам по сравнению с классическими, можно отнести дисциплины Защита населения и объектов в чрезвычайных ситуациях,

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радиационная безопасность; Геоинформационные системы в лесном хозяйстве; Лесная сертификация и др.

Дисциплины специализации «Лесоведение и лесоводство», включающие спецкурсы Подсочка леса, Гидротехнические мелиорации, Лесоэксплуатация и др. составляют 6,9 %. Наполнение цикла дисциплин специализаций, а также требования к знаниям и умениям устанавливаются вузом в соответствии с Образовательным стандартом.

Учитывая, что ГГУ им. Скорины расположен в г. Гомеле и контингент студентов в зависимости от курса и формы обучения на 65-85% представлен жителями загрязненных радионуклидами Гомельской и отчасти Могилевской областей, которые вероятнее всего после окончания Вуза останутся работать в этом регионе, в программу специальности «Лесное хозяйство» введен спецкурс «Радиационное лесоводство», при изучении которого студенты знакомятся со всеми нюансами ведения лесного хозяйства на загрязненной территории, в том числе и с вопросами охраны труда и техники безопасности.

С целью совершенствования качества подготовки специалистов на кафедре лесохозяйственных дисциплин ГГУ им. Ф. Скорины существует практика проведения выездных лабораторно-практических занятий. Так, при изучении спецкурса Радиационное лесоводство отдельные лабораторно-практические занятия проводятся на базе лаборатории радиационного контроля Гомельского ГПЛХО, а также поста радиационного контроля ГСЛХУ «Ветковский спецлесхоз». Студенты знакомятся с практической работой службы радиационного контроля лесохозяйственных учреждений, участвуют в обследовании кварталов и знакомятся с методикой подготовки почвенных и растительных образцов для радиологического анализа, проявляют активную заинтересованность и хорошо усваивают материал.

Незначительную долю (2,2%) в общем объеме учебного времени составляют факультативные дисциплины, выбор которых устанавливается вузом. Как правило, это современные направления, позволяющие студентам получить дополнительные знания, которые будут полезны в будущей профессиональной деятельности. В ГГУ им. Ф. Скорины студентам 1 курса специальности «Лесное хозяйство» одной из первых читается факультативная дисциплина «Введение в специальность». На кафедре лесохозяйственных дисциплин стало традицией в рамках этой дисциплины при знакомстве студентов с будущей специальностью проводить встречи и круглые столы с производственниками и учеными.

В текущем году в рамках названной дисциплины на базе Гомельского ГПЛХО прошла встреча первокурсников с руководством объединения. Перед студентами с интересной лекцией о будущей профессии выступили главный лесничий Василенко А.П. и заместитель генерального директора по идеологической работе Попкова Т.М. Знакомство студентов с будущей профессией продолжится во время их ежегодного участия в посадке леса и уборке пригородных лесов от захламленности. Ознакомительную экскурсию в Институт леса НАН Беларуси и лекцию на тему «Лесная наука» провел директор института, доцент Ковалевич А.И.

В современных условиях, и, прежде всего, в связи с переходом лесохозяйственных учреждений на самофинансирование и самоокупаемость, молодой специалист должен иметь представление о правовых аспектах лесохозяйственной деятельности. К сожалению, в лесохозяйственных вузах Беларуси в настоящее время отсутствует система правовой подготовки специалистов, хотя в недавнем прошлом студентам читался курс «Основы Советского права». Введение новой дисциплины в учебный процесс требует массы согласований на различных уровнях. Поэтому в рамках

вузовских компонентов небольшие по объему учебных часов курсы целесообразно проводить как факультативы.

Для улучшения уровня подготовки специалистов лесохозяйственной отрасли в ГГУ им. Ф. Скорины введена факультативная дисциплина «Лесное право». Рабочей программой названной дисциплины предусмотрено изучение таких вопросов, как лесная политика, конституционные основы, международные правовые акты, национальное природоресурсовое и лесное законодательство в сфере охраны окружающей среды и рационального природопользования, с акцентом на лесопользование, а также уголовная, административная и гражданско-правовая ответственность за нарушение лесного законодательства.

На примере наиболее часто встречающихся нарушений законодательства при ведении лесохозяйственной деятельности составлены ситуационные задачи, при рассмотрении которых студенты под руководством преподавателя определяют, какие законодательные и нормативно-правовые акты нарушены, и какие меры необходимо принять. Решение ситуационных задач помогает студентам лучше усвоить материал и получить навыки принятия самостоятельных решений. Кроме того, знание правовых аспектов профессиональной деятельности, возможно, предостережет выпускника от ошибок в будущем.

Классическое лесохозяйственное образование наряду с теоретической подготовкой студентов по ряду общепрофессиональных и специальных дисциплин, которая осуществляется в период проведения аудиторных занятий, включает также и большой объем учебных и производственной практик, в период прохождения которых студенты не только расширяют и углубляют знания о природе леса, но и получают практические навыки назначения, организации и проведения различных лесохозяйственных, лесокультурных, лесозащитных и других мероприятий. В общем объеме учебного времени учебные и производственные практики составляют - 19,3%.

На рисунке 1 показано соотношение объема теоретических (по циклам дисциплин) и практических (учебные и производственные практики) занятий. В современных условиях возрастает актуальность углубленного освоения лесоводственно-инженерной квалификации каждым студентом, т.е. приобретение студентами профессиональных компетенций непосредственно в период обучения в высшем учебном заведении.

Для совершенствования подготовки специалистов лесного хозяйства в УО «ГГУ им. Ф. Скорины» обучение студентов осуществляется при тесном сотрудничестве образования, науки и производства. На кафедре лесохозяйственных дисциплин открыты филиалы: на базе РДЛУП «Гомельлеспроект», что дает возможность студентам в процессе обучения знакомиться и получать навыки работы с современными информационными технологиями, аэрокосмическими методами и новыми программными средствами единой геоинформационной системы лесного хозяйства, а также в ГНУ «Институт леса НАН Беларуси», где студенты знакомятся с новейшими научными разработками в области лесного хозяйства, проходят учебные практики на территории лесного фонда Государственного лесохозяйственного учреждения «Кореневская экспериментальная лесная база Института леса НАН Беларуси» на опытных объектах, заложенных корифеями лесной науки.

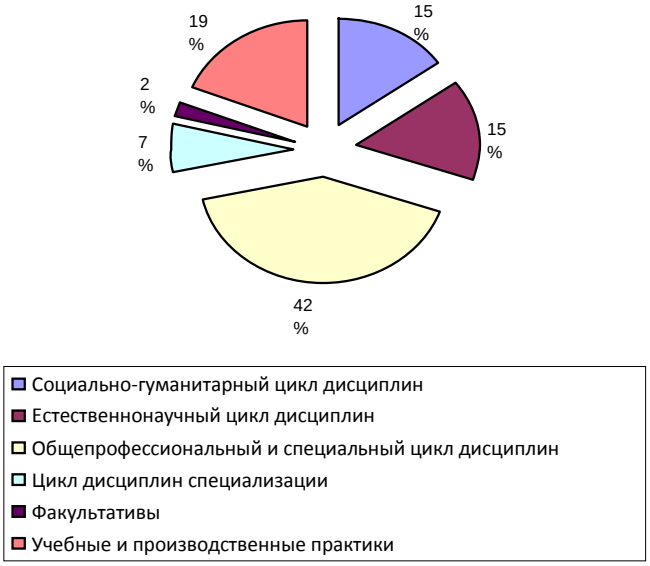

Рис.1 Соотношение объема теоретических (по циклам дисциплин) и практических (учебные и производственные практики) занятий

Знакомство с многогранной деятельностью лесохозяйственных учреждений и получение навыков работы в лесной отрасли осуществляется в период производственной технологической практики, которую студенты специальности «Лесное хозяйство» проходят в лесохозяйственных учреждениях Республики, работая на оплачиваемых должностях. В настоящее время обсуждается вопрос о целесообразности открытия учебно-производственного центра на базе одного из опытных лесничеств с целью усилить практическую подготовку специалистов.

УЧЁТ ЭКОНОМИЧЕСКИХ И ЭКОЛОГИЧЕСКИХ ФАКТОРОВ ПРИ НАЗНАЧЕНИИ ДРЕВОСТОЕВ В ГЛАВНУЮ РУБКУ

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Резюме. Сделан анализ рубок главного пользования и их влияния на экологические функции лесных биогеоценозов. Предложено для сохранения экологических полезностей леса повысить возраст рубки на основе представлений об экологической и эколого-экономической спелости. Предложено в законодательном порядке изменить деление на группы и категории лесов введя три группы лесов и сократив количество категорий. Предложено пересмотреть структуру насаждений, которые исключены из расчета главного пользования. Показано, что противоречия между экономическими и экологическими требованиями при лесопользовании должны устраняться на основе композиции оценок и компромисса между данными факторами.

Ключевые слова: лесопользование, воспроизводство лесов, сосново-березовые древостои, черноольховые древостои, экологическая спелость, особо охраняемые природные территории.

В последние годы общий объем лесопользования в Беларуси составляет 14-15 млн. м^3 (Багинский, Есимчик, 1996; Государственный учет лесов, 2011). В кратко- и среднесрочной перспективе объем лесопользования в Беларуси ожидается в размере 15-17 млн.м^3 в год (Государственный учет …, 2011; Государственная программа …, 2010). Это значительные величины, которые существенно влияют на экологические функции леса. Рубки главного пользования составляют основной источник получения древесины для функционирования лесного комплекса.

Основная задача предприятий лесного хозяйства, как и любого хозрасчетного предприятия, – получение прибыли. Но основные лесохозяйственные предприятия – лесхозы – работают в специфических условиях, так как предмет их труда – лесные насаждения, которые кроме сырьевых выполняют и экологические функции. Лес и земля, на которой он произрастает, являются одновременно и средством и предметом труда (Янушко, 2001).

Любой вид лесопользования нарушает сложившиеся в процессе эволюции сложные экологические взаимоотношения между фитоценозами и окружающей средой (Чуенков, 1992). В какой степени эти связи будут нарушены и как скоро их можно восстановить, зависит от многих причин: интенсивности (объема) вырубки, применяемых технологий, условий местопроизрастания (типов леса) насаждений.

Вырубки влияют не только на величину получения различных экологических полезностей леса (депонирование CO_2, выделение атомарного кислорода, регулирование стока рек и т.д.), но и вносят существенные изменения в другие элементы окружающей среды. Обсуждая вопрос об экологическом лесопользовании, необходимо дать понятие этому термину. В литературе есть ряд его определений. Наиболее емким и обоснованным представляется тот, который дали С.Х. Лямеборшай и В.Н. Гирячев (1992): «Экологическое лесопользование – это совокупность всех форм эксплуатации лесных ресурсов для удовлетворения материальных и культурных потребностей общества, а также совокупность всех мер по их воспроизводству и рациональному изменению экологического баланса». Отсюда вытекает, что объектом экологического лесопользования служит комплекс взаимоотношений между лесными ресурсами и естественными условиями жизни леса в пределах территориальной единицы

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лесопользования: в Беларуси это лесхоз. Предмет экологического лесопользования – оптимизация названных отношений для сохранения и воспроизводства лесных ресурсов.

В силу сказанного, проявляются противоречия между экологическими и экономическими интересами в процессе лесовыращивания и многоцелевого лесопользования. Как правило, разрабатывая некоторые хозяйственные мероприятия в лесном хозяйстве, отмечают, что они проводятся без нанесения экологического ущерба. На деле такого не может быть в принципе, так как лес выполняет экологические функции наилучшим образом, если он находится в естественном ненарушенном состоянии. Поэтому проведение хозяйственных мероприятий – это всегда компромисс между экологическими функциями и экономическими интересами (Качановский, 2003). Так, общеизвестно значение старовозрастных лесов как хранителей биологического разнообразия (Багинский, 2002). В то же время экономические интересы диктуют вырубку древостоев в возрасте технической и даже количественной спелости, то есть хвойные древостои вырубают на 60-80 лет раньше, чем желательно по соображениям сохранения биологического разнообразия.

Выходом здесь может быть законодательное сохранение в каждом лесхозе, а лучше в каждом лесничестве, определенного количества участков леса, которые будут расти до естественной спелости. Таковыми должны быть древостои разных пород в основных типах леса. Эта норма должна быть определена при научных исследованиях как определенная уступка экономических интересов экологическим. При этом целесообразно использовать такие категории, введенные нами, как экологическая и эколого-экономическая спелости (Лапицкая, 2001; 2005).

Для реализации экологизированного лесопользования необходима увязка всех способов ведения хозяйства в общей экологической системе. Эта увязка должна базироваться на теоретическом и методическом обосновании природных систем, в том числе и лесных, которые изложены в трудах В.И. Вернадского и В.И. Сукачева (1960), где тип леса представляет собой лесной биогеоценоз со всеми его сложными взаимосвязями. Проводимое лесопользование должно соответствовать природе леса, его естественно-историческим особенностям и минимально нарушать сложившиеся экологические связи.

Рассмотрим последнюю проблему на примере насаждений ольхи черной и смешанных сосново-берёзовых насаждений. Для ольхи чёрной возраст экологической спелости, установленный нами как максимальная величина среднего прироста совокупности древостоев некоторого региона, составляет для разных условий местопроизрастания от 70 лет в I^a бонитете до 85 лет в III классе бонитета, а в среднем – 80 лет. Возраст рубки древостоев ольхи черной в лесах второй группы установлен в 51 год. Следовательно, экологическая спелость в этих насаждениях в момент рубки не достигается, то есть мы видим явное противоречие между экологическими и экономическими функциями древостоев, которые пока решаются в пользу экономики.

В сосново-берёзовых древостоях возрасты экологической спелости между сосной и берёзой отличаются на 20-40 лет в зависимости от класса бонитета (Неверов, Лапицкая, 2001). Поэтому определять возраст экологической спелости сосново-берёзовых древостоев приходится путём композиции оценок с учётом относительных весов каждой породы в составе древостоя в соответствии с требованиями системного анализа (Лапицкая, 2001, 2005).

Экономическая составляющая при установлении возрастов рубки должна учитывать такой показатель как рентабельность лесовыращивания, который зависит не только от себестоимости воспроизводства лесов, но в гораздо большей степени от стоимости древесины, получаемой при проведении рубок главного пользования. Последний показатель есть функция количества и качества заготовленной древесины. В сосново-берёзовых древостоях в настоящее время сосна имеет явные преимущества перед берёзой по этим показателям. В то же время учёт экологического императива не позволяет полностью игнорировать берёзовую компоненту в этих насаждениях.

Современные подходы к установлению возраста рубки через показатели технической спелости, ориентированной на среднюю деловую древесину, привели к тому, что при главном пользовании мы получаем свыше 45% средней деловой древесины и менее 20% наиболее ценной крупной, что экономически невыгодно (Багинский, Есимчик, 1996).

Для решения противоречий между экономическими показателями, которые в настоящее время выражаются через экономическую спелость леса, и экологической компонентой нами предложен новый вид спелости – эколого-экономическая (Лапицкая, 2001, 2005; Неверов, Лапицкая, 2001). Она обеспечивает оптимальное сочетание экономических и экологических интересов в условиях постоянного лесопользования. Возраст эколого-экономической спелости выше современного возраста рубки и приближается к возрасту экологической спелости. Применение названной спелости при организации лесопользования полностью не исключает описанные противоречия, но существенно их сглаживает, поднимая возраст рубки ольхи черной на 10-15 лет, сосны на 20-40 лет в зависимости от класса бонитета, берёзы - примерно на 15-20лет для различных типов леса.

Следует упомянуть, что в литературе (особенно в западной) часто подчеркивается, что суммарная стоимость экологических полезностей леса значительно превышает цену древесины (Качановский, 2003; Национальный отчет …, 2006). С этим утверждением не принято спорить, но обычно этим принципом не руководствуются в практической деятельности. Дело в том, что экологические полезности леса потребляются всем обществом и, чаще всего, бесплатно, а древесина заготавливается конкретными юридическими и физическими лицами, и доход от ее продажи становится их собственностью. Поэтому экологизацией лесопользования озабочены в основном общественные организации и государство. Последние добились принятия многих нормативных актов экологической направленности. Следствием стал постепенный отказ развитых стран от проведения сплошных рубок в пользу выборочных, резкое уменьшение площадей концентрированных рубок в многолесных районах, запреты на применение при рубках леса тяжелой гусеничной техники, прекращение широкомасштабной мелиорации избыточно увлажненных лесных земель, сокращение объемов применения удобрений в лесах и многое другое.

Рассматривая сказанное применительно к Беларуси, видим, что у нас, вроде бы, нет причин для особого беспокойства в силу высокой лесистости государства и превышения депонирования диоксида углерода над его эмиссией (Багинский, 2002; Национальный отчет, 2006). Но размещение лесов по территории страны неравномерное. Если в отдельных районах Восточного Полесья (Лельчицкий и др.) и на севере страны (Россонский) лесистость превышает 50-60%, то более 15 районов не имеют и 20% лесистости, а в Несвижском и Берестовичском доля лесов не достигает и 15%. Исправить существующее положение непросто, т.к. малолесные районы обладают наиболее высокобалльными землями, на которых ведется интенсивное сельское хозяйство.

Известно, что несплошные рубки главного пользования экологичнее, чем сплошные. Но первые требуют от лесозаготовителей более высокой квалификации и, главное, добросовестности. Недостаточная ответственность при их проведении, погоня за сиюминутной выгодой (вырубка всех лучших деревьев) нанесёт лесному хозяйству большой ущерб, который значительно превысит ожидаемые выгоды. Поэтому при назначении постепенных или выборочных рубок необходим особо жесткий контроль.

Следующим немаловажным фактором экологизации лесного хозяйства и лесопользования является повышение биологической устойчивости лесных насаждений. В настоящее время его можно добиться двумя путями – обеспечить соответствие породного состава древостоев почвенно-грунтовым условиям и формирование смешанных насаждений. Последние помимо экологических преимуществ обеспечивают гарантию удовлетворения спроса на различные сортименты в связи с непрогнозируемыми изменениями в потребности древесины разных древесных видов в будущем (Багинский, Есимчик, 1996; Янушко, 2001; Багинский, 2002). Например, береза еще 30-40 лет назад считалась едва ли не сорной породой и в оптимальной породной структуре разных авторов занимала 5-7%. Теперь же древесина этой породы высоко ценится на европейском рынке. При цене хвойного пиловочника в 40-60 USD/м^3 фанерные бревна березы покупают по 110-130 USD/м^3. Не следует забывать и возможность трансформации породной структуры лесов из-за изменений климата (Логинов, Пугачевский, 1998).

Наши исследования биологического разнообразия в сосново-березовых древостоях, проведение во всех лесорастительных подзонах Беларуси, показали, что в настоящее время,

несмотря на интенсивные рубки промежуточного пользования, угрозы видовому составу древесных и кустарниковых пород в этих насаждениях не обнаружено.

Ещё одно противоречие между экономическими интересами лесопользователей и экологическими требованиями появилось в последние годы в связи с необходимостью использовать лесосечные отходы и древесный отпад как топливо для ТЭЦ. Экологические требования к сохранению биологического разнообразия, сохранения почвенного плодородия, более длительного депонирования диоксида углерода диктуют сохранение лесосечных отходов и древесного отпада, а необходимость обеспечения энергетической безопасности предполагает их полную утилизацию. Здесь тоже необходимо находить разумный компромисс взаимоисключающих интересов.

Таким образом, мы видим, что реально существующие противоречия между экономическими и экологическими интересами при организации и проведении лесопользования решаются на принципах системного подхода с помощью композиции оценок и при компромиссе интересов экономики и экологии.

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О РЕЗУЛЬТАТАХ УЧАСТИЯ БЕЛАРУСИ В РЕАЛИЗАЦИИ РЕГИОНАЛЬНОЙ ПРОГРАММЫ «СОВЕРШЕНСТВОВАНИЕ ПРАВОПРИМЕНЕНИЯ И УПРАВЛЕНИЯ В ЛЕСНОМ СЕКТОРЕ СТРАН ВОСТОЧНОГО НАПРАВЛЕНИЯ ЕВРОПЕЙСКОЙ ПОЛИТИКИ ДОБРОСОСЕДСТВА И РОССИИ» (ЕПД ФЛЕГ)

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Беларусь располагает довольно значительными лесными ресурсами. Земли лесного фонда занимают более 9,4 млн.га, или 45 % территории страны. Лесами покрыто свыше 8,3 млн.га (38,8% страны). Общий запас растущей древесины превышает 1,6 млрд.куб.м. Более половины лесов выполняют преимущественно природоохранные функции.

Согласно Конституции леса являются исключительной собственностью государства. Национальная лесная политика базируется на принципах устойчивого лесуправления. Ее цель – обеспечение эффективной охраны, защиты, воспроизводства лесов и рационального использования лесных ресурсов, с учетом их экономических, экологических и социальных функций.

85% лесного фонда находится в ведении Министерства лесного хозяйства. Подчиненные ему организации осуществляют комплексную лесохозяйственную деятельность. Они занимаются воспроизводством лесов, охраной их от пожаров и незаконных рубок, защитой от вредителей и болезней, охотничим хозяйством, побочным лесопользованием, лесозаготовками, а также, частично, деревообработкой и производством древесного топлива. На содержание государственной лесной охраны, проведение работ по воспроизводству, охране и защите лесов, лесоустройству выделяются бюджетные средства. Их доля в общем объеме расходов на лесное хозяйство составляет около 40%. Охотничье хозяйство и промышленная деятельность находятся на самофинансировании.

Беларусь характеризуется довольно высоким уровнем ведения лесного хозяйства, который признан зарубежными экспертами. В стране действует сеть современных лесных селекционно-семеноводческих центров и питомнических хозяйств, широко внедряются новые лесные технологии, организована эффективная охрана лесов от пожаров, динамично развиваются экотуризм и биоэнергетика. Посредством лесной сертификации осуществляется независимый контроль за соблюдением стандартов устойчивого лесоуправления. 95% лесов сертифицированы по национальной системе лесной сертификации, которая аккредитована Советом PEFC, а две трети - по схеме FSC.

Растущие объемы потребления лесопродукции усиливают влияние лесного хозяйства на смежные секторы экономики и социальную сферу. Отрасль вносит весомый вклад в выполнение глобальных экологических соглашений. Таким образом, на современном этапе лесное хозяйство Беларуси преобразуется из сырьевой - в инфраструктурную отрасль экономики. Ему уделяется большое внимание Руководством страны. Реализуется утвержденная правительством Государственная программа развития лесного хозяйства на 2011-2015 годы.

Участие Республики Беларусь в региональной программе «Совершенствование правоприменения и управления в лесном секторе стран восточного направления Европейской политики добрососедства и России» (ЕПД ФЛЕГ), которая реализовывалась под эгидой Евросоюза, способствовало совершенствованию лесного законодательства и правоприменения

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в лесном секторе, развитию системы лесоуправления и охраны лесов. Благодаря поддержке Всемирного Банка и Международного Союза Охраны Природы активизирована профилактическая работа в сфере противодействия незаконным рубкам, торговле нелегальной лесопродукцией и коррупции в лесном секторе. Сформированы предпосылки для актуализации национальной лесной политики и стратегии развития лесного хозяйства на основе баланса экономических, экологических и социальных интересов в отношении Заложены основы для реализации широкой коммуникационной стратегии.

Наиболее значимые результаты выполнения мероприятий Странового плана ЕПД ФЛЕГ для Республики Беларусь:

1. В сфере лесного законодательства и правоприменения:

- с учетом международного опыта разработаны предложения по развитию лесного законодательства и правоприменения;

- более четко сформулированы задачи и ориентиры для проведения системной работы по проблематике ФЛЕГ в стране.

- расширено поле деятельности организаций лесного хозяйства и других заинтересованных по профилактике и борьбе с незаконными рубками и иными лесонарушениями;

- повысилась эффективность работы государственной лесной охраны;

- в целях повышения прозрачности и эффективности правоприменения разработаны и изданы массовым тиражом Справочное пособие по лесному законодательству, воспроизводству, охране и защите леса для работников государственной лесной охраны, природоохранных служб и других заинтересованных, а также Руководство по правоприменению в сфере лесного законодательства для государственной лесной охраны и природоохранных служб.

Эти издания содержат актуальную информацию о наиболее важных аспектах правового регулирования лесных отношений и ответственности за лесонарушения. Доступ к ним широкой аудитории, различных целевых групп позволит повысить информационную открытость лесного сектора, улучшить осведомленность общества о лесном законодательстве и правоприменении, будет способствовать профилактике правонарушений.

2. В сфере лесоуправления и лесопользования:

Начата разработка проекта Стратегического плана развития лесного хозяйства Беларуси на период до 2030 года. На первом этапе дана комплексная оценка современного состояния и тенденций развития лесного сектора, определены стратегические направления дальнейшего развития. Актуальные вопросы были обсуждены на научно-практической конференции «Лесной ресурс Беларуси», в которой приняли участие специалисты лесного хозяйства, представители научных и деловых кругов, общественности, СМИ.

Кроме того:

- с учетом международного опыта даны рекомендации по совершенствованию государственного управления лесами, в том числе дифференциации функций законодательного регулирования, надзора и контроля, управления хозяйственной деятельностью; предложены модели и этапы оптимизации системы лесоуправления и лесопользования;

- проведен анализ систем учета древесины и предложения по совершенствованию системы учета древесины в Беларуси на основе международного опыта и подготовлена к изданию массовым тиражом брошюра;

- даны рекомендации по модернизации системы учета древесины, совершенствованию порядка и способов реализации лесопродукции.

3. В сфере совершенствования лесного образования и повышения уровня профессиональной подготовки специалистов лесного хозяйства:

- разработаны и используются в учебном процессе учебные планы и программы по лесному законодательству и правоприменению для учебных заведений лесного профиля всех уровней;

- разработан и издан массовым тиражом Комплект учебно-наглядных пособий **(тематических стендов) для лесохозяйственных организаций, профильных учебных заведений и других заинтересованных по вопросам правоприменения в сфере лесного законодательства, воспроизводства, охраны и защиты леса;**

- разработаны и используются в учебном процессе учебный план и программа курсов повышения квалификации по теме «Современные лесные измерительные инструменты и автоматизированные системы учета лесопродукции»;

- расширена работа по правовому и экологическому просвещению различных слоев общества, вовлечению в процесс ФЛЕГ всех участников лесных отношений и заинтересованных сторон.

4. В сфере связей с общественностью:

Разработана коммуникационная стратегия ФЛЕГ для Беларуси. В рамках ее реализации, наряду с мониторингом освещения тематики ФЛЕГ в СМИ, проведен анализ информационной открытости лесного сектора, возможности участия заинтересованных в принятии решений в отношении обеспечения прав местного населения, малого и среднего бизнеса на легальное использование лесных ресурсов. Кроме того:

- подготовлены и изданы массовым тиражом ежегодники «Состояние и использование лесов Республики Беларусь» (за 2009 и 2010 гг.).

- проведены республиканская научно-практическая конференция «Лесной ресурс Беларуси» и республиканский научно-практический семинар «Актуальные вопросы стратегии развития лесного хозяйства Беларуси», в которых приняли участие специалисты лесного хозяйства, представители заинтересованных органов государственного управления, научных и деловых кругов, общественности, СМИ; изданы их материалы;

- расширен доступ широкой аудитории к информации о лесном законодательстве, лесах и лесных ресурсах, что позволило повысить открытость лесного сектора и улучшить осведомленность общества о правоприменении в сфере лесных отношений;

- расширены возможности участия заинтересованных в принятии решений в отношении обеспечения прав местного населения, малого и среднего бизнеса на легальное использование лесных ресурсов; организован мониторинг освещения проблематики ФЛЕГ в СМИ;

- проведен круглый стол «Содействие легальному использованию лесов местным населением и малым бизнесом - развитие сельскохозяйственного и лесного туризма», с участием всех заинтересованных сторон.

Благодаря целенаправленной работе со СМИ более чем в два раза возросло число публикаций и репортажей по актуальным вопросам лесного хозяйства, включая правоприменение, доступность для населения традиционных видов лесопользования. Существенно увеличилось количество выступлений работников леса. Составлен справочник СМИ, освещающих тематику ФЛЕГ, проведены специальные пресс-туры для журналистов. При поддержке Всемирного банка и Международного союза охраны природы такой пресс-тур был организован для журналистов стран - участниц программы ЕПД ФЛЕГ. Состоялось заинтересованное обсуждение белорусского опыта лесоуправления, лесопользования, экотуризма, что свидетельствует об информационной открытости лесного сектора Беларуси.

Активная коммуникационная политика способствовала привлечению внимания гражданского общества к вопросам противодействия незаконным рубкам и коррупционным проявлениям в лесном секторе, стимулировала расширение контактов работников леса с общественными организациями, местными советами и населением по вопросам, связанным с

применением лесного законодательства, охраной леса, лесопользованием. Правоприменительная деятельность стала понятнее для всех участников лесных отношений.

Таким образом, в целом Страновой план ЕПД ФЛЕГ для Республики Беларусь способствовал:

уточнению приоритетов в сфере актуализации и гармонизации лесного законодательства и первоочередных шагов по достижению цели;

усилению контроля за незаконными рубками, иными лесонарушениями и нелегальной торговлей древесиной;

развитию диалога и прозрачного процесса взаимодействия между государственными органами и ключевыми заинтересованными сторонами лесных отношений;

созданию дополнительных условий для развития малого и среднего бизнеса в лесной сфере;

улучшению информационной открытости лесного сектора (в том числе, в сфере лесных ресурсов, лесного законодательства, правоприменения, лесопользования);

повышению уровня регионального и субрегионального сотрудничества и информационного обмена по тематике ФЛЕГ;

Главный вывод - укреплен потенциал для совершенствования лесного законодательства, актуализации национальной лесной политики и стратегии, повышения эффективности управления и правоприменения в лесном секторе, организации более системной работы по проблематике ФЛЕГ в Беларуси.

В связи с этим представляется весьма перспективным положительное решение организаторов о второй фазе ЕПД ФЛЕГ (2013-2017 гг.). Для Беларуси представляются актуальными четыре направления ее реализации:

1. Актуализация национальной лесной политики, совершенствование лесного законодательства и правоприменения.

2. Оптимизация системы лесоуправления и лесопользования.

3. Повышение уровня профессиональной подготовки специалистов лесного хозяйства.

4. Реализация коммуникационной стратегии в лесном секторе, развитие лесного и экологического просвещения.

В частности, мы заинтересованы в разработке развернутого Стратегического плана развития лесного хозяйства Беларуси на период до 2030 г., как национальной лесной программы стратегически ориентированных действий.

Важно также продолжить работу над вопросами повышения прозрачности и эффективности системы управления и лесопользования; развития межсекторального взаимодействия и сферы лесных услуг; применения новых технологий учета и более совершенных способов реализации древесины; устранения причин незаконных рубок, торговли нелегальной древесиной и коррупционных проявлений; совершенствования коммуникационной стратегии; разработки и внедрения принципов профессиональной ответственности.

К реализации мероприятий второй фазы программы ЕПД ФЛЕГ будут привлечены представители организаций лесного хозяйства, научных и образовательных учреждений, общественных организаций, деловых кругов, общественности и СМИ, хорошо зарекомендовавшие себя при реализации первой фазы, а также представители других целевых групп и сторон, заинтересованных в совершенствовании и повышении эффективности лесных отношений и правоприменения в лесном секторе. Таким образом, мероприятия Странового плана программы ЕПД ФЛЕГ-2 призваны закрепить и развить достижения первой фазы программы, а также сохранить динамику и направленность процессов совершенствования национальной лесной политики, законодательства, противодействия незаконным рубкам леса и коррупционным проявлениям в лесном секторе, оптимизации системы лесоуправления и лесопользования, реализации коммуникационной стратегии.

A COLLISION BETWEEN ECOLOGICAL AND ECONOMIC REQUIREMENTS IN PRINCIPAL FELLING DESIGNING IN THE TERRITORY OF THE GOMEL ADMINISTRATIVE FORESTRY ENTERPRISE AND LINES OF ATTACK ON THE PROBLEM

Anton LUPHEROV [55]

The stands occurring in the territory of the Gomel administrative forestry enterprise fall under group I forests. Here, forest exploitation is encouraged in most of these stands. However, a number of restrictions are imposed on the major management unit here. For instance, exploitable ages of all the tree species involved in group I forests apart from the aspen are one age class higher than those of the forest trees growing in the stands that fall in group II forests. For the major part, principal felling is made in group I forests through shelterwood.

In principal felling it is necessary that the cost of cubic meter of harvested timber should be minimum.

All the branches of the national economy including forestry should carry out the important and stringent requirement of economy that current expenditures should be reduced to a minimum.

The principles of sustainable development enunciated at the UN ad hoc session held in Rio de Janeiro in 1992 are the retention of biodiversity, the balance of nature and the environmental functions of forests in principal felling. Carrying out these requirements serves to reduce the felling area and leave a number of middle-aged trees and hollow trees, which eventually increases the cost of cubic meter of harvested timber.

Hence the requirements of economy and ecology collide. Unfortunately, such a phenomenon governed by the current level of the economic development of the country, the ecological situation and other factors is typical of all the branches of the economy. In Belarus it is possible to reach a compromise between the requirements of ecology and economy. This can be demonstrated with principal felling made in the Gomel forestry enterprise.

One most important compromise between economy and ecology for the benefit of the latter was the assignment of the forest stands growing in the vicinity of Gomel to group I forests. The tightening of the requirements for the principal felling technology increases the cost of harvesting by 15-20% depending on the technology employed. Unfortunately, under actual conditions it does not always happen that the requirement that hollow trees and trees infected by fungi should be left is fulfilled. This is brought about by the necessity of observing sanitary regulations to prevent the distribution of pests and diseases.

On the one hand, an increase in the exploitable age of group I forests causes the allowable final cut to decrease at the cost of a decrease in periodic yield and on the other hand, this causes the yield of high quality timber to increase at the penalty of an increase in the percentages of large sawlogs and veneer logs. In this situation the percentages of sawlogs of first and second grades increase and those of small- and medium-sized timber decrease by 15-20%. Older exploitable ages conform to the stand ecological maturity, that is, the age at

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which all the stands of a definite major management unit afford the maximum carbon dioxide sequestration.

Although this fact is of global importance, the forestry enterprise derives no profit. The Gomel forestry enterprise has not been involved in the voluntary carbon quota market as yet. It is precisely lending obligatory nature to the carbon quota market that could profoundly change the consideration for the ecological imperative in the arrangement of forest exploitation, unite ecological and economic priorities and remove the current contradictions. By the most conservative estimate, the Gomel forestry enterprise, for one, could draw an additional income in the amount of US $ 100-150 thousand, which could remove the clash of ecological and economic interests of the forestry enterprise.

ПРАВОВЫЕ И ЭКОЛОГИЧЕСКИЕ АСПЕКТЫ БИОБЕЗОПАСНОСТИ ЖИВОТНЫХ В ПРИРОДНЫХ ЭКОСИСТЕМАХ

А.В. МОРОЗОВ [56], Ю. Г. ЛЯХ [57]

Abstract

Ecological aspects of infectious pathologies transmission among animals in natural ecosystems and agricultural complexes in Belarus have been insufficiently studied. The problem of transmission of pathogens to wild animals from the farm animals has not been studied, because of a large number of questions on utilization technology of animal waste. Utilization sometimes is in violation of sanitary rules, which creates real prerequisites for infection of wild animals. Legislation on wildlife protection needs to be improved. There are no veterinary rules for the organization, construction and operation of cattle cemetery and biothermal pits in Belarus.

Keywords: infectious diseases of wild animals, the circulation of pathogens, animal waste, protection of wildlife.

Введение

Сельскохозяйственные и домашние животные нередко вовлекаются в природные эпизоотические цепи и этим поддерживают существование природных очагов болезней. Причинами такого явления считают довольно широкие прямые и косвенные контакты доашних животных с дикими (Haenssle H.A., 2006). При определенных условиях больные сельскохозяйственные животные и продукты их жизнедеятельности могут стать источниками возбудителей болезней для восприимчивых диких животных (Конопаткин А.А., 1993). На настоящий момент инфекционные заболевания и пути их возникновения у диких животных в Беларуси мало изучены (Лях Ю.Г., 2010).

Законодательство в области охраны животного мира в Беларуси представлено рядом нормативных документов, однако, отдельные вопросы необходимо постоянно совершенствовать.

Экологические аспекты биобезопасности диких животных

Достаточно сложная экономическая ситуация в стране, технологические нарушения при строительстве животноводческих объектов, такие как отсутствие мест захоронений или объектов технической утилизации павших животных и технологического брака, создают предпосылки возникновения эпизоотий среди охотничьих видов животных. При любом уровне производства в животноводстве всегда имеет место непроизводительное выбытие животных.

Перевод животноводства на промышленную основу способствуют увеличению эффективности данной отрасли, однако несоблюдение ветеринарно-зоотехнических

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требований способствует широкому распространению инфекционных болезней, что ведет к увеличению падежа и непроизводительного выбытия животных.

Поскольку павшие животные являются основными источниками патогенных возбудителей, для предотвращения распространения инфекционных заболеваний, их трупы необходимо в кратчайшее время утилизировать. При условии соблюдения всех технологических условий, начиная от выбора места и строительства объектов утилизации и кончая эксплуатацией указанных объектов, полностью исключается возможность распространения болезнетворных микроорганизмов. На территории Беларуси существуют пять предприятий по утилизации погибших животных. Но, поскольку они находятся на достаточно большом расстоянии от большинства животноводческих и мясоперерабатывающих объектов, и сбор утильсырья организован плохо, работникам животноводческих объектов приходится самостоятельно производить захоронение, как павших животных, так и отходов боен. Как правило, для таких объектов (несанкционированных захоронений) хозяйственники выбирают самые глухие места, вдали от населенных пунктов в лесных массивах. Эти же места и являются зонами обитания охотничьих животных.

В результате, утилизация погибших (в том числе и от инфекционных патологий) сельскохозяйственных и домашних животных, а точнее их беспорядочное захоронение, вызывает серьезное беспокойство и в первую очередь по причине возникновения эпидемий, так как к таким местам имеют доступ дикие виды животных и птиц.

Опасения также вызывают самостоятельные захоронения погибших домашних животных (собаки, кошки и т.д.). Как правило, захоронение производится в лесопарковых зонах, лесополосах, на территории личных земельных участков, что является прямым нарушением санитарных и гигиенических норм (Куприянов А.А., 2010). Не вызывает сомнения то, что в данной ситуации дикие виды животных могут иметь прямой контакт с возбудителями инфекционных заболеваний.

Законодательные нормы в области охраны животного мира Беларуси

Нормы законодательства Республики Беларусь регламентируют определенные моменты указанной проблемы, однако существует и значительное количество не решенных до конца вопросов, и несоответствие реальной обстановки в стране с нормами законодательства.

Закон Республики Беларусь о животном мире и Правила ведения охотничьего хозяйства и охоты дают определения ряду терминов, из которых интересующими нас являются «Охотничьи животные», «Охрана объектов животного мира», «Защита диких животных». Следует отметить, что определения даны достаточно четко и однозначно.

Закон Республики Беларусь о животном мире определяет обязанности пользователей объектов животного мира в целях защиты диких животных, среди которых в том числе имеются следующие пункты:

- не допускать хранения и применения средств защиты растений, удобрений и других, опасных для объектов животного мира и (или) среды их обитания материалов, обращения с отходами без осуществления мер, гарантирующих предотвращение гибели, болезней диких животных и вредного воздействия на среду их обитания;
- обеспечивать соблюдение ветеринарно-санитарных правил, немедленно принимать меры по лечению больных диких животных, предотвращению распространения их болезней;

- в порядке, установленном законодательством об охране и использовании животного мира и законодательством в области ветеринарной деятельности, регулировать численность диких животных – переносчиков заразных болезней и (или) их возбудителей;
- своевременно информировать местные исполнительные и распорядительные органы о фактах массового заболевания и (или) гибели диких животных (О животном мире: Закон Республики Беларусь, 2007).

В соответствии с правилами ведения охотничьего хозяйства и охоты пользователи охотничьих угодий обязаны в том числе:

- планировать и осуществлять комплекс мероприятий, направленных на охрану охотничьих животных;
- организовывать в соответствии с законодательством захоронения бесхозяйных туш, их частей и внутренностей диких животных и информировать охотников об установленном порядке обращения с такими отходами.

По правилам ведения охотничьего хозяйства и охоты размещение в охотничьих угодьях туш или их отдельных частей, внутренностей животных запрещается, за исключением случаев, когда они выкладываются в качестве приманки для ружейной охоты на охотничьих животных из засады или безружейной охоты. По завершении охоты охотник должен обеспечить захоронение остатков туши или ее отдельных частей, внутренностей животных в местах, определенных пользователем охотничьих угодий в соответствии с законодательством. Обо всех случаях обнаружения раненых, травмированных, больных или погибших охотничьих животных нормированных видов охотники обязаны сообщать пользователю охотничьих угодий (Правила ведения охотничьего хозяйства и охоты, 2005).

В Законе Республики Беларусь о ветеринарной деятельности имеется довольно полное и ясное определение терминов «болезнь животных», «ветеринарное благополучие», «ветеринарные мероприятия», «животные», «животные-компаньоны», «заразные болезни животных», «эпизоотическая ситуация».

Ветеринарная деятельность, исходя из Закона, осуществляется на основании ряда принципов, среди которых:

- предотвращение вреда жизни и здоровью человека, имуществу юридических и физических лиц, окружающей среде, а также жизни и здоровью животных;
- приоритет профилактики болезней животных при проведении ветеринарных мероприятий;
- достоверность, доступность и открытость информации об изменении эпизоотической ситуации и принимаемых мерах по обеспечению ветеринарного благополучия.

В задачи государственной ветеринарной службы входит, в том числе, предупреждение возникновения и ликвидация очагов заразных болезней животных и болезней, общих для человека и животных.

Специалисты государственной ветеринарной службы в пределах своей компетенции обязаны, в том числе, осуществлять меры по предупреждению возникновения и ликвидации очагов заразных болезней животных и болезней, общих для человека и животных.

По поводу обращения с павшими животными, а также продуктами животного происхождения, не соответствующими требованиям ветеринарно-санитарных правил в Законе о ветеринарной деятельности имеется лишь одна статья, которая изложена

общими формулировками: «Утилизация, захоронение или уничтожение трупов животных, а так же продуктов животного происхождения, не соответствующих требованиям ветеринарно-санитарных правил осуществляются в соответствии с требованиями ветеринарно-санитарных правил на специальных утилизационных заводах (установках) или в местах, согласованных с уполномоченными государственными органами и учреждениями, осуществляющими государственный санитарный надзор, и государственной ветеринарной службой» (О ветеринарной деятельности: Закон Республики Беларусь, 2010).

Закон о животном мире регламентирует нормирование в области охраны и использования животного мира, которое обеспечивается установлением, в том числе и зоотехнических, зоогигиенических и ветеринарно-санитарных правил.

Среди действующих ветеринарно-санитарных правил, которые касаются обращения с павшими животными и отходами животного происхождения имеются лишь «Ветеринарно-санитарные правила для организаций, осуществляющих переработку, утилизацию трупов животных и отходов животного происхождения». Данный документ регламентирует деятельность утилизационных заводов. Однако утильзаводы способны переработать лишь незначительное количество отходов в связи с невысокими производственными мощностями и высокими требованиями к санитарному состоянию поступающего сырья. Значительная часть павших животных и отходов животного происхождения должна утилизироваться на скотомогильниках и в биотермических ямах (Ветеринарно-санитарные правила для организаций, осуществляющих переработку, утилизацию трупов животных и отходов животного происхождения, 2010).

На данный момент существует только проект постановления Министерства сельского хозяйства и продовольствия об утверждении ветеринарных правил к обустройству и эксплуатации скотомогильников и биотермических ям. Следует отметить, что текст проекта этих правил изложен довольно подробно. Ясно изложены требования к обустройству и эксплуатации скотомогильников и биотермических ям. Текст документа учитывает не только вновь строящиеся скотомогильники, но и существующие, и предусматривает приведение их к соответствующим нормам в течение года со дня принятия постановления. Но все еще остаются неясными сроки принятия постановления.

Большинство существующих скотомогильников совершенно не соответствуют необходимым санитарным нормам. Как правило, располагаются они в лесополосах в отдалении от населенных пунктов, без ограждающих конструкций, въездных ворот. Полевые исследования данных несанкционированных мест захоронения трупов животных подтверждают контакты диких видов животных с отходами, расположенными на скотомогильниках: к скотомогильникам проложены тропы диких животных, отходы животного происхождения растаскиваются от мест захоронения на расстояние до 1000 м. Кроме того, бактериологические исследования паталогического материала с мест захоронений и прилегающей к ним территории подтверждают наличие целого ряда патогенных микроорганизмов.

Заключение

Законодательные акты в области охраны животного мира регламентируют терминологию, обязанности, принципы, задачи, нормирование с целью достижения санитарного благополучия на территориях обитания диких животных, однако тексты

изложены общими формулировками и не имеют ссылок на конкретные подзаконные акты и инструкции.

Общие принципы обращения с павшими животными в сельском хозяйстве вполне понятны, однако отсутствуют ветеринарно-санитарные правила по обустройству и эксплуатации скотомогильников, имеются лишь единичные упоминания о правилах утилизации животных для частных случаев (например, сжигание биологических отходов при гриппе птиц и т.д.).

Совершенно неясной остается сфера обращения с павшими дикими животными и их останками в охотничьих хозяйствах, а также вопросы профилактики и лечения инфекционных заболеваний среди популяций диких животных.

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LEGAL FRAMEWORK AND THE SUSTAINABLE DEVELOPMENT OF FORESTS IN ALBANIA

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Abstract

This paper will comprise an analysis of the policies and legislation on forests and their sustainable development in Albania. It will scrutinize the current legal framework on forestry, the ownership structure of forests and what is the practical impact of these forms of ownership over the forestry.

After communism, the new legislation defined three types of property over forests in Albania: state owned, communal, and private. The reform in forestry started with the privatization of harvesting and service activities, the transfer of the majority of forests under the ownership of communes and municipalities, and the restitution of forests to the former owners. Today, in the use of state owned forests still continues the mentality inherited from the communist era, people exploit them without due care. Communal forests are being used in common by the entire village or by rural families. On the other hand, private forests are being carefully managed by their owners.

Albania is a potential candidate country for EU membership, so, among others, it is in the process of the approximation of forest policies and legislation with the *acquis communautaire*. This analysis will look into the results of the policy and legislative reform and identify the successes and handicaps of the process. Further, a comparison will be conducted between the EU and Albanian legislation in the field of forestry.

This study will reach conclusions and provide recommendations regarding the continuation of the approximation of legislation, the beginning of the privatization of the state owned forests, the acceleration of the process of forest restitution to the former owners, the acceleration of the process of transferring the rights from the local authorities to the village and the rural families for their own use. These proposed legal measures and the dissemination of the best practices of forest management will ensure the sustainability of forests, the increase of the income, especially in the remote mountainous areas, and the protection of the environment.

Keywords: forest, sustainability, legislation, reform, approximation, integration

1. Introduction

Forests have played an important role in the development of the economy and society in Albania. At present, they cover an area of 1,042,790 hectares, equal to 36% of the total area of the country. The forest fund contains around 350 species of trees and shrubs. Apart from the economic aspects, forests provide environmental, social and cultural benefits.

Because forestry has traditionally been considered as closely related to agriculture, there is no separate data regarding its contribution to the country's economy. The statistics show that their share in the national economy has been reduced over the years, where agriculture's contribution has fallen from 42.5% of the Gross Domestic Product (GDP) in 1992, to 20.7% in 2005 (INSTAT, 2012). Around half of the population of Albania lives in

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rural areas and they rely on agriculture and forestry for their livelihood, the majority of them living and working in small farms. This puts an enormous pressure on forest resources, which have to provide the subsistence means for the rural families. Half of the population lives in the areas where around a third of the forests are situated, whereas in the mountainous areas where there are two thirds of the forests, lives only a third of the population. This clearly affects disproportionately the forest resources, with a higher rate of exploitation in the areas that are more densely populated.

In the current ownership structure over the forests in Albania, 98% of the forests are publicly owned, out of which around 50% are transferred for 'use' by the communes (the so called 'communal forests'), whereas 48% have remained under the administration of the Forest Service, and nearly 2% have been returned to the former owners.

State forests are administered and managed by the Forest Service Directorates in the districts, which supervise also the implementation of the law on forests by the local authorities (communes and municipalities) and private owners. Regarding communal forests, the tradition in Albania has been such that forests close to the village have been possessed by the village, to be commonly used by the entire village for wood, grazing, and fodder, and by each family, using separate forest plots to fulfil their own needs. The particularity of these forest areas is that property titles over them have never been formally recognized, i.e. the possessors have never had ownership certificates for them, because otherwise they would have to pay taxes. Formally, communal forests are owned by the communes or municipalities and managed by their administrative units.

As far as private ownership of forests is concerned, the privatization of the forest fund in Albania is not allowed, being still considered as a strategic sector, even the areas of shrubs and degraded forests that constitute 60% of the forest fund. The existing legal framework in Albania provides only for the restitution of those forests that were privately owned before the establishment of the communist regime in 1944, and only up to a maximum of 100 hectares for each former owner. This means that privately owned forests today constitute only 2% of the forests in Albania, and if the whole restitution process is complete, can reach as much as 5%.

2. Historical development of the forestry legislation in Albania

In order to better understand the current situation regarding the policies and legislation on forests in Albania, this short description of the historical development of the forestry sector precedes the analysis of the Albanian legal framework.

2.1 Early customary regulations regarding forests

The earliest regulations regarding the use of forests in Albania were made in the Code of Lekë Dukagjini, which was a code of the XV century, comprised of customary rules that governed the lives of the clans of northern Albania, rules that have evolved through centuries.

In its chapter 12, the Code stated: "Any house that billows smoke [i.e., where people live] must have its own land... [t]he property of the house includes courtyard and garden, vineyards and fields, meadows and woodlands, roads and paths, and boundaries in the mountains, in the lowlands, and in the plains... [T]he fields, vineyards, garden and meadows, woodlands, small forests and thickets are divided by boundaries."

There were also rules regarding the common property of the village, which was defined as "...[t]he area held in common by a village for pasture, timber, firewood, hunting, and for other needs... [C]ommon property is not divided, but every inhabited house in the village has the right to the common property of the village." Land boundaries, either between

private properties, or between them and the common property, were strictly respected by all. The Code stipulated that "Once boundaries are fixed, they are never moved again". Severe punishments were foreseen for the violation of the rules protecting private and common property. The strict rule to be observed sanctioned that "If somebody's flock enters another's pasture a hundred times in one day, the owner of the flock must pay that many animals as a fine."

During that period, almost similar customary rules included in the Code of Laberia, have been applied in the areas of Southern Albania. At that period of time when the Codes were in force, forests and pastures fulfilled the needs of villagers and one could not speak of natural resources degradation (Muharremaj, 1997). A few remnants of the Codes regarding the village forests are still visible in some remote regions of the country.

2.2 Forestry legislation before 1945

After almost five centuries under the Ottoman Empire and the implementation of the ottoman legislation in Albania, the very first legal act related to forestry enacted in Albania was the "Law on forests and pastures" of 27 January 1923. It defined three categories of ownership over forests: state owned, communal, and private. Property titles over land and forests were recognized on the basis of official documents and with clear designated boundaries. The law prohibited the clearing of state forests for arable land, when there was no clear valuable agricultural profit to be gained. The right of forest harvesting was granted only through a special permit issued by the Forest Service. The same was true for the collection of branches, litter or earth, and for grazing the livestock. Lopping on old trees was allowed only by special permission. Also, secondary forest products could only be collected after acquiring special permits. Livestock grazing was allowed only in authorized areas, and there was a 10-year ban on grazing in harvested forests, in order to ensure their regeneration.

Every village had the duty to take measures against forest fires, including those that were private ones, including reforestation duties in the degraded areas, by planting new seedlings. The law defined the technical criteria regarding the logging of mature trees, forest regeneration and management. The law dealt also with the amount of forest wood that could be cut, the location where this could be done, and all the operations in the forest, that could only be authorised by a forester.

A flat tax of 7% on the market price was applied for wood that was logged in privately owned forests. The wood used for the construction of private homes was excluded from taxation, whereas on wood logged for industrial purposes a forest tax would be paid, at the level decided by the municipality. Taxes from the wood and non wood products taken from private forests had to be paid to the state before their removal. There were stiff penalties against illegal logging. In these cases, apart from the heavy penalty to be paid, there was also the obligation to replant the area where the trees were cut. Sanctions were also stipulated for other types of damage caused to the forest, such as arson, livestock grazing, etc.

2.3 Forestry policy and legislation during the communist regime, 1945-1990

With the establishment of the communist regime in Albania after the end of World War II, the nationalization of the entire economy in 1945 included also forests and pastures. Private ownership on forests was totally eradicated by 1966, and the whole area covered by forests and pastures was declared state property in the Constitutional provisions of 1976.

The irrational policies during totalitarianism aiming at the fulfilment of all the country's needs for food through domestic production, led to the clearing of forest areas in

order to open arable land, almost in all plain areas, even in mountainous terrains, thus destroying huge areas of valuable forests. Being unsuitable for crop production, most of them were abandoned after only two or three years. Many former private forests and pastures were also destroyed under this policy, mainly in the vicinity of villages and inhabited areas. At present, these lands are among the most degraded ones because of the intensive cutting and overgrazing, combined with frequent fires, having caused severe erosion, which is a widely spread problem around the country.

Despite the existence of the legal framework, its implementation was a serious problem, which still persists today. There were numerous laws and regulations during this period for forests and pastures, but they were only partially implemented. As in all areas of the economy, people had no incentives to protect state-owned forests, while they were only interested in protecting the forests that were used by them and their village.

2.4 Current forestry policy and legislation

With the collapse of the communist system in Albania, following the first democratic elections, the newly elected parliament enacted a new law on forests in 1992, which started the process of restructuring of the forest administration and the privatization of forest harvesting activities, the restitution of forests and pastures to the former owners, the transfer of forests to the local government units and users (villages, families, etc.), the collection of secondary forest products (medicinal plants) by private entities, and the establishment of joint ventures and private enterprises.

After five decades of exclusive ownership by the state, the new legislation defined three types of property over forests: state owned, communal, and private. Apart from the classification based on the property types, forests were also classified according to their function, into productive forests and protective ones, with the aim of emphasising the protective role of forests, as compared with the previous policies that focused mainly on the production. Among others, regulations were introduced regarding the protection of forests from fires, grazing, etc. The law on forests and the bylaws have been amended several times, in order to adapt to the changes and reflect the new realities.

There is a ‘Green Strategy’ in Albania, regarding the development of agriculture, where the objectives for the forestry have also been set. Also, there is a separate Strategy for the Forests and Pastures, with these main objectives: the protection of the entirety of the forest fund, its sustainable management, the application of the market economy principles in all the aspects of the forestry sector, the transfer of the forests for communal use, the development of tourism, etc.

Some of the fundamental aspects of the policy and legal reform on forests include: the shift from the planned and centralized economy to the market economy, the restitution of forests to the former owners, the privatization of production and service activities in forests, and the realization of the transfer of over 50% of the forested area under the ownership of communes and municipalities.

Because the law on forests of 1992 had many gaps and its implementation was problematic, a new law on forests was enacted in 2005 (hereinafter ‘the Forest Law’), which has been amended several times since then, in order to reflect the changes that have happened in the forestry sector. The new legislative framework provides the basis for the much needed institutional reform, by establishing the institutions that should implement it. At the central level, the responsible authority is the Directorate of Forests and Pastures, in the Ministry of Environment, Forests, and Water Administration (MEFWA), and the Agency of Environment and Forests as the subordinate of the Ministry. For the state owned forests in the districts the

responsibility rests with the District Forest Service, while for the communal forests responsible authorities are the relevant sectors of the communes and municipalities.

The new law divides the forests into public and private, where the public forests are under the ownership of the Forestry Service at the central level, and under the ownership and use of the communes and municipalities, at the local level. Public and private forests are managed according to the management plans, which define the measures for their protection, development, maintenance, and harvesting.

According to statistics, on average, private forest ownership stands at fifty percent in the European countries (Schmithüsen and Hirsch, 2010). In Albania, the experience shows that private forests are better protected and managed than the public ones. Thus, legal provisions should allow for the further decentralization of the forest management, by transferring the communal forests from use, to ownership of the users, the village and the agricultural families. The village ownership of forests has a long customary tradition, which should be reinstated by law.

3. Current legal framework and the approximation process with the *acquis communaitaire*

European integration has been one of the main priorities of the Albanian foreign policy since the fall of communism in the beginning of the 90's. An important part of the overall integration process is related to the approximation of the Albanian legislation with the *acquis communautaire* on the environment. In this regard, the drafting of policies and legislation on forests constitutes one of the main areas that have undergone a deep reform, which will continue even further, towards reaching the European standards on forest protection and their sustainable development.

In the current stage, Albania is a potential candidate country for membership in the European Union (EU). It has signed the Stabilization Association Agreement (SAA) with the EU on 12 June 2006, entering into force since 1 April 2009. The ratified international agreements come immediately after the Constitution in the Albanian legal system and are considered part of its internal legal order. As far as environmental issues are concerned, pursuant to Article 108 of the SAA, the parties undertake to develop and strengthen cooperation in the fight against environmental degradation, in order to promote environmental sustainability. Cooperation mainly focuses on the priority areas related to the *acquis communautaire* on the environment. With the aim of approximating the Albanian environmental legislation with that of the EU, a National Plan has been approved for this purpose.

Referring to the provisions of the Treaty establishing the European Community, forestry was not among the areas where the Member States would have a common forestry policy, so they would be themselves responsible for this sector's policies, with the management of forests left to each country. The integration of forest policies is aimed through the coordination of other sectoral common policies, such as those on the Environment, Energy, Agriculture, Industry, Trade, etc. But this has drawn the critics to argue that having the forest policies scattered in so many sectors within the EU has led to their fragmentation, making it impossible to have a coherent forest policy (EU Forestry Strategy Report, 2011). On the other hand, all the Member States of the EU, as well as the EU itself as an international organization, are parties to the Ministerial Conference on the Protection of Forests in Europe (MCPFE), which includes all other European countries, and is the body responsible for the development of common strategies related to forestry in the European continent. It was in the Ministerial Conference held in Oslo, Norway, in June 2011, that the

Ministers responsible for forests in Europe made the important decision to sign the mandate for negotiating a Legally Binding Agreement on Forests in Europe (Oslo Ministerial Decision, 2011).

Moreover, the EU as a separate entity in international law has become a party to the Convention on Biodiversity (CBD), the UN Framework Convention on Climate Change (UNFCCC), and the UN Convention to Combat Desertification (UNCCD). Despite such a fragmentation, there are mechanisms of cooperation and coordination related to forest issues of a transboundary impact, such as forest fires, forest diseases, forest product trade, etc. In the European integration framework, Albania has become a party to both the mechanisms of cooperation: the EU, through the SAA, and the MCPFE, through its membership, whereas in the wider context, it is a party to all the aforementioned international conventions.

Taking into consideration the multifunctional and the important role that forests play in peoples' lives, by supporting their livelihood, their effect in the climate and soil, their role as provider of sustainable energy and raw materials, a growing body of legislation is dedicated to forestry. Within the EU legislation, one of the first acts related to forestry was the EU Forestry Strategy, stipulated in the Council Resolution 1999/C56/01 of 15 December 1998, "On a forestry strategy for the European Union" (EU Council, 1998), which was accompanied by the EU Forest Action Plan. The main pillars of the Forestry Strategy rely on a sustainable forest management, the application of the principle of subsidiarity, the protection of the forest heritage and biological diversity, and the increase of efficiency in the communication, coordination, and cooperation among the Member States. Taking into account the further expansion of the EU, the strategy reiterated that the potential new members could be supported through the mechanisms designated for the agricultural and rural development, which could also cover forestry.

Based on this, the European Council issued Regulation 1085/2006 of 17 July 2006, establishing the Instrument for Pre-Accession Assistance (IPA) for candidate countries, which should focus on the adoption and implementation of the full *acquis communautaire*, and the implementation of the Community's agricultural and cohesion policy (EU Council, 2006). Albania is one of the beneficiaries of the IPA, together with the other Western Balkan countries and Turkey.

Acting on the obligations undertaken in the framework of the Stabilization and Association process, on the EU Forestry Strategy, and on the Pan-European Biological and Landscape Diversity Strategy, which was adopted at the Third Ministerial Conference "An Environment for Europe", held in October 1995, in Sofia, Bulgaria (Council of Europe, 1995), Albania has also adopted a National Strategy for the Forests and Pastures in 2003 (MEFWA, 2003). The strategy defines the main lines of action for the following 25 years, constituting at the same time an action plan for the next decade. Among its' proclaimed aims are the preservation and re-establishment of natural equilibrium of forest resources, the sustainable administration of the forest products, the achievement of an optimal contribution of the forest sector in the economic development, fight against poverty, and the sustainable development of Albania.

In general, many EU directives have been transposed into the Albanian legislation, but some important aspects have not been included in the Forest Law. Neither the privatization of forests is allowed, nor the sale of products extracted from forests given for use by the villagers. The same holds true for the denial of ownership of villages over forests that have traditionally been under common use. Also, the restitution of forests to the former owners is being carried out very slowly, with no deadline set for the completion of the process. As such,

there is a need for the revision of the Forest Strategy and the inclusion of these important aspects in the new strategy.

The EU Council Regulation 3528/86 of 17 November 1986, as subsequently amended in 1989, 1992, and 1997, focused on the protection of forests, by setting up a scheme for monitoring the damage caused to forests by the atmospheric pollution. Again, the final aim was to assure the productivity of agricultural land, which is inextricably dependent on the protection that forests offer to them. All the Member States were to assign a number of observation areas, thus creating a network that through continuous observations would create an inventory of the actual damage caused to the forests by atmospheric pollution. All the findings would be used by the Member States to draft forest health reports, using uniform scientific methods, which should be submitted to the Commission for evaluation.

These aspects have been included in the Forest Law of Albania and the monitoring is carried out by the Agency of Environment and Forests and each District Forests Service. A number of observation plots have been established throughout the country. However, the number and frequency of monitoring, and the equipment available are inadequate, but more importantly, there is insufficient funding for the prevention and the elimination of the damages caused to forests.

Apart from the atmospheric pollution, the other cause of severe damage to forests is fire, which is a serious obstacle to the sustainable development of forests. In the framework of measures taken to combat this negative phenomenon, the Council adopted Regulation 2158/92, of 23 July 1992, on protection of the Community's forests against fire (EU Council, 1992), which was subsequently amended by Regulation 308/97, of 17 February 1997. The purpose of the regulation was to set up a scheme for the protection of forests against fire, including a data bank for the Member States and the Community, in order to reduce the number of forest fires and the areas affected by them. The scheme would include measures to identify the causes of forest fires, improvement of the system of prevention, improvement of the forest monitoring systems, etc. As a result, the European Forest Fire Information System (EFFIS) has been established which serves not only the EU countries, but also the neighbour countries, with information on fires in the forests across Europe.

In the National Strategy on Forests and Pastures Fire Management of Albania have been included the principles of the Regulation 2158/92. During the high risk summer season the number of observers is increased and there are several activities undertaken for raising public awareness for the protection of forests from fire. However, the forest fires remain a serious problem, because of the insufficient infrastructure, equipment and funding. Apart from the natural causes of fire, since Albania belongs to the high risk area of the Mediterranean, human activity exacerbates the problem, where especially arson, remains an endemic problem in Albania. During the arid summers, fires set by the shepherds for clearing the area for new pastures are a common phenomenon. Despite the legal provisions that stipulate punishments for damage caused by arson, such punishments are rarely handed out for damage caused to forests.

Closely connected to the protection of forests is the protection of wild fauna and flora, and for that purpose it was adopted the Council Directive 92/43/EEC of 21 May 1992, on the conservation of natural habitats and of wild fauna and flora. This directive urged Member States to take economic and social measures, in order to enhance the conservation of natural habitats and of the species' habitats, thus maintaining biodiversity. This is also known as the "Natura 2000" Directive, because it required from the Member States to establish a network of areas of conservation, including the special protection areas (EU Council, 1992). Since the first adoption, it has been amended in 1997, 2003, and 2006, where Member States were required to adopt conservation measures, including specific management plans for these

areas, which should be integrated into other development plans, together with other necessary administrative measures.

Very often, central and local authorities have to face the difficult dilemma of pursuing the protection of the environment or the economic development of a particular area. In order to allow for the implementation of development plans that are of particular public interest, even when they are detrimental to those protected areas, the directive foresees the possibility of designating other protected areas in different locations, in order to compensate for the areas lost to the development plans. Thus, the countries ensure the preservation of the coherence of Natura 2000, while having the obligation to inform the Commission of all the measures taken to compensate the lost areas.

In the high mountains of Albania there are still virgin forests with special values as regards biodiversity, landscape beauty, and natural monuments. Following the principles of Natura 2000, mainly in these areas have been established by law 15 National Parks, which together with the Protected Areas cover 434,298 ha, or 15% of the total area of the country (MEFWA, 2011). Based on the categories of the International Union for Conservation of Nature (IUCN), the Law on the Protected Areas has divided the protected areas into six protection categories, according to their importance. The forests in these areas are excluded from exploitation, and certain activities within them can only be conducted through special permit. But, as in many other former communist countries, illegal logging remains a serious problem in Albania, a persistent threat to forests and biodiversity that has led to massive deforestation and degradation. The Forest Law has transposed the Regulation 995/2010 of the European Parliament and of the Council of 20 October 2010, the so called 'Due diligence Regulation', which sets obligations for the operators who trade timber and timber products in the market, following the 'Forest Law Enforcement, Governance and Trade (FLEGT): Proposal for an EU Action Plan'. The aim of the regulation is to prevent illegally harvested timber and timber products from entering the market. Because of the widespread corruption, even among the law enforcement agencies, the impact in practice of such legal measures has been minimal in Albania. On the other hand, a considerable proportion of the illegally cut wood is destined for firewood, so there is no reliable data on its exact volume. Half of the population of Albania lives in rural areas, where the only source of energy for cooking and heating is firewood. The majority of the families in these areas are heavily dependent on forests. The breakdown in law and order in 1997 had disastrous consequences on the forests because of the sharp increase in the volume of the illegally logged forests, estimated at over 500,000 m³ of wood. Nowadays, this volume is estimated at 10,064 m³ (Regional Environmental Centre, 2010).

All the above mentioned regulations and directives, including the Council Directive 409/79 on the conservation of wild birds, the Council Directive 88/332/EEC of 13 June 1988, on the marketing of seeds, and the Regulation 2152/2003 of the European Parliament and of the Council of 17 November 2003 concerning monitoring of forests, have been transposed into the Albanian legislation through the Forest Law of 2005.

The amendments made to the Forest Law in 2007 added an entire chapter to the law, making compulsory the establishment of a monitoring system and data on forests, with direct reference to the EU directives and the system used by the Food and Agriculture Organization (FAO). With regard to the role of forests in the carbon sequestration, the amendments made a specific reference to the Kyoto Protocol, where MEFWA is assigned as the responsible authority for its observation, the calculation, and trading of the carbon quotas. Moreover, another draft law is being prepared by MEFWA, aiming at providing the legal basis for the sustainable development, the conservation and the administration of forests, the improvement

of the forest infrastructure, their monitoring system, and the harmonization of the informative system of forests and pastures. The draft will be consulted with the stakeholders, central and local authorities, users, owners, communal forest associations, and environmental NGOs, in order to ensure a transparent process and in compliance with the provisions of the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters.

Further, another draft law which has been prepared by MEFWA is the one "On the Genetic Material in Forestry", which transposes the Council Directive 1999/105/EC of 22 December 1999, on the marketing of forest reproductive material. This is one of the most recent developments in the Albanian efforts to approximate its forestry legislation with the *acquis communautaire* in order to provide the legal basis for the sustainable management of forests, so that they can fulfil their economic, social, and ecologic functions.

4. Conclusions

Since the signature of the Stabilization Association Agreement with the EU, Albania has undertaken a deep reform in the forestry sector to bring its policies and legislation in line with the *acquis communautaire*. As a result of the efforts to shake off the legacies of the past, now there are strategies in place and the approximation process is continuous. In this regard, a giant leap forward was the transfer of forests in the recent years from the central government to the local authorities.

Despite all the improvements in the legal framework on forests, there is still concentration of competences in the hands of the central government institutions, even for matters that could very well belong to the local government, such as: the management and exploitation of forests, removal from the forest and pasture fund, change of the use of land, the rehabilitation of the forest and pasture ecosystems, the issuance of permits and different penalties, etc.

The rights of use over forests and pastures are not complete and clear enough. They do not properly include the real users: village, families, and users' associations. Through the transfer of forests and pastures under the ownership of local government, the process has only gone half-way, detailing only the procedures of transfer from the forest service to the commune or municipality, but not up to the main user that is the village, the families, and associations. There are no criteria and rules on forest exploitation for timber and firewood, for wood and non-wood products, for lopping and grazing, and for pastures under communal use, for selling the wood materials and other products, when the harvesting is above their needs. In such cases, legal provisions should allow the sale of products by the commune, or by the village, the agricultural families and users' associations, in order to increase their income and alleviate poverty.

Also, there are neither legal provisions for the relations between the central government and the local government regarding the communal forests, in particular with the users, the agricultural families and users' associations, nor for the relations between the local government, the Forest Service, the users and their associations. There is a lack of incentives for the users and associations for the direct profits they could have as a result of the good management of natural resources, and there are no clear provisions for the relations between the central government and the local authorities with the communal forest users and the private owners.

It has become necessary now, the revision and completion of the Strategy for the Development of Forests, which should serve as the basis for deepening the reform in the forestry, especially on issues related to the decentralization of the forest management. Despite

the efforts towards decentralization, there is still a concentration of competences in the hands of central authorities. The Forest Service supervises the implementation of the law on forests on state owned and private owners. The latter still need the approval of the Regional Forest Service for any activity on forests. State institutions have to decide even on issues that could be the authority of local government, such as the removal of areas from the forest fund, the issuance of permits and imposition of fines, etc. Moreover, there are overlapping competences of the National Council on Territorial Adjustment, the Council on Basins, the Council on Waters, the Council on Tourism, etc., all these with an effect on forests. The role and competences of local authorities should be enhanced towards the natural resources management, including forests, complying thus with the principle of subsidiarity.

As far as the specific law on forests is concerned, it cannot be continued with countless amendments to the existing law. A new law must be enacted, which should as an imperative, include the right to privatize parts of the forest fund. The law should also provide for the transfer of communal forests from use to ownership, when the forest has been sustainably managed by the user. This could represent a novelty in Albania, since there are no such previous experiences in Europe. The Albanian experience shows that forests possessed with property titles are managed and protected efficiently. In order to guarantee the subsistence and alleviate the poverty of farmers in the rural areas, it is necessary that the law guarantees to the users, villages and families, the right to sell the products harvested in the communal forest. It should also put a stress on the forest protection, by providing clearer measures to be taken, in compliance with the Forest and Pastures Strategy, and include complete provisions on forest monitoring, which are lacking.

Because of the important role that forests play in the protection of the environment, biodiversity, in the climate change adaptation, and in the country's economy in general, Albania not only has to continue the reform in the forestry sector to bring its policies and legislation in line with the *acquis communautaire*, but also to ensure that they are implemented in practice, as the only way to successfully complete the European integration process.

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ОСНОВНЫЕ НАПРАВЛЕНИЯ РАЗВИТИЯ ЛЕСНОГО ХОЗЯЙСТВА БЕЛАРУСИ

А.В. НЕВЕРОВ[59]

Резюме

The paper analyzes the status and trends of the major forestry sector in Belarus, identifies priorities for improving the economic mechanism and organizational structure of the forest sector.

The role of the forest sector in the national economy and the main challenges of intersectoral cooperation. The methods and tools of economic reforms in the forestry sector in the context of market-oriented reforms. Explored promising areas of Forest Economics. Defined mission, strategic objective and strategic objectives of forest management. Basic lines of improving the economic mechanism of the forestry justified infrastructural development oriented and promising organizational model of the industry.

Ключевые слова: forest economics, economic instruments, priorities, organizational model

1. Анализ состояния и основные тенденции развития лесного хозяйства Беларуси

1.1. Место лесного сектора Беларуси в мировой и национальной экономике

В Республике Беларусь лесные ресурсы являются одним из главных видов природных богатств: по состоянию на 01.01.2010г. общая площадь лесного фонда составляет 9417 тыс. га, площадь лесных земель – 8598 тыс. га, из них покрытых лесом – 8002 тыс. га, общий запас лесных насаждений – 1566 млн. м^3,лесистость территории – 38,5 %.

На душу населения в Беларуси приходится 161 м^3 запасов леса на корню, что в 2,4 раза превышает среднемировой уровень. По наличию площадей лесных земель на 1000 чел. (866 га) страна уступает в Европе лишь Финляндии, Швеции, Норвегии, Латвии, Эстонии, а также России – самому многолесному государству мира.

Лесной сектор страны характеризует «деревообрабатывающая» специализация: его удельный вес в мировом производстве пиломатериалов – 0,54%; древесноволокнистых плит – 0,45; древесностружечных плит – 0,4% (при численности населения в мировом сообществе – 0,15%).

Наиболее слабое звено лесного сектора Беларуси – целлюлозно-бумажная промышленность. По производству бумаги и картона на душу населения отставание от развитых лесных держав – Финляндии, Швеции, Канады, США – идет в десятки раз. Дальнейшее развитие целлюлозно-бумажного производства целесообразно осуществлять с позиции экономической безопасности страны (в отношении удовлетворения внутренних потребностей в данном виде продукции), а также с точки зрения сравнительных преимуществ на европейском рынке, в том числе учитывая расширяющийся спрос на биотопливо.

Вклад лесного комплекса в ВВП страны составляет в настоящее время 1,6%. Во времени удельный вес лесного комплекса в национальной экономике падает (в 1990 – 2%, в 2010 – 1,6%), что свидетельствует о структурных сдвигах в пользу более наукоемких и конкурентоспособных отраслей промышленности и других секторов производства товаров и услуг. Удельный вес лесного хозяйства в ВВП невелик и составляет 0,5%.

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На долю лесопромышленного комплекса Беларуси (ЛПК) в 2010 г. приходилось 1,1% валового внутреннего продукта и 4,2% от общего объема продукции всей промышленности страны. На фоне других государств СНГ эти показатели являются удовлетворительными, но их уровень значительно ниже, чем в странах с развитой лесной индустрией.

Лесопромышленный комплекс страны является экспорто ориентированным: ежегодно за рубеж поставляется порядка 40-60% всей произведенной им продукции, в том числе свыше 90% общего объема выпуска древесноволокнистых плит и спичек, 85% - клееной фанеры и обоев, более 50% мебели и древесностружечных плит.

На долю продукции лесопромышленного комплекса в 2010 г. приходилось 3,7% всего объема экспорта страны. Наиболее весомым этот показатель был в 2000 г. - 6,1 %, затем он постепенно снижался.

Объем экспорта продукции лесной, деревообрабатывающей и целлюлозно-бумажной промышленности за 2010 г. составил 931,3 млн. долларов, что больше чем в 2009 г. на 214,6 млн. долл. или 29,9%. Объем экспорта продукции лесного хозяйства составил в 2011 г. 133,8 млн. долл., что на 26,3% больше по сравнению с 2010 г.

В настоящее время вклад лесного комплекса в топливно-энергетический потенциал страны (33 млн. т.у.т.) составляет около 6%, в перспективе (2015-2020 гг.) – 11,5%. К 2020 г. вклад местных, в т.ч. возобновляемых ресурсов составит 16,3% против 8,3% в настоящее время.

Лесной капитал в национальном богатстве представлен 6% и составляет в абсолютном исчислении 12 млрд. долл. США, что говорит о его большом значении в удовлетворении разнообразных потребностей белорусского общества.

1.2.Межсекторальное сотрудничество лесного хозяйства

Межсекторальное сотрудничество лесного хозяйства имеет два основных направления развития: рыночное и внерыночное (экологическое).

Развитие рыночных отношений (первое направление) с традиционной ресурсно-сырьевой ориентацией (как сырьевая база ЛПК) положительно повлияло на динамику развития комплексного лесного хозяйства и явилось основой развития новых производств, в частности, производства древесного топлива, которое характеризуется достаточно высокой эффективностью. Получили свое развитие охотничий туризм, побочное лесопользование (доходы от них в 2010 г. составили 6188,8 млн. руб., в т. ч. от иностранного охотничьего туризма – 1960,9 млн. руб.).

Второе (внерыночное) направление межсекторального сотрудничества в первую очередь влияет на содержание и структуризацию лесопользования, распределение лесов по группам и категориям защитности.

В лесном фонде Республики Беларусь средообразующие, средозащитные и рекреационные функции (социально-экологические функции) доминируют над другими (в т. ч. и сырьевыми функциями лесов) – 51%, в 70-80 годах прошлого столетия – 1/3.

Исходя из анализа основных тенденций лесопользования, правомерно констатировать, что леса Беларуси из преимущественно экономического ресурса трансформировались в социально-эколого-экономический ресурс, удовлетворяющий расширяющиеся во времени разнообразные потребности в продуктах и полезностях леса. В данном аспекте усиливается роль межсекторального сотрудничества с организациями и структурами природоохранной и социальной сфер, сельским хозяйством и местным населением.

Процесс трансформации связан, как правило, с повышением возраста (оборота) рубки и изменением (экологизацией) режима природопользования, что обусловливает необходимость проводить дополнительное эколого-экономическое обоснование удовлетворения новых (социально-экологических) потребностей.

Внерыночная межсекторальная роль лесного хозяйства актуализирует экономический инструментарий реализации и воспроизводства экосистемных услуг.

Эффективной формой межсекторального сотрудничества являются образования кластерного типа. Кластерная модель территориальной организации хозяйства успешно функционирует в Финляндии. В Республике Беларусь существуют все предпосылки для организации лесного кластера. Создание инновационных структур кластерного типа в лесном комплексе необходимо осуществлять на основе государственно-частного партнерства и, учитывая специфику белорусской ментальности, в основном сверху – по инициативе государства.

Актуальным направлением межсекторального сотрудничества рыночного типа является логистика. Доля логистических затрат в стоимости конечной продукции лесохозяйственных учреждений составляет 23%, лесопромышленных предприятий – 11 %.

Для лесохозяйственных учреждений характерен большой объем транспортных расходов, которые могут занимать в структуре логистических затрат отдельных организаций свыше 90%, что связано с особенностями технологического процесса лесовыращивания и лесозаготовок.

Значительное влияние на логистику предприятий лесного комплекса оказывает ОАО «Белорусская универсальная товарная биржа» (далее Биржа). Создание Биржи позволило перераспределить доходы между лесопромышленными и лесохозяйственными организациями в пользу последних. Однако функционирование Биржи в условиях мирового финансового кризиса показало ее неспособность до конца эффективно обеспечивать реализацию продукции предприятий лесного комплекса. Это ставит задачу по разработке альтернативных способов организации сбыта и лесной торговли.

1.3.Современное состояние и основные тенденции развития экономики лесного хозяйства

Экономические преобразования, которые произошли в лесном хозяйстве Беларуси с начала текущего столетия, прежде всего, выражаются в уровне его эффективности, которая характеризуется соотношением доходов и расходов соответственно в лесохозяйственном и лесопромышленном производствах отрасли.

Исследование динамики развития лесохозяйственного производства (2003-2011 гг.) говорит о ее положительных тенденциях (Рис.1).

В связи с опережающим ростом доходов уровень окупаемости расходов по лесохозяйственному производству увеличился с 48,4 % до 63,7 %. Однако прогнозы показывают: в ближайшую пятилетку говорить о возможности самофинансирования лесхозов преждевременно.

Перспективные расчеты свидетельствуют: тенденции в отношении устойчивого развития экономики лесохозяйственного производства сохраняются.

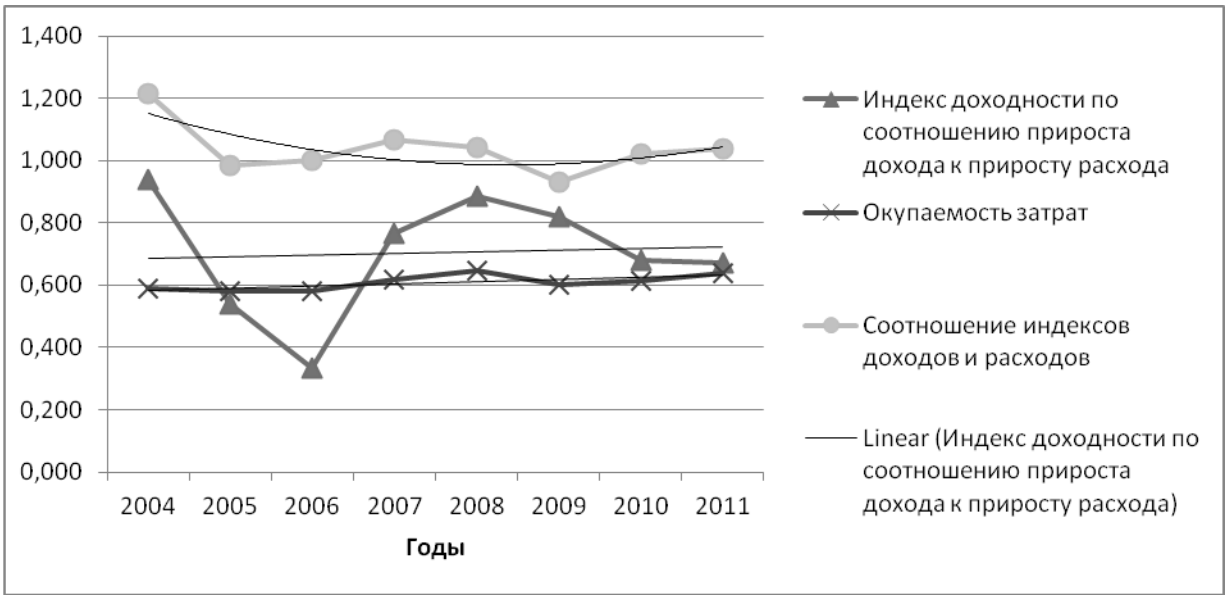

Рис.1. Экономическая эффективность ведения лесного хозяйства

В лесопромышленном производстве лесхозов во времени имеют место аналогичные положительные изменения. Наблюдаемое во времени снижение экспортных поставок соответствует принятым решениям Правительства о сокращении поставок за рубеж необработанной древесины.

Для перехода к рыночно ориентированному лесному хозяйству, использованы различные методы и инструменты: биржевая и внебиржевая торговля, аренда, осуществлены финансовые и структурные преобразования.

Биржевая и внебиржевая торговля древесиной. Перелом в торговле древесиной (переход от административного к рыночному методу реализации) произошел в 2000 г. Действующая законодательная система реализации древесины допускает два варианта:

1) реализация древесины на корню, в т.ч.: а) на биржевых торгах ОАО «Белорусская универсальная товарная биржа» (5056,7 тыс. м^3 – 2010 г.); б) вне биржевых торгов – по таксовой стоимости (1846,9 тыс. м^3 – 2010 г.);

2) реализация древесины в заготовленном виде, в т.ч.: а) на биржевых торгах (1489,1 тыс. м^3 – 2010 г.); б) вне биржевых торгов – по гражданско-правовым договорам (5280 тыс. м^3 – 2010 г.).

В результате реализации древесины вне рыночных торгов, обусловленной социальными и иными причинами, лесохозяйственные учреждения недополучают более 100 млрд. руб. ежегодного дохода.

Аренда участков лесного фонда. Участки лесного фонда предоставляются в аренду с 2009 г. (Указ Президента РБ №444 от 09.09.2009 г.) для: культурно-оздоровительных, туристических, иных рекреационных и спортивных целей; ведения охотничьего хозяйства; осуществления лесопользования предприятиями концерна «Беллесбумпром». С 2010 года в соответствии с поручением Правительства предприятиям концерна «Беллесбумппром» передается в аренду лесной фонд с правом ежегодной заготовки древесины из лесосечного фонда в объеме около 1600 тыс. м^3 по таксовой стоимости, что составляет почти 20 % установленной расчетнойлесосеки.

Аренда лесов предприятиями концерна «Беллесбумпром», которые осуществляют лесопользование по фиксированной таксовой стоимости, ставит их в более привилегированные условия по доступу к сырью по сравнению с другими представителями лесного бизнеса.

Активно развиваются арендные отношения в области охотхозяйства.

Финансирование. Реорганизована сметно-бюджетная система финансирования лесохозяйственного производства. На смену пришла смешанная форма финансирования, включая поступления от собственных средств, от продажи леса на корню (лесной доход) и субсидии государства (бюджетные средства – в условиях дефицита спелых насаждений и частично регулируемого ценообразования).

С 2005 года плата за лесное пользование (лесной доход) остается в распоряжении лесного хозяйства и направляется на финансирование мероприятий по ведению лесного хозяйства. По решению правительства с 2012 года введен механизм аккумулирования на специальном счету Минлесхоза РБ финансовых средств для финансирования строительства лесохозяйственных дорог за счет отчислений от сумм лесного дохода.

Структурныепреобразования. В соответствии с «Программой повышения эффективности работы деревообрабатывающих производств (цехов) Министерства лесного хозяйства на 2007–2010 гг.» проведена реструктуризация цехов на 55 производственных площадях лесхозов.

Указом Президента Республики Беларусь от 9 сентября 2009 г. было делегированноправо ведения лесного хозяйства ОАО «Витебскдрев», к которому присоединены ГЛХУ «Бешенковичскийлесхоз» и «Городокский лесхоз» с площадью лесного фонда около 200 тыс. га. ОАО «Витебскдрев»обязуется выполнять полный объем мероприятий согласно лесоустроительному проекту без привлечения бюджетного финансирования. Данная новация требует проверки временем, особенно с позиции экологических интересов общества и целостного развития отрасли.

В рамках государственной программы развития лесного хозяйства Республики Беларусь на 2011-2015 гг. в порядке эксперимента на базе шести лесхозов (по одному в каждой области) будут отработаны возможные варианты совершенствования действующей системы управления лесным хозяйством с учетом разделения лесохозяйственной и лесопромышленной (лесозаготовки и деревообработки) деятельности. К 2015 году планируется создать 180 обособленных структурных подразделений.

Наряду с положительными тенденциями в экономике лесного хозяйства:

1. Продолжают совмещаться в рамках одной организации функции государственного управления лесами и функции хозяйствования в лесу.

2. Присутствует фрагментарность и неполнота перестройки рыночно-ориентированной системы функционирования лесохозяйственных учреждений в связи:

– с частичной либерализацией рынка продажи древесины, вызванной необходимостью финансовой поддержки низкорентабельных и неконкурентоспособных предприятий лесного сектора страны, а также социальной поддержкой низкодоходных слоев населения;

– незначительным объемом субконтрактных отношений, основанных на условиях оказания услуг лесхозам.

3. Отсутствует или слабо представлен инструментарий в отношении:

– целевой ориентации лесхозов на безубыточное ведение лесного хозяйства с использованием рентных отношений и перераспределением финансовых ресурсов в сторону организаций (лесхозов), находящихся в объективно худших условиях;

– формирования и развития системы лесного налогообложения в контексте перехода лесохозяйственных организаций к самофинансированию;

– компенсационных выплат лесному хозяйству от изъятия лесов для негосударственных нужд, выделения особо охраняемых природных территорий;

– стоимостного регулирования средообразующих и рекреационных функций (экосистемных услуг);

– страхования экологических рисков в лесном хозяйстве;

– ограниченностью хозяйственной самостоятельности лесхозов и их слабой реструктуризацией.

4. Не выполняется одно из важнейших стратегических положений – переход на самофинансирование.

5. Замедлились темпы роста строительства лесохозяйственных дорог, хотя их протяженность в лесном фонде в два раза ниже оптимальной.

2.Приоритетныенаправления развития лесного хозяйства

2.1.Миссия, стратегическая цель и стратегические задачи развития лесного хозяйства

Новую стратегию развития лесного хозяйства структурируют: миссия лесного хозяйства, стратегическая цель и стратегические задачи развития лесного хозяйства.

Миссия лесного хозяйства – устойчивое воспроизводство лесных ресурсов в системе удовлетворения разнообразных потребностей настоящего и будущих поколений, формирование имиджа Республики Беларусь как страны высокой экологической и национальной культуры, обеспечение социально-экономической инфраструктурой развитие сельской местности, повышение социальной ответственности лесного хозяйства за зеленую архитектуру белорусской земли.

Стратегическая цель развития лесного хозяйства – формирование высокопродуктивных и устойчивых лесов, многоцелевой и комплексной системы хозяйствования на основе роста общей и профессиональной культуры работников лесного хозяйства, повышения его экономической самостоятельности и доходности в условиях перехода национальной экономики к ценностям постиндустриального общества и опережающего инновационного развития сферы услуг.

Стратегические задачи развития лесного хозяйства:

– институциональные структурные преобразования лесного хозяйства (разделение функций лесоуправления и функций хозяйствования);

– формирование экономической системы устойчивого лесопользования, основанной на рентном пути развития экономики лесного хозяйства и соответствующих платежах;

– расширение инфраструктурных услуг лесного хозяйства как социального и экологического продукта национальной экономики;

– формирование системы экономического (стоимостного) учета лесных ресурсов, выражающей стоимость их воспроизводства, рентную ценность и ценность экосистемных услуг;

– устойчивое развитие лесного бизнеса и диверсификация хозяйственной деятельности в лесу на основе государственно-частного партнерства и формирования кластеров.

2.2. Совершенствование механизма финансирования лесного хозяйства

Разделение функций лесоуправленияи и функций хозяйствования в лесу обусловливает необходимость изменения финансовых отношений в отрасли. Одни финансовые потоки выражают интересы института лесоуправления и формируются на

основе рентного лесного дохода и бюджетного финансирования. Другие финансовые потоки связаны с коммерческой деятельностью субъектов хозяйствования, имеющих своей целью получение прибыли и дохода, и формируются на основе системы контрактов. Материальная основа финансовых потоков института лесоуправления – расчетная лесосека и уровень ее безубыточности, трансакции, связанные с лесопользованием (арендные отношения и т.п.). Материальная основа финансовых потоков субъектов хозяйствования – реализуемая на рынке продукция и различные виды производственных услуг.

2.3. Основные направления развития субконтрактных отношений

В настоящее время объем субконтрактных отношений в лесном хозяйстве Беларуси является незначительным: на условиях оказания услуг заготавливается 10-11 % древесины от общего объема заготовок.

Первоочередное развитие субконтракции в лесном хозяйстве Беларуси целесообразно осуществлять в области лесозаготовок на основе привлечения сторонних организаций, имеющих лицензии на проведение лесозаготовительных работ.

У государственных организаций целесообразно оставить функции сбыта конечной продукции и услуг лесного хозяйства.

2.4. Совершенствование системы лесного налогообложения

Процесс становления лесного налогообложения связан с необходимостью решения проблемы безубыточности лесного хозяйства.

Наиболее приемлемым для Республики Беларусь является лесной налог, имеющий налогооблагаемой базой объем заготовленной древесины (при достижении безубыточной лесосеки).

Постоянным и главным источником финансирования экологических функций леса за счет дохода всего общества может стать специальный экологический налог (СЭН), который необходимо ввести одновременно с переходом лесного хозяйства на самофинансирование.

Специальный экологический налог, как и собственно лесной налог, на этапе перехода лесхозов к самофинансированию целесообразно аккумулировать в централизованном фонде развития лесного хозяйства, специально созданном при Министерстве лесного хозяйства Республики Беларусь.

2.5.Инфраструктурно ориентированное развитие лесного хозяйства

Инфраструктурное развитие лесного хозяйства определяет процесс предоставления им разнообразных услуг для удовлетворения социальных и экологических потребностей человека и общества в целом.

С позиции удовлетворения социально-экологических потребностей общества бюджетное финансирование (как дополнительное) необходимо сохранить до тех пор (даже при достижении безубыточной лесосеки), пока не будет введен в жизнь на нормативно-правовой основе новый источник финансирования инфраструктурных услуг лесного хозяйства (например, специальный экологический налог).

2.6. Приоритетные направления инвестиционной деятельности

Приоритетными направлениями инвестиционной деятельности в лесном хозяйстве Республики Беларусь являются: строительство лесохозяйственных дорог,

техническое перевооружение лесохозяйственного, лесозаготовительного и деревообрабатывающего производств, создание и развитие инфраструктуры по заготовке и доставке древесного топлива в республике и развитие инфраструктуры охотничьего хозяйства.

3. Формирование организационной модели развития лесного хозяйства

3.1. Общие положения

Опыт развитых зарубежных стран свидетельствует об общей тенденции постепенного перехода от государственного управления лесным хозяйством к государственному управлению лесами, от прямого управления отраслью к ее косвенному экономическому регулированию.

Выделение функций управления лесами из системы государственного управления лесным хозяйством Беларуси – важная политическая задача, решение которой меняет систему экономических отношений отрасли, минимизирует в системе хозяйствования злоупотребления ресурсного характера, дает развитие частной инициативе и определяет более эффективный путь развития лесного хозяйства.

В мире существует множество вариантов развития лесного хозяйства, и каждый из них, учитывая общие положения управления, исходит из местных традиций, уровня культуры и ценностных ориентиров нации.

В экономически развитых лесных странах преобразование систем управления государственными лесами и лесным хозяйством идет (учитывая нормативно-правовую культуру и зрелость политических отношений) в направлении ослабления административного влияния государства на хозяйственные процессы в лесу и укрепления функционирования двух взаимосвязанных подсистем:

1. Институциональной (управление лесами как собственностью);
2. Подинституциональной (управление хозяйственными процессами).

Первую подсистему представляет лесная государственная служба (законодательно-нормативная инициатива, функции надзора и контроля).

Вторую подсистему представляют лесные государственные и (или) лесные частные компании, которым государство делегировало право лесопользования с целью осуществления всего комплекса заготовительных и лесохозяйственных работ для извлечения соответствующей выгоды. В зависимости от выстроенных отношений права собственности на заготовленную продукцию могут оставаться у собственника ресурса или передаваться на определенных условиях лесопользователю.

Обобщая опыт разработки и реализации сценариев развития лесного хозяйства во многих странах (Германия, Польша, Финляндия, Украина), а также опираясь на предложения белорусских ученых и практиков, наиболее приемлемы для условия Беларуси, на наш взгляд, организационные модели, которые обеспечивают:

– целостность системы лесоуправления и ее финансовую независимость от хозяйственной деятельности в лесу;

– развитие субконтрактных отношений на конкурсной основе между собственником ресурсов (заказчиком) и исполнителем (подрядчиком) лесозаготовительных и (или) лесохозяйственных работ;

– формирование системы коммерческих отношений с ориентацией на право владения государством конечной продукции из его ресурсов;

– недопущения злоупотреблений ресурсного характера со стороны специального лесопользователя, независимо от его ведомственной принадлежности.

3.2. Предлагаемые модели

Первая модель: лесхоз как коммерческая организация (унитарное предприятие) (Рис.2).

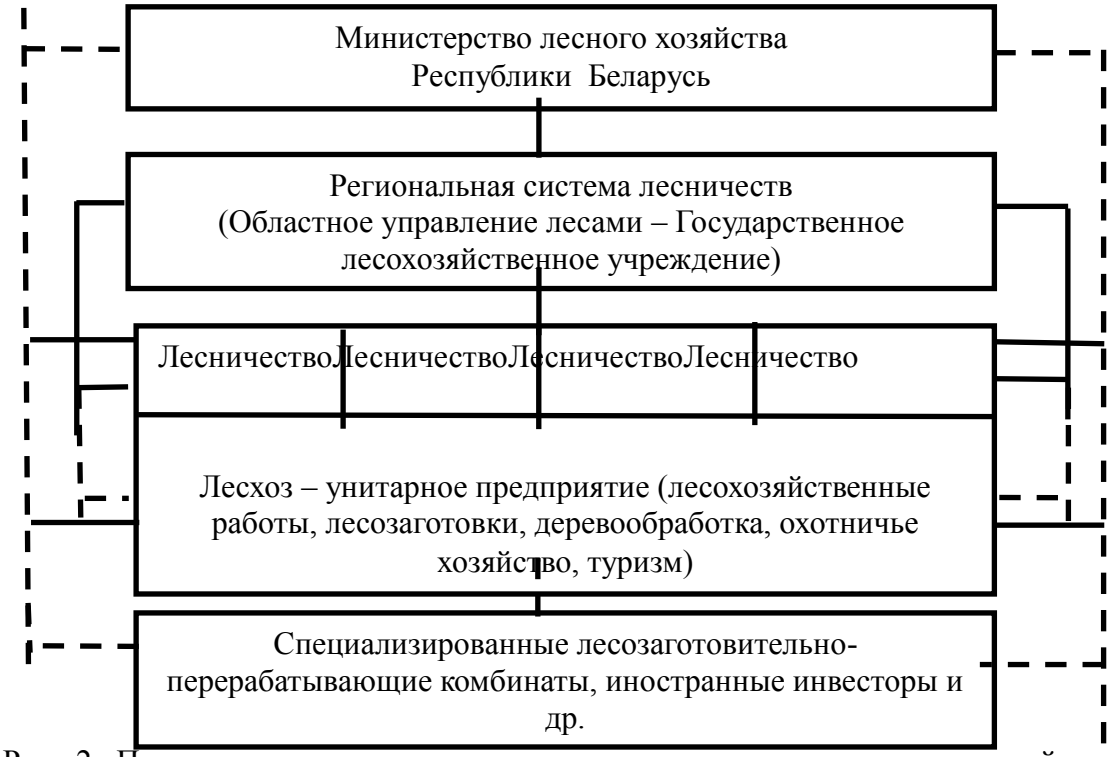

Рис. 2. Предлагаемая организационная модель управления лесным хозяйством (первая модель)

Лесхоз как государственное унитарное комплексное предприятие на основе договорных отношений с организацией лесоуправления выполняет весь комплекс лесохозяйственных и лесозаготовительных работ на принципах самофинансирования и коммерческого интереса. На основе субконтрактных отношений с организационными структурами лесоуправления параллельно развиваются частные коммерческие предприятия. Лесничество, как основное низовое звено системы лесоуправления, выходит из состава и административного влияния лесхоза как юридического лица и входит в состав другого юридического лица, выполняющего функцию лесоуправления– государственного лесохозяйственного объединения (ГЛХО), созданного на базе ГПЛХО. Управление производственными функциями для ГЛХО исключается. ГЛХО готовит всю инфраструктуру договорных и платных отношений и осуществляет контракт на выполнение работ за счет доходов от лесопользования и, при необходимости, бюджетных средств. Право собственности на заготовленную продукцию закрепляется за ГЛХО. ГЛХО осуществляет реализацию всех договоров, выставление счетов-фактур, получение надлежащих платежей, формирует конкурентную среду.

Возглавляет систему лесоуправления Министр лесного хозяйства.

Вторая модель: лесхоз как некоммерческая организация (учреждение)(Рис. 3).

Рис. 3. Предлагаемая организационная модель управления лесным хозяйством (вторая модель)

Лесхоз выполняет все виды некоммерческой деятельности (комплекс лесохозяйственных мероприятий, за исключением рубок коммерческого характера), которая совмещается с функцией лесоуправления. Из состава лесхоза выделяются чисто коммерческие виды производств – лесозаготовка и деревообработка, на базе которых формируются юридически самостоятельные государственные и частные структуры. При данном варианте могут развиваться как субконтрактные, так и арендные отношения между структурой лесоуправления – лесхозом – и государственными частными промышленными организациями.

По мере развития субконтрактных отношений и соответствующей инфраструктуры некоммерческие хозяйственные функции переходят лесопромышленным организациям, которые трансформируют в государственные унитарные комплексные лесохозяйственные предприятия, выступающие структурным подразделением ГПЛХО. Параллельно развиваются частные структуры, которые на конкурсной основе выполняют для ГПЛХО лесозаготовительные и лесохозяйственные услуги. За лесхозом, как за системой лесничеств, закрепляется только функция лесоуправления. Система Министерства сохраняется: она выполняет ту же функцию, что и в первой модели – управление лесами и лесными ресурсами, а также регулирование отношений устойчивого лесопользования.

Учитывая исторический опыт ведения лесного хозяйства Беларуси, скорость развития по второй модели, возможно, будет выше, а, следовательно, быстрее будет достигнута поставленная цель экономических преобразований. Но последнее слово за

практикой, которая находится ближе к реальным процессам и лучше видит конкретный и наиболее эффективный путь движения вперед.

При благоприятном развитии по одной из вышеназванных моделей могут быть созданы необходимые предпосылки для осуществления коренной реорганизации системы управления лесным хозяйством и перехода от отраслевого к функциональному типу управления.

Функциональному типу управления (третья модель) адекватна новая организационная структура (Рис. 4):

1. Государственное (национальное) лесное агентство. Основная функция – государственный контроль и государственное управление лесами. Акцент – на экологию и экономику.

2. Белорусское государственное лесное предприятие (Белгослес). Основная функция – хозяйственное управление лесами и лесными ресурсами. Низовое звено – лесхоз (как система лесничеств). Акцент – на экономику и экологию.

3. Белорусская лесная компания. Функционирует на основе государственно-частного партнерства. Основная функция – хозяйствование в лесу. Акцент – на экономику.

4. Общественный орган. Основная функция – общественный контроль. Акцент – на баланс интересов.

Рекомендации

При построении новой стратегии развития лесного хозяйства Беларуси рекомендуется учитывать:

– принцип разделения функций управления лесами и хозяйственной деятельности в лесу, выражающий паритет социально-экономических интересов собственника ресурсов леса и коммерческих интересов лесопользования;

– принцип государственно-частного партнерства, определяющий наиболее эффективные условия решения эколого-экономических проблем развития лесного хозяйства;

– принцип либерализации и контрактации отношений лесного бизнеса, основанный на сочетании рыночных интересов и интересов устойчивого (эколого ориентированного) лесопользования;

– принцип ведущей роли интересов страны (интересов населения): меры лесной политики должны быть адекватны социально-экономическим процессам, протекающим внутри страны с сильным акцентом на местные условия (интересы) и региональные особенности национальной культуры;

– принцип финансовой самостоятельности лесоуправления и субъектов хозяйствования. Финансовая самостоятельность, в отличие от самофинансирования, не исключает на определенном этапе развития лесного хозяйства бюджетное финансирование, обусловленное историческими и (или) экономическими причинами

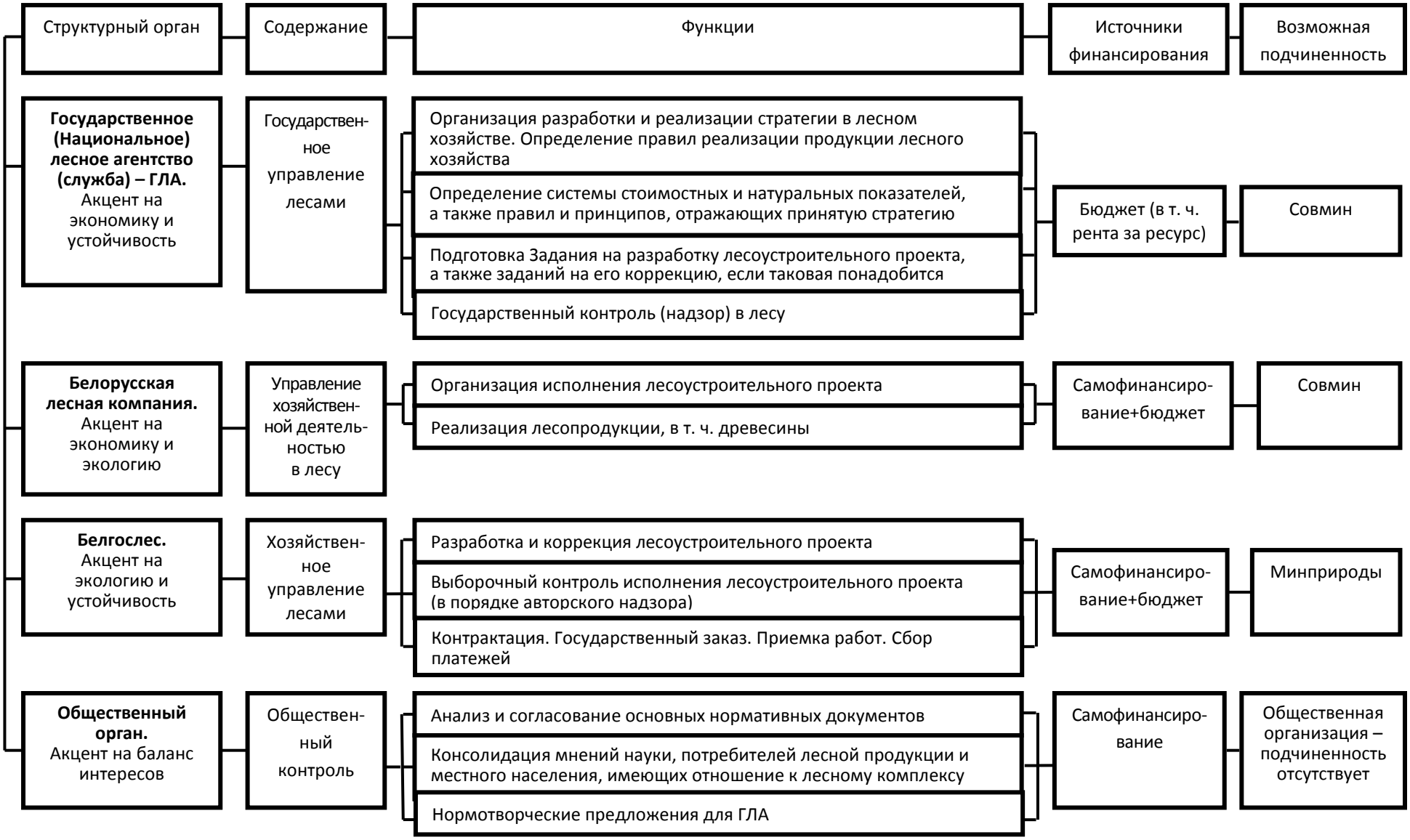

Рис.4. Предлагаемая организационная структура управления лесным хозяйством (третья модель)

Conservation of Biodiversity of Georgian Forests: Problems and Perspectives

ILIA OSEPASHVILI[60]

Abstract
Forests in Georgia are very rich in biodiversity. However, they are facing various threats such as illegal or unsustainable logging, over-grazing by livestock and poaching. Climate change, forest fires and infrastructure development are relatively new challenges. Poverty, lack of alternative livelihoods by local population, frequent institutional changes in the forestry sector, inadequate legislation and lack of environmental awareness among stakeholders are major causes of these problems.
The adoption of national forestry policy and strategy, institutional stability, sufficient funding, adequate legislation and proper management standards are necessary pre-conditions for safeguarding proper biodiversity conservation. Forestry education and training are further essential measures, in order to achieve sustainable forest management.
Keywords
Forest biodiversity, illegal logging, over-grazing, unsustainable forest management, forest policy and institutions

Background

Georgia, as part of the Caucasus, is one of the 200 global Ecoregions identified by World Wide Fund for Nature (WWF). At present, 34 biodiversity hotspots have been identified by Conservation International (parts of the Earth, which are richest in biodiversity and, at the same time, most threatened). Of these 34, Georgia is part of the Caucasian and Iran-Anatolian hotspots. Georgia has remarkably rich and diverse flora in comparison to other temperate countries. There is also a high level of endemism.
Forests are considered the most important biome for biodiversity conservation in Georgia, covering about 40% of the country's territory. Many endemic and relic species of woody plants and herbs as well as important and rare animal species are associated with forests. Forests in Georgia consist of broadleaf, coniferous, arid open and lowland stands, which are shaped by elevation, soil conditions and climate. Broadleaf forests consist primarily of oriental beech *(Fagus orientalis)*, Georgian oak *(Quercus iberica)*, hornbeam *(Carpinus caucasica, C. betulus)* and chestnut *(Castanea sativa)*. Coniferous forests, made up mainly of oriental spruce *(Picea orientalis)* and Caucasian fir *(Abies nordmanniana)*, are found in the western part of the Lesser Caucasus Range and on both sides of the western and central Greater Caucasus Range.
Arid open woodlands form on dry, rocky slopes in south-eastern Georgia, made up of juniper *(Juniperus foetidissima)*, pistachio *(Pistacia mutica)* and hackberry species. Lowland forests are found in floodplains and on low river terraces, generally growing on alluvial, swampy, or moist soils.

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Most of Georgia's and the region's rare and endangered animal species are associated with forest ecosystems. Some of the bat species, brown bear *(Ursus arctos)*, turs *(Capra caucasica, C. cylindricornis)*, chamois *(Rupicapra rupicapra)*, Caucasian red deer *(Cervus elaphus)* and Caucasian salamander *(Mertensiella caucasica)* depend on ecologically intact forest. The endemic invertebrates such as Caucasian running beetle *(Lyrurus mlokosiewiczi)* are also strictly associated with forest ecosystems. Georgian forests are also rich in bird species harboring eagle owls, seven species of woodpeckers and some species of smaller birds coexisting here with wide-spread European birds.

Major threats to forest biodiversity and their causes

Forest biodiversity in Georgia is facing various threats, including illegal logging, unsustainable grazing, pests and diseases, unsustainable hunting and improper management. Climate change, forest fires and infrastructure development represent additional, relatively recent challenges.

Unsustainable forest use and management in general

Over the last two decades, illegal logging (logging without permission or with violation of the established legal procedures) has been a serious problem in Georgia. Two major types of logging can be distinguished - for fuelwood and for construction timber. In the 1990s and early 2000s, the volumes of illegal logging were extremely high, amounting to several millions of cubic meters per year. Reliable estimates were practically impossible to obtain. According to the official estimates, the total volume of illegal logging has reduced in recent years (from 53,854 m3 in 2009 to 7,339 m3 in 2011). The actual volumes, however, are much higher mainly due to the high demand for wood.

The most significant driver of logging for fuelwood is rural poverty. Poor population cannot afford to purchase alternative energy resources such as liquid gas or kerosene. Because of the strict law enforcement on one hand and improved natural gas supply to the villages on the other, the volumes of fuelwood harvesting have been reduced. However, remotely located villages in Georgia still do not have natural gas supply. As a result, the demand for fuelwood is still high, exceeding the natural capacity of forests. The major driver of logging of commercial timber is market demand. The volumes of illegal harvesting of commercial timber have been substantially reduced in recent years due to the strict law enforcement and border controls.

The combating against illegal logging is complicated by frequent changes in legislation and limited capacities of relevant state authorities. Due to the generic character of the present definition of illegal logging, often it is not possible to determine whether the harvested wood is legal or not. For effective protection of forests against illegal activities, it is essential to supply relevant law enforcement authorities with adequately qualified staff and advanced communication means.

Legally permitted, but unsustainably conducted forestry operations pose additional challenges to the biodiversity of forests. Unsustainable logging happens when tree stands are selected for felling without due regard to conservation values of forests. In the past decades, carelessly conducted tree cutting significantly affected ecologically sensitive mountain forests in Georgia.

Unsustainable grazing

In Georgia, the density of grazing wildlife (e.g. red deer) is so low that damage by game can be ignored. However, uncontrolled and excessive grazing by livestock (cattle, sheep, goats and pigs) causes great damage to forest ecosystems. Natural regeneration of forests is undermined, contributing to the degradation of biodiversity at the genetic level. Often this damage is irreversible. Overgrazing causes the compaction of soil which triggers erosion.

Main causes of excessive grazing are limited control from the state authorities, poverty, limited alternative livelihood opportunities, improper range management (e.g. the concentration of livestock in relatively small areas, failure to use pasture rotation systems, etc), lack of sufficient control by shepherds and a lack of awareness of the population. In order to address this problem, sustainable range management practices should be introduced and agricultural subsidies combined with free extension services should be provided.

Pests and diseases

Forest pests and diseases represent another significant threat. One of the most prominent diseases is chestnut cancer (*Cryphonectria parasitica*, formerly called *Endothia parasitica*), which apart from chestnut, already threatens other species, such as oak. The problem of Dutch Elm Disease (caused by fungus *Ceratocystis ulmi*) which has already destroyed most of the grown up elm trees *(Ulmus glabra)* in Europe is also occurring in Georgia (though to a lesser extent than in other parts of Europe). The relatively new disease, the fungi causing the so-called "scorching of box trees" threatens large areas of natural box tree ecosystems in western Georgia. Specifically, entire trees lose their leaves and die. The species of fungi causing this disease is still under the process of identification.

Effective combating against forest pests and diseases requires comprehensive scientific and field assessments, monitoring and active intervention measures. These measures are very difficult to implement due to the lack of funding and technical capacities.

The collection of non-wood forest products

The collection of non-wood products from forests (e.g. early flowers of *Staphylea colchica*, bulbs of snowdrops *(Galanthus spp.)* and cyclamens *(Cyclamen vernum)*, seeds of Caucasian fir *(Abies nordmanniana*) is an important activity. There is no reliable information about the real volumes of collection of these products. Consequently, it is very difficult to assess the sustainability of collection of these products. Until recently, the collection of Caucasian fir *(Abies nordmanniana)* seeds was conducted by using unacceptable methods, such as cutting the tops of the trees. At present this practice has been stopped through strict law enforcement.

The Ministry of Environment is planning to conduct detailed assessment of the conditions of snowdrop and cyclamen resources. Based on the outcomes of this study, more sustainable annual collection quotas will be established.

Climate change

The first signs of **climate change** can already be observed in Georgia, such as more frequent and intensive rainfalls, increased temperatures, melting of the glaciers, heavier floods and longer draughts. Climate change adds stress to forest ecosystems and their biodiversity. If not mitigated significantly, it will cause the degradation and disappearance of most of the forest ecosystem types in the next decades. Climate change also increases the likelihood of forest fires. The reduction of negative impacts of climate change will require the enhancement of ecosystem resilience. This would require various measures such as forest restoration and improvement of management.

Forest fires

In the past, forest fires occurred relatively seldom in Georgia, affecting a few hectares of forests (mainly conifers) per year. However, with the increased incidences of draughts and higher summer temperatures, forest fires have become a much more serious problem.

At present, fires encompass tens or sometimes even hundreds of hectares of forests each year. In 2005, about 500 hectares of forests were burnt. Nearly 1,000 ha of forests were either seriously damaged or completely burnt in 2008. In 2010, about 370 hectares of forests were seriously

damaged by fires, mainly broadleaves. In general, around 2,500 hectares of forests were destroyed or significantly damaged due to forest fires in the last 3-4 years.

Forest fires are often triggered by irresponsible human behaviour (e.g. lighting campfire in inappropriate areas or seasons and throwing a burning cigarette). Shepherds often deliberately burn grass in the pastures and sometimes the fire moves to the forests.

Fires cause damage or destruction of trees, bushes and natural regeneration. Soil layer and microorganisms are also burnt. If not occurring naturally, forest fires change the directions of forest succession. This could delay the establishment of optimal potential natural vegetation cover for decades and even centuries.

Preventing and combating forest fires is still very difficult in Georgia, due to the inadequate early warning and fire-fighting systems and a lack of capacity. In addition, mountainous terrain, steep slopes and a lack of roads make some of the forests very difficult to access. Nevertheless, in recent years some positive steps were made in this direction. For instance, the state Emergency Service started to use special helicopters equipped with water tanks. Better coordination is needed among the authorities, while existing human and technical capacities should be enhanced.

Infrastructure development

In recent years, rapid economic recovery and growth as well as the development of tourism in the country will trigger large-scale infrastructure development. It is planned to construct new pipelines, dams, power lines, railways, roads and buildings. Hydropower development is given a particular focus in the economic policy of the country. The establishment of electricity plants and dams may require clearance of significant forest areas. Because of the strategically important location of Georgia and its “corridor” function between Europe and Asia, transportation networks (railways, motor roads, motels) will be modernized and extended.

It is not very clear how large forest areas will be affected in total. Even the clearance of relatively small forest area could cause irreversible damages if this forest is located within ecological corridor or other environmentally sensitive area. Careful planning and sufficient consideration of ecological aspects are essential. The awareness of decision-makers about real economic values of natural ecosystems should be adequate. Socio-economic and ecological consequences of the potential damages to the environment should not be overlooked.

In this regard, it is important to mention that a new eco-compensation mechanism has been successfully implemented in Georgia by the team of local and international experts. Specifically, the *habitat-hectare* scoring method was applied to calculate the forest area which had to be restored and subsequently maintained, in order to fully compensate for the forest cleared through the construction of oil pipeline by the BTC Corporation. The pipeline (starting in Baku, Azerbaijan, running through the area near Tbilisi, Georgia and ending in Ceyhan, Turkey) crosses the territory of Georgia as a corridor with 248 km of length and over 50 m of width (on average). Despite the limited available information and data, Ecological Vegetation Classes were identified and habitat-hectares calculated for the forest stands affected by the pipeline construction. As a result, the scope for the required eco-compensation has been clearly deterimed. The innovative methods of this type should also be applied in other projects which involve forest clearance at significant scales, in order to safeguard the implementation of fair compensation mechanisms and, in this way, contribute to socially, ecologically and economically sustainable development in general.

Unsustainable hunting/poaching

Hunting is another very important factor directly affecting biodiversity. Key legislation dealing with hunting are Forest Code (1999), Law on Wild Fauna (1996), Law on Red List and Red Book

(2003), Law on Licenses and Permissions (2005), Law on Management of State Forest Fund (2010) and Statute on the Rules of Extraction of Wild Fauna Species, Dates and the List of Allowed Hunting Weapons and Equipment approved by the Order #07 of the Minister of Energy and Natural resources (April 2011). According to the Law on Wild Fauna (1996), hunting is subject to licensing.

Poaching is a significant problem in Georgia, negatively affecting biodiversity. In recent decades, poaching increased significantly as a result of the economic crisis, rural poverty and a lack of awareness of hunters.

Wild goat (*Capra aegagrus)*, wild boar, red deer and roe deer are typical species which are hunted in Georgia. With economic growth and opening of borders, the demand for certain fauna species might grow, creating more favorable grounds for poaching. On the other hand, if conducted properly, hunting can increase the size and number of healthy populations of animals. It can also generate significant income, which could be reinvested into biodiversity conservation.

At present, control mechanisms to reduce poaching are not very effective, while administrative resources for enforcement are limited. Government agencies are responsible for setting quotas for game species. However, due to the lack of funding and limited capacities, monitoring of game numbers and population dynamics is not carried out. There is no reliable information about the numbers of individuals of game species remaining in the wild, which puts the animal populations (mostly ungulates) under great risk.

As the first step, assessment of the game numbers should be conducted, in order to determine more ecologically sustainable annual hunting quotas. The Ministry of Energy and Natural Resources (MoENR) has already made the first steps in this direction.

Non-native and invasive species

Around 50,000 to 60,000 ha are covered by planted forests in Georgia. These plantations (the so-called "forest cultures") partly consist of exotic and not site adapted species (e.g. *Pinus nigra*) and are mostly homogenous monoculture monocultures. These monocultures are much poorer in biodiversity than "close to nature" forests with native tree species.

An example of an invasive species is the so-called "Tree of Heaven" *(Alianthus altissima).* It is a popular garden plant introduced from China to many other parts of the world. As an exotic species it potentially threatens the natural areas in Georgia especially in floodplain areas. If uncontrolled, it can out-compete valuable native species, such as wingnut *(Pterocaria pterocarpa).*

The quality of forest management with respect to biodiversity

Sustainable forest management should be economically viable, socially acceptable and environmentally sound. Biodiversity conservation is an essential part of sustainable forestry. Principles and criteria for sustainable forest management have been outlined in a number of international agreements and processes such as the "Statement on Forestry Principles" (adopted in 1992), Forests Europe and voluntary forest certification systems. Key provisions of these agreements and systems include:

- Ecosystem-based approach
- Reduction of the threats to forest biodiversity and their underlying causes
- Enhancing policy and institutional environment
- Addressing socio-economic aspects.

Georgia is a party to the Convention on Biological Diversity since April 1994. It also participates in other international and regional forestry processes such as Forests Europe, Bern Convention

(1979) and European Landscape Convention (2000). In January 2012, the Georgian Government approved the Second National Environmental Action Plan (NEAP, 2012-2016). The plan comprises 11 thematic fields, including forestry. Specifically, major problems experienced in the forestry sector and their causes are analyzed. Measures implemented in recent years, stakeholder analysis and legislation review, are also given. The long-term forestry-related goal is defined as "improvement of functional conditions of the forests by means of development of sustainable forestry".

Based on the initiative of the President of Georgia and with strong support from World Wide Fund for Nature (WWF), Georgia was nominated as one of the several pilot countries for implementation of TEEB (the Economics of Ecosystems and Biodiversity). TEEB was initiated by the German Government and European Commission and is financially supported by the United Nations Environment Programme (UNEP). It is planned to involve more donors in this initiative.

In Georgia, the economic benefits of biodiversity and ecosystems and costs of their degradation will be evaluated and demonstrated. The aim is to support the mainstreaming of biodiversity and ecosystem considerations in decision-making, which should result in integration of ecologically sustainable management in national and regional planning. The launch of the TEEB initiative in Georgia is planned for 2012.

Despite considerable efforts undertaken by the Georgian state forestry authorities, no major improvements can be observed in the quality of forest management in recent years. The current policy, legislative and institutional set up of the forestry sector of the country does not fully respond to the above-mentioned international requirements related to sustainable forestry and biodiversity conservation.

Forestry policy, legislation and institutional set up

At present, there is no formally approved forest policy and strategy document in Georgia. Several drafts were elaborated, but none of them was adopted. Forest Code adopted in 1999 states that principles of protection and sustainable management of Georgian forests are based on Georgian Constitution, Statement on Forestry Principles adopted at the "Earth Summit" in Rio de Janeiro in 1992 and principles reflected in Article 5 of the Georgian Law on Protection of Environment (1996). The latter includes biodiversity conservation, risk mitigation and prevention, sustainability and several other important principles.

In the last five years, several institutional changes occurred in the Georgian state forestry sector. These changes were aimed at the increasing of the effectiveness by reducing the number of employees and increasing the salaries of the remaining staff. The last significant change occurred in 2011, when the Forestry Department was renamed into the Forest Management Department and incorporated into the Agency of Natural Resources, a Legal Entity of Public Law. The agency has been established within the MoENR. At this stage, it is difficult to judge about the effectiveness of this step in terms of the quality of forest management. Much will depend on the availability of financial and human resources and, most importantly, the willingness to incorporate social and environmental concerns into forest management.

Frequent institutional changes in the forestry sector have reduced the stability and slowed down the adoption and implementation of sustainable management practices.

High Conservation Values

In recent years, the concept of High Conservation Value Forests (HCVF) is implemented in many countries. The characteristic features and management regime in HCVFs are outlined in the 9th Principle in the *Principles and Criteria* of Forest Stewardship Council (FSC). Six types and sub-

types of such forests are distinguished, which include biodiversity, large natural landscapes, ecological (protective) and social functions. Management of these forests is envisaged in a way that protects and enhances these valuable and unique features.

The notion and definition criteria for HCVs have been included in the "Regulation on the Procedure and Terms of Forest Use Licensing" (2005) of Georgia with active participation of representatives of NGOs, scientific institutions and experts. Some logging restrictions are envisaged for these forests. However, more detailed management prescriptions are needed to identify, map and protect valuable natural forest ecosystems, including ecological corridors, and pristine forests.

Forest management on the ground

Forest management operations on the ground are mainly performed by private companies holding wood use rights for five, 10 and 20 years in Georgia. Most of the methods of "close to nature forestry" which are usually part of modern forest laws and certification systems still have not being incorporated into forest operations in Georgia. Examples for biodiversity friendly elements of sustainable forest management are:

- Obligation to leave deadwood and import biotope trees
- Obligation to reforest with native species
- Selective logging instead of clear cuts
- Minimization of damage to remaining trees and natural regeneration.

In August 2010, the Georgian Government adopted a Resolution on "Maintenance and Restoration of Forests", in which it is stated that forest restoration and afforestation should be conducted in line with the requirements of biodiversity conservation. In addition, according to this Resolution, the advantage should be given to native, site-adapted species, which, undoubtedly, is a step forward.

The basis for felling operations of licensees in Georgia is the so called forest use (exploitation) plan. The template of this document applies inter alia to forest protection measures and reforestation as well as to biodiversity and environment protection measures, which forest users have to follow. Often the decision on the trees to be felled and method of felling is made by woodcutters without adequate training. Control of felling operations is carried out with focus on correct felling of marked trees. Biodiversity factors (e.g. deadwood, damages on regeneration, etc.) are given less consideration.

Forest roads are vital for sustainable use of forest, but they could be also source of negative impacts on biodiversity by disturbing habitats of wild animals. Unfortunately often forest roads in Georgia are constructed without considering possible impacts on the protection function of forests and biodiversity. Management directives for forest roads considering biodiversity as well as health and safety norms for the workers should be developed.

Concluding remarks

It can be concluded that major factors threatening forest biodiversity in Georgia are rural poverty, lack of alternative livelihoods, insufficient funds and capacities of the state forestry authorities as well as frequent priority changes within the forestry sector. Severe shortage of adequately qualified specialists is another problem, which could only be addressed by the promotion of forestry education and training.

It is therefore essential to adopt a national forest policy, strategy and action plan, in order to identify the long-term directions of the reforms and achieve stability in the sector. The expenditures necessary for the fulfilment of relevant strategic priorities should be identified. Optimal institutional set up should be identified based on the best international experiences adapted to the specific conditions in Georgia. Relevant legislation, regulations and standards should be prepared and adopted on the basis of the national forest policy, which would safeguard the protection of the unique forest biodiversity of the country.

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THE CURRENT TRENDS IN FINNISH FOREST LEGISLATION

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Abstract

Finnish forest legislation was revised in the 1990's. Even if the importance of sustainable forest management now has been acknowledged there are still different problems in regard with ecological and social sustainability. In some countries forest certification has brought new elements into forest management, but in Finland forest certification has not played as important role, but the ongoing law reform might change the current forest management paradigm.

Keywords: forest legislation, forest certification, sustainable forest management, Finland

1. Introduction

The aim of this article is to scrutinize Finnish forest regulation from the point of view of ecologically and socially sustainable forest management. This article is based on the previous research of the author (especially Pappila, 2011; Pappila, Pölönen, 2012).

Sustainable forest management is the aim of forest management and forest regulation in most countries nowadays. Accordingly, forest management has been steered towards more environmentally friendly methods and new regulatory instruments have been introduced. There are new instruments both within state and non-state regulation. For example, many states have introduced voluntary market-based biodiversity protection measures. Forest certification is a good example of widely spread non-state instrument of forest governance.

The author has evaluated Finnish forest regulation in order to find out what kind of forest management these regulations enhance and to what extent certain aspects ecologically and socially sound forest management has been integrated into different forms of regulation.

Defining ecological and social sustainability

Both ecological and social sustainability may be defined in many ways. In this article ecological sustainability is mainly perceived as forest management practices that take forest biodiversity into consideration.

Finnish governmental Development Centre for Forestry – Tapio – has described social sustainability in forestry in the following way: well-being aspects of different social groups are being taken into account fairly. Income and working possibilities and conditions of forest owners, forest workers and other forest entrepreneurs are in the first place. Yet also multiple use of forests and the citizens' and communities' ability to have on effect on changes and maintaining cultural values of forests are part of social sustainability (Metsätalouden kehittämiskeskus Tapio, 2001: 4). Possibility to influence and control their own lives and the fair distribution of the benefits of

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development are important aspects of social sustainability for *Rannikko* (Rannikko, 2004: 129–130). Drawing from these definitions, but selecting only some of the aspects, socially sustainable forest management is here mainly being considered from the point of view of citizens, who are not necessarily forest owners. Especially public participation as a part of "having an effect" on their lives and changes in their living environments are being looked upon.

2. Biodiversity Protection in Finnish Forest Regulation

A Short Overview of the Evolution of Forest Regulation in Finland

The current Finnish Forest Act (hereinafter FA) was adopted in 1996 and it brought forest legislation into a new era: some ecological aspects were integrated into forest legislation. Soft law, mainly the forest management recommendations by Tapio (governmental Development Centre for Forestry) increased the level of biodiversity protection further. The scrutiny of the Finnish forest legislation and forest management paradigm reveals, however, several problematic issues. For example, forest biodiversity is still declining and the Finns are not content with clear cuts in Finnish forests (Pappila, 2011; Rassi et al., 2010; Valkeapää et al., 2009).

The first Finnish forest certification scheme, PEFC (FFCS by then) was established in 2000, covering now about 95 %, i.e. more than 20 million hectares of forests in Finland. FSC is not yet much used in Finland.

Some Features of Biodiversity Protection in Finnish Forest Regulation

Finnish forest legislation (i.e. the FA and other relevant forest legislation) includes only one regulation aiming at the protection of forest biodiversity: protection of the habitats of special importance. Section 10 of the FA stipulates that "Forests must be managed and utilised in such a manner that the overall prerequisites for the preservation of habitats characteristic to the biological diversity of the forests are ensured." Section 10 also includes a list of these protected biotopes; the immediate surroundings of springs, brooks, rivulets constituting a permanent water flow channel, and small ponds, herb-rich and grassy hardwood-spruce swamps, ferny hardwood-spruce swamps, eutrophic paludal hardwood-spruce swamps, and eutrophic fens located to the south of the Province of Lapland, fertile patches of herb-rich forest, heathland forest islets in undrained peatlands, gorges and ravines, steep bluffs and the underlying forest and sandy soils, exposed bedrock, boulder fields, peatlands with sparse tree stand and flood meadows which are less productive than nutrient-poor heathland forests.

These biotopes cover roughly 0,7 % of privately owned forests and they are usually small-scale biotopes, approximately size of 0,5 ha. The determination of the size is not ecological but economic. In Finland the forests are mainly owned by private owners and property rights are strong. It is only possible to restrict the use of one's property to a certain extent. If the limits are crossed, the state must compensate the economic losses to the property owner. In the case of protected forest biotopes this means that if the protected biotopes covers 3-5 % or more of the owners forest property in the area, the owner can either get a permission to cut i.e. partly destroy the biotope or the owner can apply for monetary support from the state. Because of the current interpretations of property rights and scarce budgetary resources to protect forest biodiversity, the potential of these biotopes for biodiversity protection is not fully achieved. Ecological research

has revealed that in reality these biotopes are not always recognized and biotopes are often delineated too narrowly to protect endangered species (Pykälä et al., 2006; Pykälä, 2007).

The 2010 Red List of Finnish Species shows that overall situation of the endangered forest species has not improved in Finland: "(t)he development of 81 species living primarily in forests has been positive. Half of these are beetles. Many of the beetle species have benefited from retention trees left standing in clear-cut areas, especially from aspens. (…) At the same time, the situation of 108 species living primarily in forests has deteriorated significantly. Most of these species are lichens, butterflies and moths, beetles, and hymenopterans. Most organism groups have experienced clearly more negative than positive changes." (Rassi et al., 2010: 130-131). Most threatened species live primarily in forests (36.2%). There is an urgent need to further improve Finnish forest regulation and establish more protected areas: the proportion of protected forests is 15.8% in northern Finland, whereas it is only 2.3% in southern Finland (Rassi et al., 2010: 57-58).

Finnish Forest Certification and biodiversity

PEFC Finland does not require higher level of biodiversity protection than do the recommendations by Tapio, but certification has unified forest management practices and it does require more protection than mere forest legislation. There are, for example, some extra requirements concerning protection of certain forest habitats and a stipulation to leave a minimum 5 meters wide protection zone along lakes, rivers and rivulets PEFC also requires to leave 5-10 residual trees or dead trees per hectare and to protect the habitats of endangered species when environmental authorities have given instructions about the conservation.

Despite of these positive aspects, it is quite clear that in Finland PEFC has neither functioned as an instrument for substantially improving the level of forest management nor brought new innovations to forest management. PEFC has rather supported the status quo of the forest sector and mainly just supported the governmental recommendations i.e. the "best practices" defined by Tapio.

Legislative reform and some historical remarks

The latest ecological theories and knowledge of endangered species should be taken into account in the on-going reform of forest legislation. However, the ongoing legislative reform does not mainly aim at improving the ecological or social sustainability of forest management. The main idea behind the reform is to give more freedom to forest owners. There should be less state regulation and more choices left for the forest owner, who could, for example, log the forest when the prices are high. One of the main issues of and reasons for the ongoing forest law reform is the increasing pressure from forest owners – and increasingly also from researchers – to allow continuous cover forestry or uneven-aged forestry. Currently only even-aged-forestry is an officially accepted form of forest management. The Forest Act regulates clear cuts and thinning. The Forest Act does not directly forbid continuous cover forest management, but the rules concerning thinning do not support practicing continuous cover forest management. The main idea of continuous cover forestry is to make selective loggings every 15-20 years and rely mostly on natural regeneration of forests. As a rule, clear cuts do not take place.

Different forms of selective logging and continuous cover forestry has long roots in Finland. Various variations of selective logging were traditionally practiced until forest

professionals started to regard selective logging as the main reason for problems in Finnish forests. Some parts of the Finnish forests – the most easily accessible ones – were heavily used in the end of 19th century for various reasons and some of the forests were considered damaged. For centuries forests had been used for slash and burn agriculture and crazing, and wood was used for heating, building, tar-burning and many other things. Now sawmills and growing forest industry needed more and more wood and the securing its raw material became a national issue. The ideas of clear cutting and active and science-based forest management landed to Finland from Germany.

The use of Finnish forests was considered reckless and private forest owners, mainly farmers were considered guilty for devastating forests (Siiskonen, 2007). Yet, the majority of forests were still practically untouched in those times. Nevertheless, forest professionals came to conclusion – without any proper studies – that selective loggings were the reason for the allegedly bad condition of Finnish forests and even-aged forest management including clear cuts was the cure for the prevailing condition. The interpretation of Finnish forest legislation gradually changed and the traditional Finnish forest management i.e. continuous cover forestry became illegal. The turning point was the declaration on selective logging in the 1940s. In the declaration published in a newspaper, certain influential Finnish forest professionals declared a ban for selective loggings (Pappila, 2010: 21-24).

Many farmers practically lost their means of living when they were sentenced for forest destruction (i.e. selective logging) and they were not allowed to log their forests for 10-20 years. Most small-scale farmers were dependent on forestry income during the winter season and the ban of forest use forced them to move to towns (Siiskonen, 2007: 28). A handful of forest owners have, despite of all, continued practicing selective logging up till today. Current economic research supports the view of the forest owners practicing continuous cover forestry: in most forest types it is as profitable as even-aged forest management (Pukkala et al., 2009, Tahvonen, 2009; Tahvonen, et al. 2009). There are also ecological reasons to allow more diverse forest management methods (e.g. Puettman et al., 2009).

Therefore, even if the ongoing reform in not based on the latest ecological theories and knowledge of endangered species, allowing continuous cover forestry might lead to more diverse management of forests and open also other new ways to think about forest management (see Puettman et al., 2009).

3. Participatory rights as part of social sustainability in Finland

Participation and sustainability

As mentioned earlier in the introduction, public participation is part of sustainable forest management (e.g. Diemer, Alvarez, 1995; Leskinen, 2004; Richardson, Razzaque, 2006). Public participation is one element of the commitments made by the Ministerial Conference on the Protection of Forests in Europe and also part of the Finnish criteria and indicators for sustainable forest management (Parviainen, Västilä, 2011). In a democratic country, participation can be considered an end itself (Buchy, Hoverman, 2000). Also, participatory rights have been claimed to be an important issue from a constitutional and human rights point of view (Applestrand, 2002; Verschuuren, 2005).

Participatory rights are different in different forests

In Finland the situation is different whether one talks about state owned forests or privately owned forests, and there are differences within these groups as well (Raitio, 2008: 150-154). In state owned forests Metsähallitus (Finnish forest and park service) pursues participatory procedures while developing Natural Resource Plans and Landscape Ecological Plans on state forests. There is specific regulation about Sámi homeland and on obligation to negotiate with the Sámi Parliament on the matters concerning, for instance, the management, use, leasing and assignment of state lands, conservation areas and wilderness areas. There are negotiation obligations concerning forest management in state owned forests in Sámi homeland also in Finnish PEFC and FSC forest certification systems.

In privately owned forests there are certain exceptional forest areas and regulation concerning them. Some forest areas and their management is regulated by the Planning and Building Act (1999) when there exists a master plans or a detailed plan of the area. In those cases, local inhabitants, land owners and associations can take part in a planning procedure by expressing their opinions and appealing against the municipality council's decision on a final master/detail plan.

The following analysis concentrates on those privately owned forests where only the Forest Act applies i.e. where there is no master or detailed plan that would exclude the Forest Act. Private forests cover the biggest part of Finnish forests, and also most of the commercially used wood comes from these forests: 52,6 million m3 were logged in privately owned forests in 2007, including 6,2 million m3 from the forests owned by forest industry. Only 5,2 million m3 of wood came from state owned forests.

Participation and privately owned forests

Public participation may be considered in three parts as in the Aarhus Convention: 1) right to information, 2) right to express one's opinion and 3) right to appeal against decisions affecting one's rights and interests. Rights are not considered from the point of view of a forest owner, but a neighbour or a user of everyman's rights.

Right to information

Right to information concerns usually information that public authority has or should have. What could 'right to information' mean in forestry? Traditionally information on privately owned forests has been considered secret information on financial position of a forest owner. Act on the Openness of Government Activities was enacted in 1999 and it increased the amount of public information also in the forest sector. Nowadays most of the information coming to regional forest authorities concerning their duties as a public authority is considered public. Forest management plans made for private forest owners are not public, since they are voluntarily obtained by the forest owner and they are not part of the public tasks of regional forest centres.

As a part of forest law enforcement, forestry centres get annually about 100 000 forest use declarations. A forest owner must make a declaration to a regional forestry centre 14 days – 2 years before a logging would start and inform authorities about the form and location of forthcoming loggings and about possible special circumstances like special habitats on the managed area. Thus, theoretically a neighbour of a planned logging area can get the information

from forest authorities, but authorities or forest owners do not have a duty to actively inform neighbours about forthcoming loggings.

As already mentioned, not all forest-related information collected by authorities is public. Finnish forest authorities have inventoried Finnish forests in order to find these habitats. This place-specific information on the habitats of special importance is not considered public. Forestry is still considered to include mainly economic decision making concerning someone's property. It is not really considered an environmental or social issue, not to speak of cultural aspects. Yet, Act on the Openness of Government Activities allows only restricting the openness of economic data that reveals the annual income or net worth of a person i.e. the *total* wealth of a person. Also, according to the Aarhus Convention, authorities can only withhold (environmental) information that would *adversely* affect the privacy of individuals. There seems to be no convincing arguments to regard the location of habitats as secret information.

Right to express one's opinion

According to the Forest Act, the regional units of Finnish Forestry Centre (Metsäkeskus) draw up regional target programmes. These programmes include general objectives to promote sustainable management and to develop forestry in the area. Regional programmes do not include information concerning individual forest holdings. According to article 1.2 of the Forest Decree "in drawing up the programme the Forestry Centre must cooperate with the key parties representing the forest sector in the area, with the nature conservation authorities and other parties relevant for compiling the programme." Forestry centre organizes public hearings about target programmes and negotiate with several stakeholder groups like forest owner associations, nature protection associations etc. Working groups of stakeholders are valuable arenas for communication and knowledge sharing for the representatives of interest groups. The role of forest owners and other individuals is merely to produce information for the process (Leskinen, 2004: 615-616).

However, these regional target programmes have little practical meaning for private forest owners. Yet they are practically the only processes of decision making where public can express their opinion on forest management of private forests, albeit on a very general level.

Right to appeal

One can appeal to an administrative court against a decision of a regional Forestry Centre. However, no decision is being made on forest use declarations concerning loggings and other forest management measures. Therefore no one can appeal against them either. A regional target programme, in its turn, is so general, that it does not "affect anyone's rights or interests" and therefore nobody can appeal against it either. A forest owner can ask the Forestry Centre in advance for an opinion concerning a habitat of special importance (whether it is one or not and about the borders of the habitat). According to a decision (2006:37) of the Supreme Administrative Court, this kind of estimation is not a decision either, since the opinion of the Forestry Centre does not bind the forest owner.

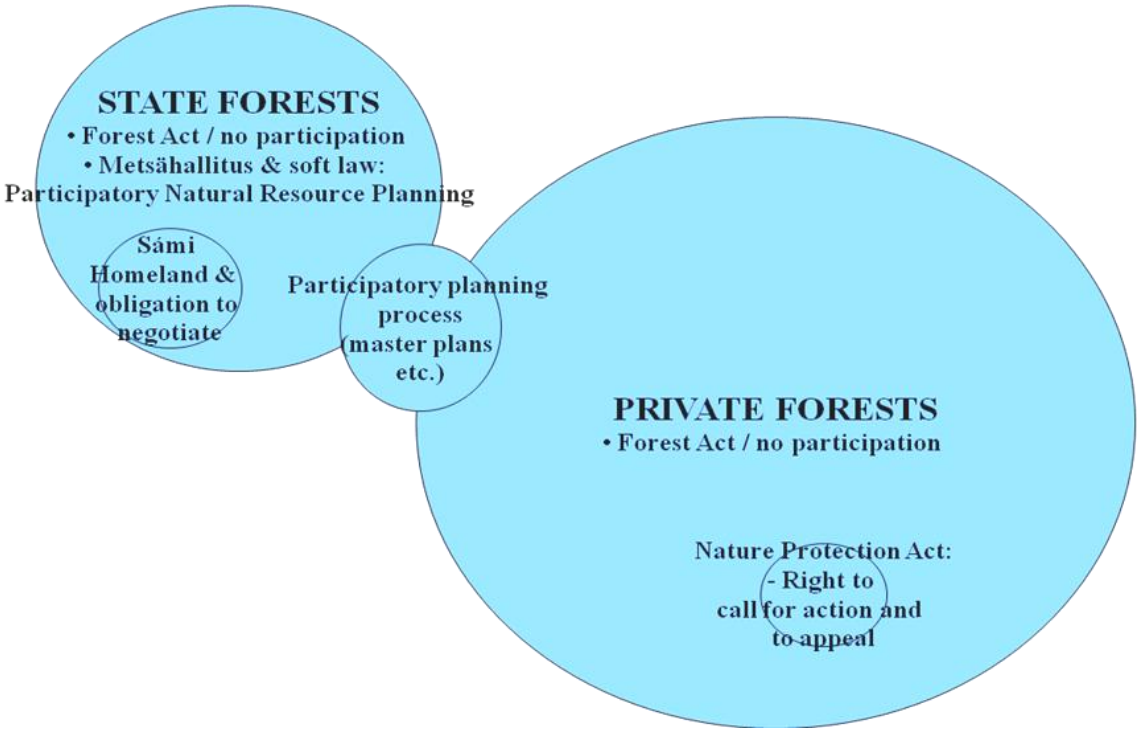
Special permit by the Forestry Centre to log or otherwise manage a specially protected habitat, which would otherwise cause significant losses to the landowner, is an appealable

decision as such, but it is not easy find out about such and decision, and it is not sure whether a court would accept someone else's but the forest owner's a right to appeal.

Decision of a Centre for Economic Development, Transport and the Environment concerning a permitted treatment of a breeding site or a resting place of a flying squirrel is called a decision (art 72a) and it should thus be appealable according to rules of NPA. Yet again, a neighbour or an "everyman" is unlikely to find out about the decision.

In general, for a neighbour, there are no chances to appeal against measures related to forest management unless those measures simultaneously violate another act, such as the NPA. Even if a neighbour cannot appeal against a forest declaration, a neighbour can institute proceedings at the Centre for Economic Development, Transport and the Environment, if it is necessary to prevent logging that is likely to deteriorate ecological values. According to the ruling of the Supreme Administrative Court (1.12.2000/3161) a neighbour is entitled to institute proceedings on the grounds of a forest use declaration if it shows that a logging would violate the NPA. Thus, a neighbour does not have to wait for a harvester to arrive, even if in practice that is usually the only way to find out about logging plans in a nearby forest.

Picture 1. Finnish forests differ in terms of public participation.



Participatory rights concerning privately owned forests are thus minimal and it seems that the aims of the section 20.2 of the Constitution of Finland are not being met "The public authorities shall endeavour to guarantee for everyone the right to a healthy environment and for everyone the possibility to influence the decisions that concern their own living environment". There is no possibility to affect changes in one's living environment, but is there any real need for public participation in Finnish forestry?

Why would we need participation in forestry?

In addition to general democratic rationale, participatory rights could, for example, help to protect special habitats of forests. There are still many problems in enforcing the habitat protection of the Forest Act. According to the Act, e.g. "the immediate surroundings of springs, brooks, rivulets constituting a permanent water flow channel, and small ponds" should be preserved, if they are in a natural state or resemble a natural state. However, only 2% of rivulets are today in a natural state (Nyroos et al., 2006: 22) and almost in one case out of five the characteristics of rivulets etc. are not been preserved in privately owned forests. Likewise, every third spring is not being preserved during forestry operations (Saari et al., 2009: 22). Publicity of information on protected habitats help to enforce forest law and it certainly could not make it any worse. Open information could also help to find the "missing habitats": approximately 1/5 of the sites remain undiscovered and in about 30 % cases there is wrong or incomplete information about a habitat (Kotiaho, Selonen, 2006: 61). In addition to creating "watchdogs", information could encourage people to find and go to these places and increase the knowledge about and attachment to nature.

Another issue is the living environment of people. The majority of Finns do not approve of clear cuts. (Valkeapää et al., 2009: 20) Even one third of forest owners would be ready to forbid clear cuts. According to surveys, about 40 % of forest owners think that there should be no loggings near houses (Rämö and Toivonen, 2009: 50). Yet people have no say about clear cuts next to their homes.

As we noticed above, neighbours do not have any rights concerning nearby forests. And even if the neighbour would be informed and heard, there would be no way to stop legal loggings. Without material rights procedural rights would be almost meaningless. This issue has been recognized and voluntary mechanisms to solve the problem have been developed. Both Tapio (Development centre for forestry) and MTK (The Central Union of Agricultural Producers and Forest Owners) have developed model agreements for renting forests for scenery or recreational use. In these agreements the forest owner and the neighbour of the forest would agree that the owner would not log a certain forest for 10-20 years and the neighbour will pay him an agreed sum of money. There is no information available whether and how many private scenery renting agreements have really been concluded.

The idea of these agreements is an example of the current trend of marked-based mechanisms used e.g. in nature protection nowadays. It clearly follows the idea of "beneficiary pays principle". The forest owner is not considered a "polluter", but a producer of commodities (scenery, recreation, berries and mushroom) that someone should pay for. It sounds fair, since everyone gets something. It could also be considered socially unfair, since everyone is not able to pay for scenery. In addition, forests near houses are not just for scenery and recreation, but forests also protect from disturbing noise and wind.

Thus the polluter pays principle cannot be applied to forestry, or can it? Partly it applies, since forest owners are obliged to protect special habitats at their own cost as long as financial losses are not significant. If the losses are significant, society i.e. beneficiary pays exceeding costs or the owner can log part of the habitat.

4. Future reforms in the Finnish Forest Act.

During the spring 2012 a multi-stakeholder working group has prepared the law reform. There have been representatives from e.g. ministry of forestry and agriculture, ministry of environment, forest research and NGOs. Ministry of agriculture and forestry will now continue preparing the reform.

In addition to allowing continuous cover forestry, there will be other changes in the act, too. The working group has, for example, suggested that the minimum size and age limits for final loggings should be abandoned. Also, some new categories of specially protected forest biotopes might be added to the Forest Act and there could be some other small amendments to biotope protection as well (Ministry of Agriculture and Forestry, 2012). It remains to be seen whether there will be enough consensus to make real and sustainable improvements in the forest legislation.

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EUROPE ON ITS WAY TOWARDS A LEGALLY BINDING AGREEMENT ON FORESTS

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Abstract

Securing healthy, stable, sustainably managed forests in the light of climate change and its severe consequences is one of the biggest challenges and has to be solved both in Europe, and globally. At the FOREST EUROPE Ministerial Conference on the Protection of Forests in Europe in June 2011 in Oslo, (Norway), ministers responsible for forests met to take far-reaching high-level policy decisions concerning the continent's forests. These decisions have laid the foundations for providing effective means that should enhance the role of forests in mitigating climate change, conserving biodiversity, fostering a low carbon economy, providing green jobs and addressing ways and means of tackling the issue of illegal logging. The main goal of this paper is to describe that new process of negotiating a legally binding agreement on forests in Europe, its initial phase and current status of the draft text, and to recommend subsequent steps towards successful conclusion of negotiations.

Key words: European forests, forest legislation forest policy, legally binding agreement, negotiation

Introduction

FOREST EUROPE is the pan-European policy process for the sustainable management of the continent's forests. It develops common strategies for its 46 participating countries and the European Union on how to protect and sustainably manage forests.

Since its inception in 1990, FOREST EUROPE has convened five Ministerial Conferences on the Protection of Forests in Europe (known under the abbreviation MCPFE), which has each taken an important step towards sustainable forest management throughout the region. Up to now, five ministerial declarations and nineteen resolutions have been adopted. Through the FOREST EUROPE commitments, policies for sustainable forest management have been defined and continuously developed for the pan-European region. The ministerial commitments have significantly influenced the formulation and implementation of national forest policies in the European countries. They also contribute substantially to achieving internationally agreed goals. Nevertheless, all these resolutions and decisions are on a voluntary basis only, without any legal obligations on the signatories' side[65].

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[65] The United Nations Forum on Forests (UNFF) agreed at its 7th Session on 16-27 April 2007 the "**Non-Legally Binding** Instrument an All Types of Forests" (NLBI; ECOSOC Resolution 2007/40.). The instrument was adopted by the UN General

Therefore, a key item addressed at the 6th FOREST EUROPE Ministerial Conference on the Protection of Forests in Europe was the elaboration of a strengthened policy framework for sustainable forest management throughout Europe.

Methodology

The main goal of the paper is to describe the initial phase of that new negotiation process on a legally binding agreement on forests in Europe (LBA), and to propose subsequent steps to facilitate further negotiations.

The first part of the paper briefly deals with the preparatory phase of the ministerial conference in Oslo, with the intention to present the bases for new decisions and outputs from the FOREST EUROPE ministerial conference in Oslo.

The second part focuses on the course of the first session of the Intergovernmental Negotiating Committee (INC) as established during that conference, and describes some crucial moments in the course of that session. The INC holds the mandate to develop such a LBA.

Finally, the third part looks into the draft text of a LBA after the first INC session, describes structure and main elements and stresses potential problematic issues. The description of the EU position and preparations for the second INC session form an integral part of this section.

The part on recommendations aims to propose possible future steps or measures for policy-makers at national level and negotiators at pan-European level.

Results

In the course of the 6th FOREST EUROPE Ministerial Conference on the Protection of Forests in Europe, held in June 2011 in Oslo (Norway), ministers responsible for European forests have given the mandate for starting a negotiation process aimed to develop a legally binding agreement on forests in Europe. This by taking two decisions which at the same time constitute the main output of that conference, namely

a) OSLO MINISTERIAL DECISION: EUROPEAN FORESTS 2020 (Oslo Decision)

The Oslo Decision includes a preamble, a vision for forests in Europe, goals, targets for 2020, the mission of FOREST EUROPE, and European and national actions.

b) OSLO MINISTERIAL MANDATE FOR NEGOTIATING A LEGALLY BINDING AGREEMENT ON FORESTS IN EUROPE (Oslo Mandate)

The Oslo Mandate includes a preamble, a decision to undertake negotiations on a LBA, and annexed rules of procedure for the Intergovernmental Negotiating Committee (INC).

The representatives of signatories of FOREST EUROPE decided to: elaborate an LBA on forests in Europe; establish an INC with the mandate to develop the LBA; establish a Bureau for the INC consisting of the Chair and representatives of Austria, Czech Republic, France, Norway, Poland, Russian Federation, Turkey and Ukraine, and Spain as permanent observer; and nominate Jan Heino (Finland) as the Chair. They further decided that the INC will base its work on existing

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Assembly in December 2007. FOREST EUROPE aims to contribute to the implementation of the NLBI, and to develop inputs from the Pan-European region to the work of the UNFF (Warsaw Declaration, para. 29f).

FOREST EUROPE resolutions and declarations and relevant international commitments relating to forests, as well as the non-paper.
The annex to the Mandate outlines the rules and procedures for the negotiating process, including on: the purpose; definitions; place and dates of up to four sessions; the agenda; representation; the Bureau; responsibilities of the Secretariat; languages; conduct of business; adoption and voting on decisions; and observers.

Basis for the negotiation on a LBA

Before the decision was taken and the Oslo mandate for negotiation signed, two groups of experts had analyzed the core pros and cons of such an agreement and discussed its potential elements. In that course, in 2010 the Non-paper on a Possible Legally Binding Agreement on Forests in Europe ("non-paper") had been developed. The "non-paper" contains recommendations for a possible structure, key elements and rules of procedure of a LBA. Some provisions of that non-paper found also their reflection in the mandate for negotiations.
In accordance with the mandate, negotiations should be completed before 30th June 2013. It is expected that within six months thereafter, during the seventh Ministerial Conference on the Protection of Forests in Europe in Madrid (Spain), the agreement will be open for signature.

First session of INC (INC1)

The start of negotiations was accompanied by an unforeseen postponement of the first INC session, which originally was scheduled for October 2011. Questions on the status of the INC and within that context on servicing the INC by some United Nations specialized agencies were raised by some organizations and delegations. It was expected that the Timber Section of the United Nations Economics Commission for Europe (UNECE), the United Nations Environment Programme (UNEP) together with the Food Agriculture Organization (FAO) and the European Forest Institute (EFI) would jointly service the negotiation process in accordance with the Annex to the Rules of Procedure of the Oslo Mandate. Nevertheless, procedural matters based on legal interpretation of the INC status established that UNECE and UNEP are not in the position to support the INC work, and now are in the position of observers.
The first session of the INC was held from 27th February to 3rd March 2012 in Vienna (Austria), with the main aim to formulate a common vision of the agreement components and given provision of guidance to the Secretariat and INC Bureau for developing the first draft of the LBA. The first session of INC caused wide general interest within Europe for this negotiation process. Over 120 delegates, representing the EU and 35 European countries, 16 intergovernmental and non-governmental organizations as well as Japan as an observer took part in that negotiation process.
Discussions at the first INC session were held in very constructive and positive atmosphere. INC confirmed its intention to use the "non-paper" as a basis for negotiations, while emphasizing the need to develop sections describing the purpose and principles of future agreement implementation. Parties also agreed on the format of the future agreement. It was agreed to prepare a framework agreement on forests in Europe, followed by the development of thematic and/or geographic protocols. It was also agreed that general obligations would be described in the agreement, while specific national objectives would be subsequently determined afterwards by protocols. At the same time, at first discussions more than negotiations have shown some

differences in the attitudes of countries. Two obvious tendencies towards the concrete content of the agreement emerged: On the one hand, some delegations tended to have a strict legal framework for cooperation within only few, but real clear commitments, while on the other hand, other delegations were in favor of having a broader agreement with more ambitious commitments, only.
By adopting the "Vienna guidance" for Bureau members and the INC Secretariat, the main goal of the Vienna INC session was achieved.

Key elements of the draft LBA text

During March till May 2012, there were joint meetings of Bureau members and the INC Secretariat, with the main goal to prepare and develop the first draft of the negotiation text, following the "Vienna guidance" given by the first INC. At the start of preparatory works, both INC Chair, Bureau members and INC Secretariat recognized that the "Vienna guidance" constitutes an excellent basis for preparation of the draft.
The English version of the draft negotiating text has been posted on the INC website (www.forestnegotations.org) on 1st of June 2012, with the aim to facilitate homework at national levels and bearing in mind difficult preparation procedures within the EU and its member states. Other language versions will be available on the website six weeks before the second INC session in accordance to the Rules of Procedures of the Oslo Mandate. The second INC session will be held in Bonn (Germany) from 3rd to 7th September 2012.
Up to now, the structure of the draft negotiating text includes the following sections:
I. Preamble.
II. Terms and definitions.
III. Purpose.
IV. Objective.
V. Principles.
VI. General obligations.
VII. Rules, bodies and other procedures.
VIII. Final clauses.
The content of each section is balanced and meets the general requirements of international agreements.
In addition to a general structure of the negotiation framework, the following aspects should be considered:
• *The name of the agreement*. Name "Legally Binding Agreement on Forests in Europe", as generally used in the Oslo mandate, was changed to "Forest Agreement". It was decided to bring the term "agreement" into play instead of "convention", because "convention" usually indicates a more global scope. However, the legal nature of any agreement derives from its contents of obligations and not from its name.
• *Geographic scope*. As expected the agreement will be regional and initially open for signature by signatories of FOREST EUROPE process. Keeping in mind future possible accession of countries from regions outside Europe, reference to Europe in most cases was removed from the draft. The scope currently is defined in the Article on "Signature".
• *The nature of commitments*. Keeping in mind that a future agreement will be legally binding, Parties should be very careful with references to documents which were adopted as part of the FOREST EUROPE process on a voluntary basis only, and are of recommendative character.

Therefore, the preamble mentions recognition of achievements of FOREST EUROPE, using the word "reference". Another question is about criteria and indicators for sustainable forest management, which are found under “General obligations” in full order aiming to allow Parties an in-depth review and appraisal, keeping in mind their legally binding nature in the future.

• *Reporting and compliance*. The section on compliance consists of possible scenarios, only – obligatory reporting, review process by experts, consultative process for correction, enforcement/public assessment reporting. The INC Secretariat and the Bureau would appreciate more guidance on this issue during negotiations. Besides "General obligations", also specific obligations regarding reporting on the state of forests and sustainable forest management are included. These obligations could be considered as overlapping with the necessity of compliance with reporting on the agreement implementation. The acting (then: previous) system of reporting on state of forest and achievement of sustainable forest management, however, has been a voluntary process where due to absence of basic statistical information the signatories of FOREST EUROPE were unable to provide completed information.

• *Financial obligations of the Parties of the negotiation process*. At this stage, the financial obligations for LBA implementation are not yet defined. The process of negotiation is funded by voluntary contributions from some Parties through a Trust Fund established and managed by FAO staff. The only reference now to the financial commitment is a reference that a Conference of Parties (COP) will determine its financial rules. Usually there are several options how to determine the functioning of international agreements - voluntary contributions of required level from all Parties or differentiated contributions in compliance with the UN rates. This decision should be taken before deciding on the location of the secretariat of a future agreement.

• *Final clauses*. Articles of the section "Final clauses" in most cases coincide with the relevant provisions of the Kyoto Protocol to the Framework Convention on Climate Change.

• *The possibility of the agreement being brought under the United Nations umbrella.* The Oslo Mandate requested INC to consider the possibility of the agreement being brought under the United Nations umbrella (para. 24.g). There are two different options to achieve that goal:

- *Establishing a UN agreement* - the agreement is adopted by a body of the United Nations (UN) or of one of its specialized agencies and the secretariat services are provided by the UN Secretariat, a programme or a specialized agency or the combination of these. The agreement could be brought under the UN umbrella by inviting an organ of the UN or of one of its specialized agencies to adopt it. In that case, the extraordinary FE ministerial conference that will be convened within six months after the conclusion of the negotiations would endorse the agreement and request the agreement to be referred for consideration and adoption within the UN or one of its specialized agencies. From such a decision will follow that the secretariat services and the depositary would be located within the UN system.
- *Establishing a self standing (non-UN) international agreement* - the agreement is adopted by a FE ministerial conference and the secretariat services are provided by the UN Secretariat, a programme or a specialized agency or the combination of these upon invitation. Such an arrangement would broadly qualify for “the agreement being brought under the United Nations umbrella”, but the agreement itself would not be a UN agreement governed by the UN rules. The extraordinary FE ministerial conference that will be convened within six months after the conclusion of the negotiations could adopt the agreement and open it for signature thereafter. In that case, the only possibility for bringing it under the UN umbrella would be to invite the UN Secretariat, a programme or a

specialized agency or the combination of these to service as its secretariat. In that case, the administrative rules and procedures of the UN or the specialized agency in question would apply in respect of the funding of its activities, its personnel, the administration of any trust funds established, etc.

Whether or not an agreement will be adopted by an organization of the UN system, the agreement may anyhow be deposited with the head of the UN or that of a specialized agency. But doing so would not in itself mean that the agreement is "brought under the UN umbrella".

EU preparation for the negotiation process

At the first session, a joint position of the EU and its member states was presented by a delegate from Denmark, then representing EU Presidency. A presentation of the EU and its member states, which is in accordance with the Lisbon Treaty and the Practical Arrangements, is agreed for the LBA negotiation.

EU preparation for the second INC session is in the same line like for the first session. The EU and its member states prepare their common position for negotiation. In general, the EU and its member states have divided the preparation into two parts:

- Substantial part, which is more about content: discussions are dealing with obligations, and important questions such as how to stress in depth the added value of LBA and what actually the added value is;
- Legal part, focusing on rules and procedure, compliance mechanism etc.
  On one hand, such procedure (speaking as "one man for 28 member states") could speed up exchange of positions; on the other hand it seems during the negotiation that there are only few players on the pitch and not 46 signatory countries.

Conclusion and Recommendations

The first draft of the Agreement was distributed in due time. The parties had enough time for national consultation and then, where necessary, further intergovernmental consultation and coordination (especially coordination of EU positions in negotiations). Given the diversity of both natural and economic conditions of European countries, to reach consensus on all issues may be extremely difficult.

On the other hand, the spirit of the first INC session in Vienna has shown that all parties still believe in the success of negotiations, which is of high importance for the promotion of sustainable forest management in the European context.

To foster effective progress for the upcoming session, the Bureau will face the challenge:

- to be positive and to motivate delegations to negotiate key questions, such as:
  - terms and definitions
  - criteria and indicators for SFM
  - bringing LBA under the UN umbrella
- to be prepared for unscheduled and unexpected developments during the second INC session, such as:
  - fast negotiation progress and to have "empty days"
  - slow negotiation progress and not to achieve the main goals of the INC 2
  - different negotiation progress in parallel sessions

- consideration on informal working groups (more about expert discussion), e. g. discussion on terms and definition
- call for clarification on further intersessional work

To be prepared from national point of view, delegations should:

- be positive,
- provide in depth analyses at the national level bearing in mind potential dangers and threats for national forestry
- analyze different negotiating scenarios during the second INC session

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НАПРАВЛЕНИЯ РЕШЕНИЯ КОНФЛИКТОВ МЕЖДУ ЭКОНОМИЧЕСКИМИ И ПРИРОДООХРАННЫМИ ПОТРЕБНОСТЯМИ В ЛЕСНОМ ЗАКОНОДАТЕЛЬСТВЕ РЕСПУБЛИКИ БЕЛАРУСЬ

ПУГАЧЕВСКИЙ А.В.*

Резюме. The report highlights the main environmental problems that require solutions or optimization in the forest legislation of the Republic of Belarus: the classification of forest land, modes of forest management and forest management in the high-value areas, felling age, the allocation of valuable habitats, invasive species management, compensation for loss of forest economy, etc.

Ключевые слова: forest law, groups and categories of forests, protected areas, special protection areas, forest habitats, harvesting age, alien species, selective logging, forest loss compensation.

Лесное хозяйство в Республике Беларусь, как и в любой другой стране, ведется в соответствии с законодательством: совокупностью нормативных правовых и технических актов, составляющих лесное и смежные права. Главным законодательным актом, регулирующим лесные отношения в стране, является Лесной кодекс, принятый в 2000 году. В развитие кодекса Президентом и Правительством принят ряд нормативных правовых и нормативных технических документов (указы Президента Республики Беларусь, постановления Совета Министров, технические кодексы установившейся практики), которыми детализированы права владения, распоряжения, управления и пользования лесами в Республике Беларусь, а также порядок и правила ведения лесного хозяйства и лесопользования.

Перед лесным хозяйством, как одной из отраслей экономики, стоит задача по обеспечению народного хозяйства сырьевыми ресурсами, и прежде всего древесиной, а также получения максимального дохода, в том числе за счет экспортных поставок. С другой стороны, лесное хозяйство относится к числу отраслей, в наибольшей степени ответственных за состояние природных экосистем сохранение их экологических функций. При этом, в ряде случаев, экономические и экологические функции лесного хозяйства в ступают в противоречие друг с другом. Общая площадь земель лесного фонда, за состояние которых отвечают 258 организаций, ведущих лесное хозяйство, составляет

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8410,1 тыс. га, или 40,5% общей площади страны. Именно на этих землях сконцентрирована основная доля особо охраняемых природных территорий – заповедников, заказников, памятников природы – (далее – ООПТ), мест обитания и произрастания животных и растений, занесенных в Красную книгу Республики Беларусь, редких растительных сообществ и уникальных лесных и болотных ландшафтов. Именно леса, а также расположенные на землях лесного фонда болота и водоемы, выполняют основные средообразующие и защитные функции. Если в целом по стране ООПТ занимают 7,7% национальной территории, то в отношении земель лесного фонда эта доля достигает 14,3%, в том числе для покрытых лесом земель она составляет 13,3%.

В целом общая площадь охраняемых и защитных лесов I группы составляет 4849,2 тыс.га или 51,4% от всей площади лесного фонда (на 1.01.2011 г.), эксплуатационные леса II группы занимают 4583,5 тыс.га или 49,6%.

В соответствии с законодательством Республики Беларусь из расчета рубок главного пользования исключено 1480,9 тыс. га лесов, из которых 591,5 тыс. га расположено на ООПТ (7,4% всех лесов), и 996,4 тыс. га – это особо защитные участки за пределами ООПТ. Нельзя сказать, что на всей этой территории не ведется пользование лесными ресурсами: осуществляется промежуточное и побочное пользование, ведутся по необходимости санитарные и прочие рубки. При этом приходится признать, что в ряде случаев ограничения на лесопользование введены без достаточных на то объективных оснований, в других случаях редкие и особо ценные участки лесов и других природных комплексов не охвачены режимами охраны. Не всегда отнесение участков редких или особо ценных экосистем обеспечивает им сохранность из-за неадекватности установленных режимов.

Для имеющих наибольшие площади категории лесов 1-й группы (леса лесохозяйственных зеленых зон вокруг населенных пунктов, защитные полосы лесов вдоль железнодорожных линий и республиканских автомобильных, леса третьей зоны округов санитарной охраны курортов, запретные полосы лесов по берегам рек, озер, водохранилищ и других водных объектов и др.) установлены весьма мягкие ограничения в сфере лесопользования, которые в основном сводятся к повышению возраста главных рубок на один класс возраста (т.е. 10 лет для мягколиственных или 20 лет – для хвойных и твердолиственных пород). В большинстве остальных категорий лесов 1-й группы допускаются так называемые «рубки обновления», практически не отличающиеся от рубок главного пользования, но только проводимых в перестойных насаждениях, часто наиболее ценных в экологическом отношении.

Имеет место дублирование ряда категорий лесов 1-й группы и особо защитных участков леса. При весьма значительной общей площади ООПТ остаются без охраны целые категории участков лесов, болот, водоемов, которые следует сохранить, в том числе и в порядке интеграции страны в единое европейское пространство: объекты Директивы о местообитаниях Европейского союза, Изумрудной сети, леса высокой природоохранной ценности. Хотя фактически многие из этих объектов уже находятся в той или иной форме под охраной, но не в названном качестве.

В настоящее время к особо защитным участкам леса (далее - ОЗУ) относятся участки с наличием редких и находящихся под угрозой исчезновения видов диких животных, дикорастущих растений, реликтовых и интродуцированных пород, участки вокруг глухариных токов, полосы леса вокруг санаторно-курортных и оздоровительных организаций, вокруг населенных пунктов и садоводческих товариществ, памятники

природы местного значения, прибрежные полосы леса, участки леса на особо охраняемых частях заказников, участки в оврагах и (или) балках, в рекультивированных карьерах, а также примыкающие к ним, участки на крутых склонах, на легко размываемых и развеваемых землях (песках, торфяниках), полосы леса, примыкающие к железнодорожным линиям и республиканским автомобильным дорогам, участки леса в поймах рек, участки леса, имеющие специальное назначение (эталонные насаждения, плюсовые насаждения, постоянные лесосеменные участки, участки мониторинга лесов, постоянные пробные площади, участки насаждений медоносов), участки леса генетических резерватов, научного и историко-культурного значения, участки леса в противоэрозионных лесах, участки леса в болотных лесах.

Даже в приведенном перечне имеют место дублирующие категории ОЗУ: участки леса в противоэрозионных лесах – с одной стороны, и участки в оврагах, балках, рекультивированных карьерах, на крутых склонах, на легко размываемых и развеваемых землях – с другой.

Совершенствования требуют и условия выделения ОЗУ. Так, определение участков с наличием редких и находящихся под угрозой исчезновения диких животных и дикорастущих растений должно опираться не на специальные научные исследования, как это установлено ныне, а на государственные кадастры растительного и животного мира, как на официальные своды данных о распространении этих категорий живых организмов, а также на паспорта, хранящиеся в органах Министерства природных ресурсов и охраны окружающей среды (районных инспекциях и областных комитетах).

Все названные проблемы могут быть решены путем совершенствование порядка выделения групп и категорий защитности и особо защитных участков леса, а также более полного и точного описания режимов лесохозяйственной деятельности в них.

В законодательство, как природоохранное, так и лесное, следует ввести понятия «биотоп» и «особо ценный биотоп», по аналогии с введенными в практику ряда стран Европы ключевыми биотопами. Это позволит вводить охранные режимы для небольших по площади ценных природных объектов без громоздкой и сложной процедуры создания ООПТ. При этом особо ценные биотопы должны выделяться в качестве одной из категорий ОЗУ в процессе проведения лесоустройства, которое проводится раз в 10 лет. В случае утраты этих биотопов в результате стихийных бедствий (пожаров, ураганов, массового размножения вредителей леса и т.п.) эти ОЗУ так же легко могут упраздняться при очередном лесоустройстве.

Требуют оптимизации и нормативные акты, регулирующие ведение лесоустроительных работ, как в части выделения ОЗУ, более четкого определения режимов ведения лесного хозяйства на ООПТ, так и в связи с возникновением новых вызовов и угроз процессам лесовыращивания. Эти вызовы и угрозы обусловлены радикальными изменениями условий произрастания лесов, вызванными деятельностью человека, а также изменениями климата. Это должно учитываться при анализе ситуации в лесах, основные угрозы должны определяться как по их характеру, так и по местам их наиболее вероятного проявления. В настоящее время это делается только в отношении угроз лесных пожаров и, отчасти, распространения болезней и вредителей леса.

Не регламентировано действующим лесным законодательством страны использование чужеродных, в том числе и вредоносных растений и животных, а ограничения, установленные в смежном законодательстве (о растительном и животном мире) не считаются обязательными, поскольку соответствующие корреспондирующие

акты лесного законодательства пока не приняты. Результатом отсутствия внимания к этой проблеме стало чрезмерно широкое распространение в лесах страны активно распространяющихся агрессивных видов древесных и кустарниковых растений: дуба северного, клена ясенелистного, робинии лжеакации, черемухи виргинской, бузины красной и др. Эти растения вытесняют из состава лесов полезные и редкие аборигенные виды, уменьшают продуктивность насаждений, понижают уровень специфичности белорусской природы. Больше того, насаждения интродуцированных древесных пород включаются в число особо защитных участков. С таким подходом можно согласиться только в отношении экспериментальных или имеющих историческое значение посадок.

Проблемным и дискуссионным является вопрос о возрастах рубок главного пользования, который зависит в настоящее время только от доминирующей древесной породы и принадлежности насаждения к группе леса. При этом не учитываются ни продуктивность насаждений, ни состояние древостоя. В результате в рубку идут все достигшие возраста главного пользования насаждения, в том числе и не достигшие высоких размерных кондиций древостои III-V классов бонитета. При этом выход наиболее дорогостоящих крупномерных сортиментов оказывается весьма незначительным. С другой стороны, сохранение на корню до 80-100 лет наиболее быстрорастущих, но повреждаемых стволовыми гнилями ельников на землях бывшего сельскохозяйственного назначения приводит к тому, что значительная часть получаемой при их рубке древесины оказывается непригодной для использования (неликвидной) или низкосортной. Эти проблемы, которые имеют и экологическую, и экономическую составляющие, могут быть решены путем введение дифференцированных возрастов главных рубок.

В последнее десятилетие в Беларуси значительно увеличилась доля несплошных рубок главного пользования: с 12.7% от их общего объема в 2000 г. до 25,4% в 2010 г. При этом, однако, доминируют так называемые полосно-постепенные рубки, которые, по сути, являются узколесосечными чересполосными сплошными рубками. Практика экологически наиболее приемлемых выборочных рубок главного пользования почти отсутствует. Правилами рубок следует расширить сферу применения именно этой категории рубок главного пользования. Увеличение доли выборочных рубок позволит не только сохранять лесную среду на большей части земель лесного фонда, поддерживая защитные функции лесов, но и повысить устойчивость насаждений к неблагоприятным природным и антропогенным воздействиям. Это достигается тем, что при ведении выборочного хозяйства формируются более устойчивые разновозрастные и смешанные по составу насаждения, наиболее приближенные по структуре к естественным лесам. Одновременно достигается экономия на лесовосстановлении, поскольку смена поколений леса осуществляется постепенно и полностью за счет естественного возобновления под пологом периодически изреживаемых выборочными рубками древостоев.

К числу неурегулированных в законодательстве страны вопросов следует отнести отсутствие механизма компенсации ущерба (упущенной выгоды, дополнительных затрат и т.п.) при введении ограничений на лесопользование в природоохранных целях, а также отчуждении земель лесного фонда для государственных и иных нужд: строительства и расширения путей транспорта, промышленных предприятий, разработки полезных ископаемых и т.п. Без правового урегулирования этих проблем трудно ожидать от организаций, ведущих лесное хозяйство, высокой заинтересованности в создании на их землях ООПТ, выделения ОЗУ. Изъятие же лесных земель без соответствующей компенсации не учитывает экономические интересы ведущих лесное хозяйство

организаций, сводит «к нулю» значительные трудовые усилия и финансовые затраты, понесенные на создание и выращивание насаждений.

Еще одной проблемой, требующей правового решения в Беларуси, является проблема управления землями, занятыми древесно-кустарниковой растительностью и болотами, за пределами лесного фонда. Общая площадь таких земель составляет, по материалам Государственного земельного кадастра Республики Беларусь (1.01.2011 г.) 991,6 тыс. га, из которых 540,6 тыс. га под древесно-кустарниковой растительностью и 451,0 тыс. га – под болотами. Большая часть этих земель находится в ведении сельскохозяйственных организаций и фермерских хозяйств (668,4 тыс. га), организаций природоохранного, оздоровительного, рекреационного и историко-культурного назначения (65,6 тыс. га), железнодорожного (21,2 тыс. га) и автомобильного (14,3 тыс. га) транспорта, а также организаций обороны, промышленности, связи, энергетики, строительства, торговли, образования, здравоохранения и иных землепользователей. 156,4 тыс га таких земель вообще не распределены по землепользователям.

Ведение лесного хозяйства на большей части этих земель не организовано, в их отношении нередко принимаются экологически и экономически необоснованные управленческие решения. Нередко эти земли просто не используются. И это почти миллион гектаров. Поэтому требуется провести детальный анализ этих земель, режимов их использования и принять обоснованные правовые решения о дальнейшей их судьбе: в том числе о передаче в состав лесного фонда под управление юридических лиц, обладающих правом на ведение лесного хозяйства.

REFORM OF PUBLIC FOREST ADMINISTRATION CASE STUDY: HESSIAN STATE FOREST ADMINSTRATION TEN YEARS AFTER REFORM

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Abstract

In 2001 a reform of the Hessian State Forest Administration was realised after a long and extensive planning and discussion process involving politicians, personnel and stakeholders. The reform was enacted by law through the Hessian Parliament. The main outcome of the reform was that - contrary to the previous situation- the State Forest Administration was now divided into an authoritative and an operational wing.

The authoritative functions are dealt with in a three level organisation (Hessian Ministry of Environment, Energy, Agriculture and Consumer Protection, three Provincial Forest Administrations and 28 Council Forest Administrations).

The main tasks are:

- Supervision of forest owners regarding the compliance of legal responsibilities;Approval and monitoring forest management plans;
- Decisions about afforestation, conversion of forests;
- Representation of forestry issues in public planning procedures.

The operational tasks were assigned to the State Forest Enterprise Hessen-Forst, which was established as a two-tier organisation, showing one headquarters and 41 Forest Management Units. The tasks are determined in the Forest Law and include inter alia:

- Sustainable management of the state forest according to economic principles under special consideration of public benefit and interests;
- Advice and support of corporate and private forests according to legal and contractual bases;
- Mid-term planning for the state and corporate forests.

In the beginning there were some difficulties with regard to the position and responsibilities of the members of the State Forest Administration either as part of the authoritative or the operational wing. Ten years after the implementation of the new organisation experiences now show that this structure is well functioning and widely accepted by the general public, employees, clients (among others: other forest owners, buyers of forest products) and other stakeholders.

Keywords: organisational set-up, authoritative function, operational function

1. Preface

On 01.01.2001, a new organisational model of public forest administration was enacted in the German Federal State of Hesse by law through the Hessian Parliament as the outcome of a long and extensive planning and discussion process involving politicians, personnel and stakeholders on the reform

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of the State Forest Administration [4]. Even though organisational changes take their time to be effective, first experience can be gained.

2. Situation up to 2001

Due to historical reasons (e.g. transfer of aristocratic land into public land) and due to the federal structure of the Republic of Germany, forest governance functions and management of state owned forest are primarily matter of the respective Federal States.

On federal level German Federal Ministry of Food, Agriculture and Consumer Protection has coordinating functions regarding forest policy, gathering and providing information about forestry and orientation of public support schemes for private and corporate forest owners.

Hence, the Hessian State Forest Administration was responsible for the management of 340,000 hectares of state owned forests including marketing of 2.3 Mio m^3 of round timber every year, management of 325,000 ha of corporate forests , forest law enforcement, forest extension services, forestry research, implementation of subvention programmes for private and corporate forests.

The portfolio included authoritative as well as operational tasks, or as Mann (2012) described: " Public forest sector administration of the German States are traditionally characterised by a complexly intertwined portfolio of political, executive, economic and social tasks .."

Members of the forest administration served in consultative, police, managerial, business or supervision functions, often simultaneously. The organisational set-up was characterised by a three level administration (ministry, provincial forest administration, district forest offices).

3. Rationale for reform

The rationales to discuss a reform of the public forest administration and to implement a new structure hence enclosed managerial, legal and political aspects as well. The existing organisational set-up reflected the assignment of manifold duties including a mix of authoritative and operational functions and a public perception of the forest administration that first of all should guarantee sustainable production of forest products and safeguard supervision and law enforcement. However, the appearance very often seemed to be too bureaucratic and showed a lack of flexibility when responding to new challenges as for example evolving from developments happening in forest industry or resulting from spatial and land-use planning processes. At the same time society's demand for environmental services increased. The role of forest administration changed from a supervisory, sometimes superior to a more moderating one. The forest administration was increasingly thought to represent forestry issues in interdisciplinary procedures also.

Another aspect rose from the situation that the commingling of executive roles and entrepreneurial operations (Mann 2012) made it nearly impossible to prepare a proper budget.

Therefore one goal of the reform was to allow a more economic orientation of the State forest administration enabling more freedom regarding the operational tasks. This should be achieved *inter alia* through creation of more economic and uniform mechanisms and processes for the entire area of Hesse. This idea also pays tribute to the development within the forest industry which can be characterised by the establishment of larger units.

Another framework condition which demanded discussion was the fact that EU regulations stipulate very clearly that for example with regards to forest reproductive material, tasks of the official body responsible for the control of the marketing or of the quality of the material could only be delegated to a person that has no personal interest in the outcome of the measures it takes. Collection and marketing of tree seeds are part of the forest enterprise's operational activities, whereas the approval of seed stands is task of the forest authority. A strict separation of responsibilities was also seen necessary in case of granting financial subsidies for private and corporate forest owners. Extension service and approval of measures that could be financially supported should be in different responsibilities.

4. New structure

Different organisational schemes were intensively discussed within the process, ranging from complete privatisation of the operational tasks to segregation into two separated state administrations. However, an important key point was that the organisational set up had to be in line with Agenda 21 and the forest principles of UNCED in Rio 1992, the Ministerial Conference on Protection of Forests in Europe, MCPFE Helsinki 1993, the Agenda 2000 of the European Commission, the National Forest Programme for Germany and the Forest Act of Hesse [4].

According to the needs finally an organisational structure was chosen that under the umbrella of the Hessian Ministry of Environment, Energy, Agriculture and Consumer Protection consists of two wings, with one embodying the authoritative functions and the other being a state owned forest enterprise (SFE Hessen-Forst), where all the operative tasks from the provinces and the ministry had been transferred to. [2].

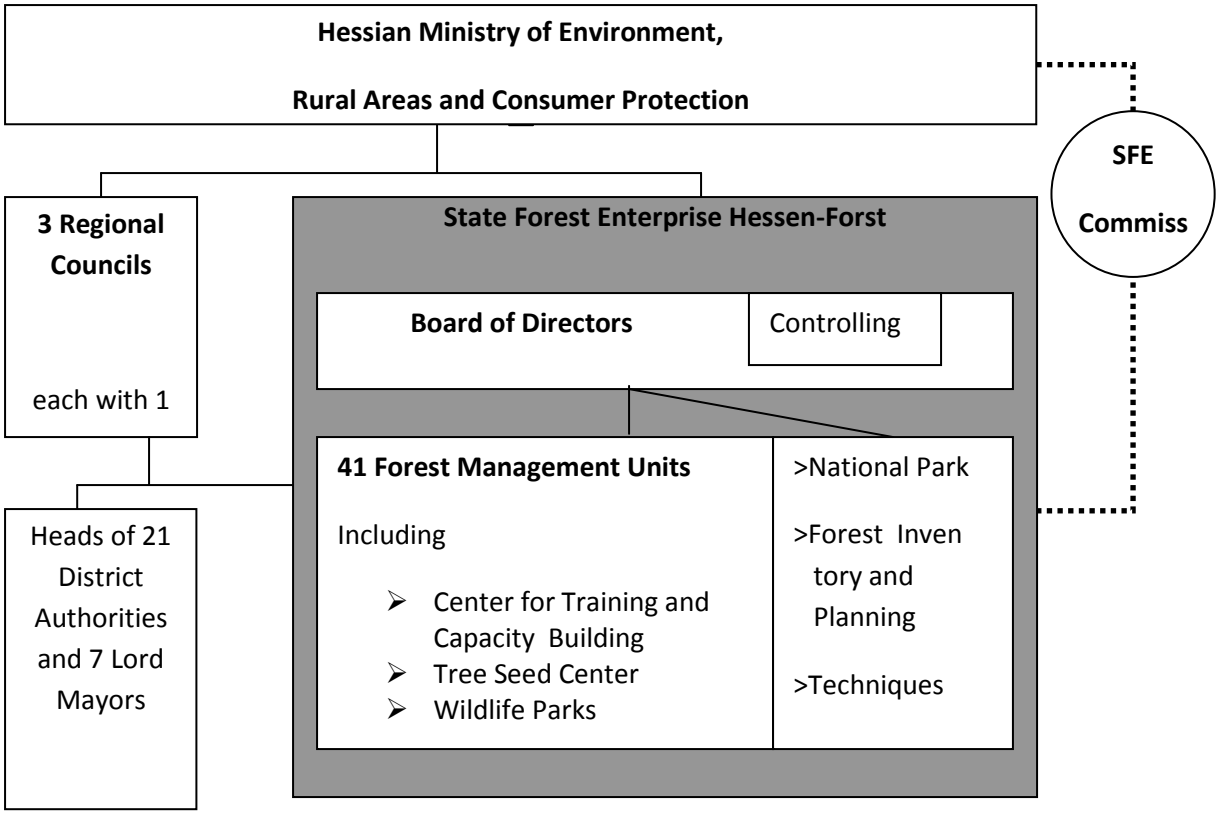

Fig: 1 *Organisational chart of Hessian State Forest Administration*

5. Authoritative Functions

For the authoritative functions a three level organisation remained with the ministry as supreme forest administration, a forest administration on province level and local forest authorities on district level, those being integrated into the forest management units and in county councils respectively.The main responsibilities of the "Authoritative wing" of the Hessian Forest Administration as specified in the Hessian Forest Act are [3]:

- Supervision of forest owners regarding the compliance with regulations
- Approval and monitoring of the medium-term forest management plans
- Decision about afforestation, conversion and reforestation
- Monitoring of forest functions
- Representation of forestry issues in procedures, which may have impacts on forests

6. Operational Functions

The Hessian State Forest Administration is responsible for the sustainable management of the state-owned forests and on demand also for corporate and private forests. These tasks are fulfilled through the State Forest Enterprise Hessen-Forst.

The tasks of the State Forest Enterprise Hessen-Forst are described in § 4(3) of the Forest Act of Hesse dated 22.12.2000 [3].

- Sustainable management of the state forest (345.000 ha) according to economic principles under special consideration of public benefit and interests.
- Advice, support and management of corporate (325.000 ha) and (mostly small-scale) private forests (106.000 ha) according to legal and contractual bases.
- Inventory and mid-term planning for the state and corporate forests.
- Assistance to the financial support of private and corporate forest owners according to European, federal and federal state law.
- Research and studies on ecology, forest growth, site conditions, conservation of genetic resources, health control of forests, landscape conservation and environmental control.
- Real estate management of the SFE.
- Training and capacity building for all personnel, environmental education and public relations work shall increase the awareness of citizens on the natural sources of livelihood and relatedness of people with nature.
- Fulfilment of tasks, assigned to the SFE by law and implementation of law to protect the forest for public benefit (sovereign tasks).

The ministry responsible for forestry develops and issues principles and guidelines and supervises the State Forest Enterprise as it is specified in the statutes of the State Forest Enterprise of 10. September 2002 [3]. [5]. The minstry is responsible for:

- Approval of the statutes of the SFE
- Acceptance of the standing orders of the SFE
- Appointment of the Director General of the SFE
- Approval of the annual plan and balance
- Appointment of the auditors in consultation with the Hessian Court of Audit
- Decisions of countrywide political relevance

When the SFE was created, a reduction and simplification of regulations was carried out. The SFE has to deal with only few regulations of general importance, which cover the following aspects:

- Guidelines for the management of State forests (2002)
- Principles for silviculture, forest protection and nature conservation in the State forests
- Hunting in the State forests
- Implementation of environmental education
- Forest research

The most important determination is that the Ministry does not interfere in operational business. Therefore SFE has full freedom of action, but also full responsibility.

7. Implementation since 2001

As far as the authoritative functions are concerned the situation, compared to the previous one, had not changed very much, apart from the fact that the responsible officials have to treat state forest enterprise like any other forest enterprise.

The SFE has a country-wide field structure, which had been aligned to the new organisational set up and works close to the citizens according to the principle of "integrated sovereignty". That means, apart from forest management and other services, the forest management units fulfil some authoritative functions as well, though through a specially designated person. The responsibilities are continuously adapted to the changing needs of society. The SFE Hessen-Forst maintains specialised branches for forest inventory, planning, forest valuation, forest techniques, tree seed and wildlife parks.

All state-owned forest in Hesse (345.000 ha) is transferred as economic property to the SFE and has to be managed according to economic principles under special consideration of the public benefit functions. State forest management is certified by *PEFC*.

Moreover, Hessen-Forst is entrusted with the management of the corporate and private forests, if requested by the owners, and respective contracts are concluded. For the time being 95 % of the local authorities (> 400 municipalities) have contracted Hessen-Forst for the management of their forests (total of 324.000 ha). Furthermore Hessen-Forst is asked to manage about 50% (106.000 ha) of the private-owned forests. In Hesse, there are more than 47.000 small-scale private forest owners. In order to overcome structural disadvantages and to enable sustainable forest management, the formation of private forest owners associations are encouraged and supported. The support of the small scale forest owners (mainly forest farmers) aims at increasing income of the farmers and improvement of living conditions in rural areas.

In addition to the management of the forests, Hessen-Forst has to fulfil duties in public domains, delegated to the enterprise by the State of Hesse such as: stabilising the ecosystem, increasing biodiversity, managing protected areas, implementing EU-Regulations and Directives. The objectives of nature conservation have to be considered and integrated into sustainable forest management. Hessen-Forst manages about 800 protected areas with a total area of more than 35.000 ha on behalf of Regional Councils, as well as one National Park (Kellerwald-Edersee) with some 5.000 ha. [4]. [6].

8. Supervision

An external independent SFE Commission shall ensure balance and continuity of the strategic goal setting for the SFE. This commission has inter alia to analyse the annual report of the SFE and to give advisory support to questions concerning the strategic targets. The twelve members of this committee are appointed by the responsible Ministry in consultation with the Ministry of Finance or the President of the Hessian Parliament. The members of the SFE Commission chaired by the responsible minister represent political parliamentary parties as well as other stakeholders like forest owners, environmental organisations.

The responsible ministry has to organize the supervision of the SFE. As it is not only suitable, but necessary to adjust supervision processes to the specific topics, the following principles were agreed on:

The supervision coordinates the generation of goals and objectives for the SFE and checks the results with regards to appropriateness, economy and rightfulness. It refers to all tasks which were transferred to the SFE especially

- Timber and NTFP production in the State forest as well as biological and financial results and the conditions of the State property,
- Protection and rehabilitation in the State forests as well as the maintenance of the protective functions of forests in the framework of the special commitment to the public benefit
- Recreational function in the State forests and environmental education*:* maintenance of an appropriate infrastructure and implementation of environmental education,

- Services for third parties*:* Quality and economy of services especially for the management of communal and private forests,
- Authoritative functions*:* Implementation of the tasks as an authority, compliance to the annual plans, information and advisory services for third parties.

The instruments established to conduct supervisory tasks include measures on parliamentary level as well as measures on forest management unit level.

- **Annual budget**

  The Hessian Parliament has to approve the annual plan and to determine the budgets for specific ‚products‘:

- State forest management
- Management of the National Park ‚Kellerwald-Edersee‘
- Management of the communal forests
- Contract management of the private forests
- Environmental education
- Research

The split into different ‚products‘ has been done to enable a replicable controlling

- **Standing orders**

  The SFE is obliged to inform the Ministry on all standing orders of general importance.

- **Quarterly reports**

  The SFE informs in quarterly reports about important results and developments regarding all products. Deviations from goals and their implications have to be presented in detail.

- **Annual account and statement of affairs**

  Annual account and statement of affairs have to be prepared according to the regulations of the State Budget Act.

- **Coordination committee**

  A coordination committee has meetings on regular (quarterly) basis. Representatives of the Ministry (Department of Forestry) and the SFE meet for mutual information and position on actual and strategic issues. The quarterly reports are discussed. The results of the meetings are documented.

- **Special briefings**

  The mid term forest management planning which is elaborated on forest management unit level has to be approved by the Ministry.

9. Experiences

When discussing a reform of the State Forest Administration, whose organisational set-up existed for 50years without major changes, the process is accompanied by both positive and negative expectations. A couple of advantages were envisaged like more efficiency, more customer orientation, improved economic results, and more harmonisation of processes. On the other side there was a lot of concern that these objectives in particular that of economic orientation will finally result in personnel reduction, negligence of environmental activities, reduced quality of extension services. It was feared that economic aspects would overbalance all the others (Wilke 2011).

Ten years after implementation of the new structure it became clear that this was not just an action only, but a process. In the beginning forest officials and stakeholders had to familiarise with the new structure. Foresters had to find their position either as members of the SFE or as part of the forest authority. They had to be mindful of whether they are acting on behalf of the SFE or whether they fulfil authoritative functions. The officials of the authoritative wing had to learn that operational aspects had to be neglected in their decision-making. They had to advocate the interests of the forests despite its kind of

ownership. For instance, the decisions about suitability of sites to establish wind energy plants were made according to criteria of the forest law only, notwithstanding operational interests, which sometimes had lease income as priority interest. The new structure emphasised the neutral point of view of the forest authorities [3].

The number of employees in the forest administration decreased. The establishment of a two tier organisation and the improvement of operational processes allowed shifting of personnel to other tasks and saving through not replacing retired officers. However, this procedure did not characterise the forest sector only, as some years ago the whole civil service of Hesse was restructured according to the concepts of "New Public Management", where all tasks of the state administration were reviewed due to necessity. Employee surveys showed increasing acceptance (Wilke 2011).

As far as ecological aspects are concerned, objectives of nature conservation have to be considered and integrated into sustainable forest management. This is a requirement derived from the Forest Act and the Law on Nature Conservation, and hence obligation for all forest owners, especially for SFE with its special commitment to public welfare. This is demonstrated through the fact that SFE is entrusted with the management of the Hessian National Park.

Corporate and private forest owners have free choice with regard to the management of their properties. At present 95% (324,000ha) of the corporate forests and about 50% (106,000 ha) of private forests are managed by the SFE upon request, which means that SFE is in charge of 87 % of the forested area of Hesse, and according to a recent opinion poll, 93 % of the customers are satisfied with the services[4]. [6] (Gerst2011).

10. Summary

The new structure of Hessian State Forest Administration showing a separation of authoritative and operational functions has gone into service in 2001. In spite of some scepticism at the beginning the process lead to promising results, which offer good chances to meet future new challenges to forest ecosystems like climate change, scarcity of raw materials or species loss.

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SUSTAINABLE FOREST MANAGEMENT IN MOLDOVA AND GERMANY. COMMON ASPECTS AND DIFFERENCES

SEMENIUC, ANNA[68]

Abstract

In 1992 in Rio de Janeiro by 145 countries was signed the Convention of biological diversity which for most of them became the first step to sustainable forest management. By the way some of the countries especially the developing ones were not able to develop a really good strategy of forest management because of insufficiency of financial resources and scientific researches.

The strategy of sustainable development of the national forest sector of Moldova was prepared in 1996 but established in 2001. The German national forest programme was launched in 1999. German nature conservation policy has been also influenced by some international conventions of nature such as Convention of biological Diversity, International Union for Conservation of Nature and some other laws and agreements.

In present the forest cover of Germany is close to 11 million hectares (31% of territory) and its area is still increasing. In Moldova this territory is much smaller, accounting 325400 ha and the Republic of Moldova still belongs to the group of countries with heavily affected forests.

Nowadays there are 3 forest programmes running in Germany, but in Moldova is being elaborated a detailed programme of forest biodiversity.

Taking in account the above mentioned we can say that it was done a lot and still is being done for implementing of the decisions of Convention 1992, but a lot of researches are limited because of insufficiency of financial resources. Germany takes place in lots of international programs more over all types of forest management ensure the quantitative sustainability. But despite this Germany doesn't have native forests and enough scientific knowledge in many fields. But still forest areas are increasing, but laws and strategies are being elaborated.

Keywords: sustainable forest management, National Forest Programme, biological diversity, forest conservation, Convention of Rio de Janeiro 1992.

Body of paper

Sustainable forest management in Germany and Moldova. Common aspects and differences.

At present the forests cover of Germany is 31%. In general this is close to 11 million hectares. In Moldova this index is only 9, 6% (325400 ha). Based on this data we can say that Germany has the middle indexes of forest area in Europe. However the forest area of Germany is far from uniform, as well as the forest area of Moldova. The percent of forest cover in Germany varies in dependence of federal lands from 42% in Hessen and railandfalls up to 10%in the north (Schlezwig-Holstein). The absolute leader in this sense is Bavaria with 2, 56 mln. ha. If we speak

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about Moldova, here the percent of forest area is reduced in moving to the south, reaches its top in center and the average size in the north.

According to the information of monitoring both of countries refer to countries with stark damaged forests. It becomes one of the main problems in the process of conservation of this.

Both of countries are rich in biological diversity and worth protection, but their sustainable development is not possible with so limited forest area. This problem could be solved in the presence of sustainable forest sector.

The first step to achieving of sustainable forest management refers to the Convention of the biological diversity that was established in 1992 in Rio de Janeiro. The main goal was the sustainable use of components and biological diversity. This convention was signed by 145 countries. The signing of convention brought to elaborating of a range of laws and national strategies which refer to sustainable development of forests and biological diversity. Some of the main biodiversity-related conventions and country programs Moldova is involved are: national Strategic Action Program on Environment Protection for the period of 1995-2010-2020; National Environment Action Plan (NEAP); Environmental Performance Review of the Republic (1999); Biodiversity Conservation Strategy and Action Plan (2001); Strategy on Sustainable Development of the forest sector in the Republic of Moldova; Biodiversity Conservation Strategy and Action Plan (2001); Concept of the Environmental Policy of RM (2002). Republic of Moldova is also the member of the program of International Cooperation for the Assessment and Monitoring of the Effects of Pollution on Forest (ICP-Forest). In Moldova there are some organizations which are responsible for the application of the convention 1992. They are: Ministry of Environment and Territorial organization, Academy of Science, Ministry of Education, Ministry of Agriculture and Food Industry, Ministry of Health, State Forest Association “Moldsilva”.

Forest land allocation program and creation of new forest policy orientation “Regreening program” in Germany were started in 1993. In 2000 appears the “Concept for the Conservation and Sustainable Use of Forest Genetic Resourses in the Federal Republic of Germany”. In 2001 was developed National Forest Sector Strategy FEDS 2001-2010. In 2004 new Forest Law allows community-based forest management. German nature conservation policy has been also influenced by some international conventions of nature (IUCN) such as Convention on Biological Diversity (CBD), International Union for Conservation of Nature (IUCN) and some other laws and agreements. But in general the German National Program was launched in 1999.

The Strategy on Sustainable Development of national forest sector of Moldova was prepared in 1996. Unfortunately large programs on forest biodiversity conservation and sustainable use of forest resources have not been elaborated and it remains to be a range of problems in the process of forest conservation. In fact in Moldova there is no system of monitoring of protected species; there is no program about the protection of concrete species, biogenesis and ecosystem. A lot of monitoring works are made in little part of forests and by the small organizations. Nowadays forest monitoring is made here in 2 basic strategic directions. These are restoration of the vital potential of existing forests and extension of the areas with forest cover.

The first nature conservation area in Germany had already been established in 1936. Nowadays around 0, 9% of German forest areas are under absolute protection and according to national plans this area will increase up to 5%. In about 25% of forest area of Germany the priorities are given to biological functions which take precedence over forest operations and 57% of forests in Germany had been designated as protected areas.

If we speak about Moldova we can say that all the forest here are protective ones being included into the first functional group. In general the developing of the system of protected areas in Moldova passed three stages:

1958-1959- were made the first decisions according to the creation of reserves

1969-1975-creation of a fund of natural protected areas and the first national park "Codrii".

1976-present –the permanent development of a national fund of protected areas.

But although were made some measures for increasing of forest area the common protected area don't exceed 2% of the territory (67000ha)of Moldova than in Germany this index is 13%. That is why we can conclude that all done is still not enough for maintaining of biological diversity and Republic of Moldova still remains to be a country with stark affected forests.

If we speak about the concrete problems that stay in our way to sustainable forest management we'll find out that there is a rather long range of those: conservation of biological diversity, rational use of forest resources, increasing of the forest area, protection of forest recourses, regulation of the legal framework, scientific support and of course education and skill development. Moldova doesn't have enough financial and institutional resources to implement the decisions of Convention 1992. That is why a lot of research programs are limited or developed on small territories.

In the final analyses can we already say that the practice of achieving of sustainable management has been put into practice or remain to be only words? If we speak about Germany we can say that there was done a lot according to this aspect and Germany takes place in lot of international programs, moreover all types of forest management ensure the quantitative sustainability. At present there 3 Forest Programs running in Germany: in Bavaria, in Brandenburg and in Baden – Wurtemberg. But even in Germany with its developed system of forest protection and management remain to be some important problems. In fact Germany does not have any native forests as reference areas for the natural biological diversity of forests. The research organizations are working on large-scale research projects but the current state of knowledge is yet not sufficient in many fields.

In Moldova is being elaborated a detailed program of forest biodiversity at present day but still we don't have enough financial resources to develop large programs and scientific resources in this area. And all we know is that forest sector of Republic is a great problem and this problem will increase if we don't find concret possibilities to solve them.

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LEGAL PROTECTION OF FORESTS IN BURKINA FASO: CHALLENGES AND PROSPECTS

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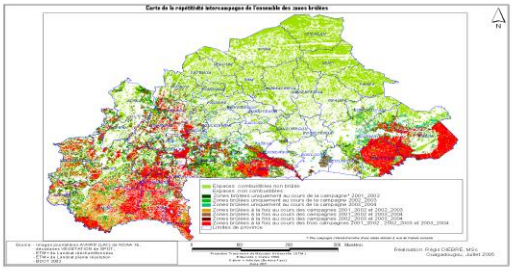

GONTRAN YANBÈFAR SOME *

Introduction

Burkina Faso is a country in West Africa with an area of 274,200 km². As a Sahelian country, the forest (open woodland, gallery forest, shrub savannah, tree savannah and steppe) covers 13,305,238 hectares that is 48.75% of the national territory. This Forest Heritage underwent an annual average decrease of 110,500 ha, that is 4.04% average decrease per year from 1992 to 2002 (Action Plan 2011-2015). So, it is a rather fragile forest ecosystem which is already affected by desertification and the negative effects of Climate Change recorded in the year 1973.

This is the reason why the various forest regulations first sought to reverse the National Forest Heritage degradation trends. Indeed, Legal protection of forests in Burkina Faso dated back to colonial times, with the adoption of the Decree of 4 July 1935 establishing the Forestry Regime in the French West Africa. Following the 1935 Decree, many forests have been classified. In fact, most of the Burkina Faso forest heritage consists of these forests because seventy two (72) classified forests out of seventy seven (77) in Burkina Faso dated back to the colonial era. The most important ones are the classified Forest of Kou, the Park of Arly and the Park W (Ministry of the Environment and Quality of Life, Status of Forests in Burkina Faso and Rehabilitation Plan, October 2007: 2.3 .1. Appendix1).

After independence, the State main efforts were to manage the various resources from these forests, through the conservation of classified areas and the struggle to combat desertification contrary to industrialized countries that focused more on pollution control technology. But, as from the 1990s, being aware that environmental protection goes beyond mere conservation of natural resources, will lead the legislator to adopt an Environmental Code in 1994. However, the staff in charge of forest law enforcement does not seem to understand the new legal instrument which includes sanitation and pollution issues. It was a question to come out with a regime specific to forests. Thus in 1997, Act N° 005-97/ADP of 30 January 1997 on Environment Code and Act N° 006-97/ADP of 31 January 1997 on Forest Code were adopted.

Both instruments have been enforced for almost a decade before being reviewed in order to consider evolution in knowledge, mainly on climate change issues, but also the establishment of a number of principles, rights, prerogatives and obligations.

The reviewing process led to the adoption of Act N° 003-2011/AN of 5 April 2011 on Forest Code in Burkina Faso. With this new Code, Burkina Faso is entitled with a legal instrument more suitable for its realities.

But does-it mean that there are no longer legal challenges related to the protection of forests? It will be pretentious to affirm that all challenges were then met, because many questions with partly legal solutions still remain.

Among these, there are the issue of registration of State forests, the issue of registration of wetlands on the RAMSAR and UNESCO lists. There is also the need to update some classification orders the original documents of which cannot be found and finally the issue of shared or trans-border resources. Besides, there is the regulation of traffic, import and export of forest products which is a necessity.

Finally, another challenge is the transfer of powers to local authorities and the effective involvement of grassroots communities in the environmental protection using specific texts. All these issues could not be definitively solved in the new Forest Code. However, the devastating consequences of globalization give no chance to protected areas against the profit bait. In fact, some economic actors, taking advantage of the weaknesses of the legal system and the lack of control at some levels, do not hesitate to systematically destroy or plunder the resources.

Thus, these are so many situations giving way to challenges which need to be met urgently. To meet these challenges conveniently, it is necessary for Burkina Faso to draw on other countries experiences on this matter. How sustainable legal reforms are undertaken in other countries, what are the options put forward? Do we need a national approach for each State or do we need a regional approach? These are some of the many questions raised by the legal challenges of Burkina Faso as far as forestry is concerned.

Such a situation also justifies our participation in the Symposium in a view of legal cooperation. Our contribution aims to generate some thoughts by presenting two situations describing our

hopes and our concerns in order to illustrate the current challenges of our forests (I) and bring out some perspectives or actions by various actors (II).

I. Current legal challenges related to forests

Legal challenges concerning forests arise in terms of need to reconcile regulation (which regulates human behavior with a view to preventing bad practices) with the policy concession given the rule of customary law and the socio economic pressures which are sources of many threats on forests. It is however necessary to distinguish the common challenges to all forest areas and challenges specific to classified forests.

A. Challenges concerning all forests: the case of unclassified areas.

These challenges can be seen at several levels.

- In the fight against bad practices, a better ownership of texts and effective involvement of local communities in sustainable forest management are essential. To meet the challenges at this level, one must consider several factors of pressure on natural resources. Because, to meet the needs of populations in both rural and urban areas, forests are faced with many factors of deforestation and biodiversity loss. These factors are extensive and transhumant ranching, bush fires (map), excessive fuel wood harvesting, the main energy source of Burkina Faso (84% of the national energy, against 14% and 2% for hydrocarbons and electricity according to the report on the Action plan of the Ministry of Environment). Apart from some 14 forests, all forests in the country suffer the devastating effects of bush fires each year. Similarly, the mining boom in the country is presently the source of many devastating practices. The real challenge now is to find a mechanism to reconcile the forest resources regulation (permits and prohibitions) with the existential needs for wood, wood products and forest products. Another aspect to be considered is the necessity to find a solution to the state of law, to the lack of knowledge of environmental issues and to the poor knowledge of environmental regulations. In general, most enacted laws are not largely disseminated and are not known by the vast majority of the population who is poorly educated and who refers to customary law when it comes to landownership.
- At the level of control of traffic and of export of wood and non-wood forest products, the main challenge is to set up an appropriate tax system by means of regulation for the new Forest Code. According to the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), the tax burden on the energy wood is very low in Burkina Faso, that is 3% (Table 1) and nonexistent for other forest products such as fruits, flowers, seeds, leaves, and roots.

  With such a low tax burden, we can understand why every year hundreds of thousands of tons of forest products are exported to regional and international markets. For example, exports of shea nuts are reported to have a turnover of over XOF 9 billion per year for the Burkina Faso exporter (Table 2). As we can see, no tax is levied on the non timber forest products exploitation or export. Anyhow, the lack of such a tax is a factor that encourages bad practices. The 2011 Forest Code attempts to solve the problem by instituting a tax on trade, traffic and export of all forest products in its Articles 58, 62 and 68. What remains is to stipulate regulations in accordance with Articles 52 and 68 of the Code.
- In terms of skills transfer, the main challenge is to reconcile the transfer with the youth of territorial communities. Experience has shown that communities are witnessing not only technical and financial difficulties to sustainably manage the transferred areas natural

resources, but some communities tend to emphasize only the benefit they can reap from natural resources commercial exploitation to fund their operation and development projects.

In short, it is necessary to resort to means of participative management to achieve forest resources sustainable management from both classified and unclassified areas.

B. Challenges specific to classified forests: the case of the classified forest of Kou

The State classified forest in Burkina Faso has a total area estimated at 3.9 million hectares or about 14% of the national land area. It consists of 77 classified areas, including 65 classified forests and 12 classified areas not constituting forest areas (Ministry of Environment and Quality of Life, Status of Classified Forests in Burkina Faso and Rehabilitation Plan, October 2007, § 3.1 .2). The various forests are subject to specific legal protection as provided for in the Forest Code. But difficulties remain, and create challenges to be met in many respects:

- In terms of tenure security.

  Indeed, forests, even if classified, face tenure insecurity on behalf of local authorities and even local communities because the classification of a forest does not give right to a land title. Whereas the populations consider forests as a heritage from their ancestors.

  The new Forest Code does not suggest solutions for land titles because it provide only for practical protection measures, such as boundary markers and signs, without mandating the registration of forests in Article 25. There is an overlapping of texts which allows abuses such as colonization of classified forests (koulbi, Bontioli), encroachment for agricultural, livestock, mining and fuel wood harvesting purposes (fuel wood and coal), withdrawal of building materials, encroachment due to residential development. The real problem is that for political reasons and for food security sake, the Government does not want to punish these offences.

- In terms of managing shared resources, the challenge at this level is to find a functional linkage between the national, the regional and the international regulation. There is also the challenge of devise a monitoring and concerted management mechanism between countries, drawing on mechanisms already used for the management of the Volta and the Niger River Basins. This can be formalized by an Agreement between the States sharing resources.

The above mentioned challenges are the same for most of the classified. However it is necessary to consider particularly the classified forest of Kou. It was classified by the Order S/ N ° 227 of 22 January 1951. This Order was amended by Order No. 132/FOR of 30 January 1951 on classification of the forest of Kou (Bobo, Upper Volta).

Nowadays the local and national context is not favorable for a sustainable management of such a classified forest, considering its specificity and the irreversible impacts risks in case of environmental damage.

The classified forest of Kou is a unique forest station which covers nowadays an area of 115 ha and is located 7 km from the town of Bobo Dioulasso. It concentrates a greater variety of plant species than the entire national forest heritage. It is a Guinean forest type and tree savannah. Some rare plant species such as *Iroko, Chlorophera sp*, and *Carapa procera* can still be found there.

Besides its botanical wealth it has very important potentials for ecotourism, it also plays a very important role in the protection of Kou sources. The forest acts as a sponge, allowing the land to store more water, while preventing evaporation by its cover, and thus has allowed supplying the city of Bobo Dioulasso with drinking water for over half a century.

But this important reserve in terms of biological diversity is not safe from various threats despite the classification and the provisions taken to ensure its protection: progressive reduction of its area, development of the City of Bobo Dioulasso away from 7 kms from the forest. This is the reason why it is a priority to take sustainable protective measures in a participatory approach.

Thus from the legal point of view, it is necessary to:

- finalise the forest registration process.
- to register the forest of Kou on RAMSAR Convention or the UNESCO World Heritage List. We think that by this way, the forest will be more valued and to some extent mobilize financial and technical resources necessary for its better protection.
- to raise awareness of the Forest Management groups on the legal and environmental issues as well as on their role and responsibility in the implementation of development plans and of a management contract.
- to rebuild or update legal archives of this classified forest by searching the original of its classification Order or by a reclassification of this forest.
- and finally, to prevent and limit conflicts of interest around the forest of Kou.

All these challenges and issues highlight the need for sustainable measures in order to prevent the accelerated desertification in Burkina Faso.

II. PROSPECTS TO BE CONSIDERED

Just like the operation, the sustainable management of the forests calls upon a diversity of actors, with the interests not always coinciding. But if solutions are not found to the challenges listed above, there could be a threat to social peace. The key players must stop looking at themselves and leaving our natural resources irreversibly deteriorate. They must courageously take the necessary steps.

A. Prospects at the State and the communities levels

To meet the challenges identified, the State and communities can consider multilevel actions.

- As for fight against bad practices by the appropriation of the texts, and behavioral change, the legal steps to be considered by the State include:

✓ joint and contractual management of the forests with the local populations by means of supplementary regulations, the specifications and local charter for the environment.
✓ broadcast in national languages information about the Environment and Forest Code.
✓ train and sensitize the populations on good practices and the legal scope of the texts.

- Regarding the control of the exploitation and the export of the forest products, the State must work towards the establishment of a taxation system for a sustainable management. For this, the implementing legislation should involve local communities and the population in controlling the operation, especially in the recovering of the taxes. This will be an opportunity for the local authorities to have financial resources for their development activities. Thus it will adjust at the same time the various claims related to the State owned forests. This new taxation system will have to be a combination of the centralized and decentralized forest taxation.

- Concerning the transfer of competence, it must be partial, controlled, on a case-by-case basis and by giving privilege first to the forest taxation transfer and then the forest spaces management transfer with specifications stipulated in compliance with Articles 35 and 36 of the Forest Code. A prior study of transfer is essential in order to identify the communities with a real action plan as regards to environment on the basis of which the transfer can be carried out.

- In terms of safeguarding the State forest a certain number of legal steps are essential such as the registration of classified forests. We think that the registration will commit the populations and the local authorities because it is an action taken by the local authorities themselves who are closer to the populations than the Government.

- Concerning the shared stock management; the Burkina Faso Government will have to start negotiations with the countries sharing resources with Burkina, for a concerted delimitation of these spaces, an installation of a concerted control mechanism, management and information exchange.

Ultimately, all these actions must be crowned by the development of a strategy of popularization and ownership of the legal texts in order to involve the other actors and thus to register the legal solutions over time.

B. Prospects at the NGO and the local communities levels: Environmental Local Charters

NGOs must play a facilitation role between the State and the population by encouraging the two actors to give privilege to concerted and participatory management.

Thus, NGOs can:

- ✓ put pressure on the Government in order to push it to devise the mechanisms of a joint management with the populations. This cooperative management must be based on each party's commitment to play its role in environmental protection. That is why the idea of a local charter seems interesting, because populations and local authorities (local chiefs, elected officials) will easily identify themselves with the instrument they would have signed, contrary to the Acts and Decrees generally initiated by the Government.
- ✓ NGOS can help the Government in the search for funds to face the low means the Government has to supervise the territory.
- ✓ NGOS can finally organize and accompany the populations in their projects by technically assisting them. There exist today more than 200 groupings of forest Management on the whole of the national territory, even if they are poorly equipped.
- ✓ Finally local communities are responsible of their behavioral change and of the improvement of their practices. Therefore, the creation of private forests will contribute to make them less dependent on the natural resources of the State, but also to organize them and to make them more involved in the forest spaces monitoring.

CONCLUSION

Without being exhaustive, the analysis of the legal challenges to be addressed shows that they are many and various. It clearly appears that it is necessary to protect and to manage all sustainable forest spaces because the threats are the same for the classified

forests as for the non classified forests. Therefore supplementary legal steps must be considered:

- ✓ develop new supplementary legal instruments to devise a new forest taxation system.
- ✓ facilitate competence transfer to the communities.
- ✓ encourage the involvement of the local populations in the sustainable management of all forest spaces.
- ✓ carry out a joint management of the trans-border resources with the various countries concerned and implement technical mechanisms of trans-border management;

In other words, each actor must play his own role. We believe that a real strategy for implementing forestry regulations could be a panacea.

Moreover, taking part in the Symposium will inspire me to open up avenues for fruitful discussions. I am better aware of the shortcomings and challenges of the Burkina Faso Legal System in terms of forestry and of some actions to consider, thus it may lead to happy solutions in the field. Gild and already I foresee actions to be taken on the ground of legal cooperation as well as actions from our own capacity. I am convinced that the discussions during the Symposium and the sharing of experiences will help improve and consolidate the strong ideas expressed here.

I would like to conclude by expressing my sincere gratitude and thanks to all those who have worked for my effective participation in this symposium.

APPENDICES

TABLE 1: PRICE PATTERN OF FIREWOOD AND CHARCOAL (XOF AND EURO)

Nature of the tax	Amounts in XOF	Amounts in Euros	Destination
Cutting permit or forest tax	- 300 XOF/cubic metres of wood - 250 XOF/Kg of charcoal		Treasury
Approval	- 4000 F CFA/year/ wholesale carrier - 2000/year/retailer		Communal Budget
Disposal permit	2000 F CFA/year/ wholesale carrier and 2000/year/ retailer		Treasury
Road licence	300 F CFA/trip		Treasury

Drawn and adapted from: MEM; 2000 and Kaboré Cyrille

TABLE 2: EVOLUTION OF THE EXPORT INCOMES OF SHEA NUTSFROM 1994 TO 2003 (IN THOUSANDS OF XOF)

Forest revenues	1994	-	-	-	-	2000	2001	2002	2003
	900					374.900	1.175.900	3.175.900	2.199.300

Source: DG Douane, 2003

N.B: 1Euro = 655.957 XOF

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RESULTS AND PROSPECTS FOR SUSTAINABLE FOREST MANAGEMENT IN RUSSIAN FEDERATION

MARGARITA STRELKOVA[69]

Twenty years have passed since the conference in Rio where the approved concept of sustainable development. On the Conference the policy documents of global and national policies development that support sustainable development as economic development, social development, and environmental protection were approved. It was the beginning of international forest negotiations.

Russian Federation is actively participating in the Ministerial Conferences on the Forest Protection in Europe since 1990. Criteria and indicators used in the guiding principles of sustainable forest management were developed. Currently about 150 countries participate for developing and using criteria and indicators of sustainable forest management.

Russia actively participates in two regional initiatives: the Montreal processes and the Helsinki processes. Currently being adapted these criteria at the regional and local levels to assess the possible of forest management.

The main Intergovernmental process designed to oppose illegal logging of forest in the world - FLEG. Declaration and Action Plan were adopted in 2005 in St. Petersburg on the International Ministerial conference. These documents confirm the intention of countries to develop action sets to prevent illegal logging and illegal timber trade and corruption. The declaration recognizes the responsibility of the supplier and consumer countries of illegal logging and illegal timber trade. Declaration was signed by participants from 44 countries, including Russia.

Government of the Russian Federation approved a Plan to prevent illegal logging and timber trade in the Russian Federation for 2009-2011 within the framework of obligations to ensure the timber legality.

Federal Forestry Agency provides remote monitoring of forests using and forest management. Federal law of National regulation of the roundwood turnover is being developed.

Existing estimates of illegal logging of forest on to various expert estimates about 30%. At the same time, official figures of Federal Forest Agency is illegal logging in Russia - 1-3% of the total harvesting. It is worth to evaluate the terms and approaches used to analyze the volume of illegal logging.

The European Parliament and European Council have approved legislation (Regulation 995/2010) which prohibits the sale of timber logged illegally under the rules of the country of origin. In addition, companies must use a system of 'due diligence' to ascertain that the timber they sell in the EU was harvested legally. The requirements of legislation become operative from 2013. At the same time the EU are major consumers of timber and timber products in the world.

According to the EU regulation EU FLEGT 995/2010, Russian forest companies must ensure that their round wood comes from a legal source. With this regulation being a perfectly necessary requirement, it also increases the cost of wood procurement in Russia.

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Same initiatives were taken in other countries, for example in the United States (Lacey Act).
For Russian Federation which has the world's largest forest resources is important to take measures to confirm the legality of timber. International voluntary forest certification confirms the origin of wood . There are about 50 systems and programs of forest certification.
Currently in Russia there are two systems of voluntary certification - FSC and PEFC, and 30 million hectares are certified. There are good opportunities for further development of forest certification. Currently the draft of new National Forest Policy is under development and discussed.
In industrialized countries many regional and national programs of environmental protection have developed and successfully implemented in recent years. These programs include the implementation of a large set of different measures for environmental protection.
Note that the conservation activities require increased expenses. This also applies to the individual businesses that need by increasing the cost of environment protection and to maintain the level of profitability. Also joining the WTO leads to a tightening of environmental requirements.
Ensuring the timely and full funding of environmental activities is now the main task in achieving sustainable development.

THOUGHTS CONCERNING CURRENT DEVELOPMENTS OF FOREST LEGISLATION AND FOREST POLICY IN TODAY'S SWEDISH FOREST SECTOR

LEIF STRÖMQUIST[70]

Introduction

This paper is an attempt to provide some thoughts concerning the development of forest legislation and forest policy in Sweden during last decades with a particular view on the balance between forestry and nature conservation and the most recent developments. The ideas are to a large extent based on discussions in the country during 2011 and 2012. However, it is important to stress that these discussions have not yet been finalised or resulted into any concrete major changes of the legislation or the forest policy. Reasons for this are that in a democratic country like Sweden, with a long tradition of stakeholder-involving processes and a habit to strive for consensus in decision-making situations, such developments always are time-consuming.

Current situation

Since 1994 Sweden has a Forest Act (developed in 1992 – 1993) in which wood production and nature conservation/biodiversity are given the same priority. However and nevertheless, over the past 15 – 20 years, nature conservation has been given much more priority, which made it impossible to bring questions on forest production into the centre of attention. In this sense we can speak of 15 "lost" years. Today, forest production is again an issue, not only when it comes to use forests as CO_2 -accumulators, but also when it comes to enhance production by active forest management and better use of the forest soil. We enjoy a tail wind for the forest industry in our country, but just not in Sweden. In Sweden and Finland there is today a positive attitude towards sustainable and profitable forestry in the public and in politics. This fact does not exclude that serious discussions appear, e.g. in media (see below), about the forest policy and what forest owners are allowed to do. Profitable forest management has a long tradition in our countries which are both characterized by a large number of family forest owners – in Sweden around 50 % of the forests are in private hands, meaning that many individuals are depending on or today at least are calculating with additional annual incomes from their forests. Of course, such dependence facilitates the understanding of forestry requirements. Another factor of crucial importance is that aside of the 15 % state-owned forests (Sveaskog AB) in Sweden 25 % are owned by forest industry companies.

The forest pre-conditions in our country have resulted into a forest management with general nature consideration over the entire forested area. In addition come the forest areas with particular high conservation values, which partly with support of state funds or even voluntarily shall be taken out of forest management; the size of which is also subject for repeated discussions. The main difficulties are posed by the woodland key habitats, identified by the forest authority, that have a high protection value and should not be managed at all and where the state needs to compensate the forest owners.

There has always been a strong focus on sustainable forestry in Sweden, so that today's demands for sustainability are nothing new. Apart from that, Sweden and neighboring Nordic countries are in the

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fortunate position to offer their inhabitants a high living standard, enabling them to be in the top of almost all global statistics on wealth, life expectancy, etc.

Especially in Sweden and Finland, economic wealth is closely connected to the successful management and utilization of the forests, although the gaining influence of nature conservation groups in our countries have had a strong effect on the forest industry.

Today, an increased biodiversity in the forests is a matter of course. The situation has become more and more competitive in the past years and will certainly not change back in the future, even if representatives of the forest industry are of the opinion that more importance should be attached to the issues of the forestry and wood industry.

Unlike for instance in Germany, the much discussed demand to take large areas or even entire forests, mainly beech, out of production is not yet an issue in Sweden. Maybe we have managed to prove that forests, where active forest management (thinning and final felling) is carried out on a regular basis and the total harvested volumes do not exceed annual increment (with exception by calamities, particularly storms) actually lead to increasing wood stocks – with higher carbon dioxide storage capacity.

Trends

Which are the current trends in Swedish forestry and wood-based industries apart from the growing significance of nature conservation? The main trend comprises all activities and measures connected to the climate change and its consequences, which also leads to a shift in energy policies. But despite the fact that global warming bears risks for our boreal forests (storms, damage, vermin infestation, etc.) it is seen as a resource for new possibilities and products. Suddenly the forestry and wood industry can present itself in a new light with more opportunities and better arguments. It can assume a much better position. This is a chance to promote oneself as solution provider. I have the impression that the forestry and wood industry has seized this opportunity in the best way possible and improved its role in society.

The EU member state Sweden is rich in lakes and rivers, many of which run through forest areas. Therefore, the EU directive 2000/60/EG and its implementation into Swedish forest management poses a particular challenge for the forestry and wood industry and has a great influence on the management of almost all forests. Hence, the directive is part of Sweden's national environmental quality targets and very much at the centre of attention as regards activities and knowledge building measures of all those who work in the forests. I would call the "water question" or the "water footprint" as the most important issue in Swedish forestry at present, even if water shortage so far has not been an issue in our boreal forests.

As most forests in Sweden are certified either according to FSC (mainly state and company owned forests and an increasing amount of private forests) and/or PEFC (mainly family-owned forests), changes in the certification schemes are influencing the forest management without any needs for additional revision of existing legislation or regulations as long as no contradictions appear. Sweden has its own approved FSC- and PEFC-standards, respectively,
One can therefore find long-lasting negotiations between the member organizations prior to each revision of the schemes, but the result will normally not affect the legislation, as the agreed certification levels exceed the legal requirements.

In the Government bill "A forest policy in pace with time" (2007/08:108) it was stated that the entire sector has the responsibility for the environment and that the measures needed to preserve the nature and cultural conservation values are a mutual responsibility for authorities and forestry. The title of the bill indicates that the Government confirmed the forest policy. No major changes of the forest policy were regarded necessary; however, in particular the considerations of nature and culture conservation should be subject for improvement.

Current issues

The current Swedish forest policy was developed through the work of a parliamentary forest policy committee, involving also forest stakeholders and experts, and formalized in a parliamentary decision in 1992, which resulted in the new Forest Act coming into force in 1994. As initially mentioned, there has not yet been any major revision of the Forest Act. Wood production and nature conservation have to be equally balanced. However, due to discovered discrepancies particularly in the interpretation of § 30 of the Forest Act, Consideration to the Interests of Nature and Culture Conservation, the responsible Ministry of Rural Affairs has assigned the Swedish Forest Agency (SFA) to initiate an increased dialogue about nature consideration, to increase the supervision according to § 30 of the Forest Act and to consolidate the quality of the follow-up of nature conservation.

The SFA and the Swedish National Environment Protection Board have together advised the forest sector to initiate a dialogue in order to increase the awareness about the meaning of the so-called sector responsibility. They further advised the sector stakeholders to intensify the work to consolidate the quality of detailed forest planning and cutting instructions for harvesting (thinning and final felling) areas. The dialogue with the forest stakeholders and their organizations has started with the aim to achieve enlarged consensus on the sector responsibility, to develop ways to better describe the targets for nature consideration, and to develop new follow-up systems to be used for continued development- and education- processes. As you clearly can see, the "Swedish model" for forest ownership with great independence and simultaneous responsibility based on a developed platform for knowledge will be continued. It is not envisaged to "tighten" the legal framework.

In spring this year, a series of articles written by an acknowledged journalist in Sweden's largest daily newspaper Dagens Nyheter (DN) were published. The title was "The forest we inherited". The articles raised criticism on several issues, e.g. the lack of different methods for final felling such as non-clear felling, the need for a revised forest policy etc. The limited possibility for the society to have concrete influence on activities in the forests was questioned and resulted into a request for a new forest policy. The articles released an intense debate in media and are most likely contributing to future development of Swedish forest policy.

Sweden is one of the present 46 (plus the EU) signatory countries of "Forest Europe" previously called "The Ministerial Conference on Protection of Forests in Europe (MCPEF)".
At the conference in Oslo Mid-June 2011 it was among others decided to negotiate a *Legally Binding Agreement on Forests in Europe (LBA)*. Sweden has called for safeguards in the EU negotiating mandate (the 27 EU member states will have to express a common opinion).

However, the aim is in line with Swedish priorities. The Swedish Government wants to
promote and strengthen sustainable forest management and to address forests' role in the transition to a green economy. Recognition is needed that a LBA does not fit all European countries. A possible LBA will have to avoid red-tape and administrative burdens, overlaps and to be cost-efficient. One of the core strengths of Forest Europe is the broad participation and involvement of the stakeholder community. The

committee shall base its work on existing Forest Europe resolutions and declarations and relevant international commitments and develop a holistic legally binding framework agreement for forests.

As EU member country Sweden also has to actively follow the review of the *EU Forestry Strategy*. The Swedish Government sees areas for improvement to ensure coherence with other policies and instruments. It is important that it should clear off public interventions, which could distort competition and/or be detrimental to the sector's long-term competitiveness. Sweden is against any expansion of EU financing to the sector.

Each member state is responsible for the development and implementation of their respective forest policies, thus there is no specific legal basis for a common EU forest policy. However, there is the problem with the strong influence on the forest sector through other EU policy areas (e.g. CAP). The basic principles are that joint actions can be appropriate only there EU added values are seen, but only with full respect of subsidiarity and strong international coordination in the Commission.

Concluding remarks

Renewable resources like wood are becoming more and more important. Being a forest owner implies a lot of responsibilities. Forests make great contributions to solving future environmental and climate problems, if they are cultivated in a *responsible and economically efficient* way. A great advantage for Sweden and some of the Nordic countries is the forest ownership structure, the type and the size of the forests. With its stability and long-standing tradition, the forest industry has greatly contributed to the positive development of the region and will continue to do so.

The pronounced so-called "Swedish model" for forest ownership with *great independence and simultaneous responsibility* will, as have been made obvious, continue. An important pre-condition is well-educated forest owners with interest to develop their assets and ambitious to leave improved forest conditions to next generation. Another is the shared responsibility for the forest policy development between the State with its forest authority and the forest sector and its stakeholders.

A further observation is the increasing international – particular European – influence on forest policy issues limiting a single country to act independently. Today's quick distribution of information through modern communication systems and media adds further challenges.

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ENVIRONMENTAL CONCERNS AND SUSTAINABLE DEVELOPMENT IN FORESTRY SECTOR – THE CASE OF SERBIA

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Abstract

In the Constitution of the Republic of Serbia from year 2006 it is predicted that Republic of Serbia regulates and provides for sustainable development.[71]

Existing strategic framework for forestry sector in the Republic of Serbia is organized by the Strategy of forestry development (from year 2006) which defines the significant role of forests in mitigation of climate changes. Simultaneously, the clear political aim of support to afforestation/regeneration of forests and raising of fast growing plantations is defined by this Strategy. The Strategy of forestry development defines implementation of Kyoto Protocol as the potential source of international financing for raising of new forests and widening of existing ones. Sustainable forest management, afforestation, regeneration of forests influence on reduction of total concentration of gases with green house effect, while activities like uncontrollable felling of trees and clearing forests, i. e. forest fires have negative effects.

Systematic afforestation was rather limited in the previous ten years in Serbia. The volume of works conducted in forest assortments production in our country in June 2011 in relation to the average of works conducted in 2010 decreased by 4,4%. According to data of forest assortments production for June 2011 in relation to June 2010, the production was unchanged. The forest assortments production in June 2011 amounted to 160 799 m³ in the Republic of Serbia, while at the same time 182 978 m³ of timber from the forests in state ownership were sold.[72]

Each step toward the sustainable development we find worthy fighting for.

Key words: - forest
- Serbia
- environment.

INTRODUCTION

On April 22nd on Ada Huja we celebrated Earth Day and heard interesting lectures on ecology and environmental protection in the lush green surroundings of Ada Huja.

In Rio de Janeiro at the 21-st of June 2012. started the Summit on sustainable development because of reaching of historical **Pact on the GREEN PLANET**. The long-term concept of sustainable development means the constant economic growth which except economic efficiency, technological progress, more cleaner technologies, innovations of whole society and socially responsible business provides for reduction of poverty, long-term better utilization of resources, advancement of health conditions and quality of life and reduction of pollution on the level that environmental factors can endure, prevention of the new pollutions and preservation of biodiversity.

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[71] See: article 97. of the Constitution of the Republic of Serbia, "Official Gazette of RS", no. 98/2006.

[72] Statistical Office of the Republic of Serbia, Monthly statistical bulletin, Forestry, 06/2011, page 70.

The aim of the National Strategy of sustainable development[73] is to bring into balance three key factors that is three pillars of sustainable development: sustainable development of economics, economy and technology, sustainable development of society on the basis of social balance and protection of environment along with rational management with natural resources. Simultaneously, the aim of the strategy is to connect these three pillars in the totality supported by corresponding institutions.

The fifth part of the National Strategy of sustainable development[74] is dedicated to the issues of environmental protection and preservation of natural resources in the Republic of Serbia, as well as to the impacts of economic development on the environment. In that part the aims, measures and priorities connected with protection of natural resources (air, water, land, biodiversity, forests, mineral resources and renewable energy sources), protection from different factors of risk effects for the environment (climate changes and damage of ozone layer, waste, chemicals, accidents, ionizing and non- ionizing radiation, noise and natural disasters), protection from factors of risk for the environment effect in different economic sectors (industry, mining, energetic, agriculture, forestry, hunting and fishing, transportation and tourism), are given as well as introduction of cleaner production.

It is known that human activities in forestry sector can have significant impact in total concentration of gases with green house effect in the atmosphere. Forests have very significant ecological functions.

We should mention the fact that citizens of Belgrade on the 20-th of May this year have fought against persons who during the night illegally cut down 7 trees of maples[75] in the park "Šumice" with intention to construct hall for sports on the spot where trees were cut down. The Major of Belgrade thanked to the citizens for raising their voice by starting initiative and successfully resisted to the felling of trees.

The biodiversity of our capital Belgrade is specific. The oldest tree in town is 200 years old vital trunk of oak 25 meters high, and 4 metres wide, and represents remnant of former forests in that area. Besides this tree is also one of the oldest and the most beautiful plane trees in Europe located near the Palace of Prince Miloš. This impressive platan is 34 meters high and its lower branches aresupported by 17 metal pillars.

SERBIAN EXPERIENCE

In the Constitution of the Republic of Serbia from year 2006 it is predicted that Republic of Serbia regulates and provides for sustainable development[76], and Council for sutainable development was established by Decision on establishing of Council for sutainable development as expert and advisory body of the Government of Republic of Serbia.

In the Republic of Serbia the competent national body for the Project of clean development mechanisms enforcement in the framework of Kjoto protocol became operational on 21-st of November 2008.

Existing strategic framework for forestry sector in the Republic of Serbia is organized by the Strategy of forestry development (from year 2006) which defines the significant role of

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[73] "Official gazette of RS", no. 57/2008.

[74] Official gazette of RS", no. 57/2008.

[75] Irreparable damage was caused, and these trees which grew for around 50 years were destroyed for 15 minutes.

[76] See: article 97. of the Constitution of the Republic of Serbia, "Official Gazette of RS", no. 98/2006.

forests in mitigation of climate changes. Simultaneously, the clear political aim of support to afforestation/regeneration of forests and raising of fast growing plantations is defined by this Strategy. The Strategy of forestry development defines implementation of Kyoto Protocol as the potential source of international financing for raising of new forests and widening of existing ones.

It is important that "Greenery of Belgrade" in the period of resting of vegetation has performed many activities until the end of January 2012. planted 560 new nursery plants in the rows of trees, mainly plane trees, lindens, maples and European ashes. Anyway the Strategy of afforestation of our capital city Belgrade territory was adopted on 13 June 2011. Afforestation of Belgrade is around 13%, and the aim is to increase it during the next 10 to 15 years, especially in the central city municipalities, where it amounts around 3%. The president of one city Assembly presented the fact that during year 2012. around 800 hectares of new surfaces were predicted for afforestation, in accordance with the Strategy of city afforestation.

Different species of poplars[77] can adjust the best to the prevailing soil and climate conditions in the Republic of Serbia. The most favorable spots for planting poplars are terrains along the water courses. Raising of protective zones has many positive socio-economic effects and effects for the environment.

In the area of Šumadija very significant as climatogenic community are the forests of Hungarian oak and Turkey oak, which should be converted into the high silvicultural form by reconstruction. Afforestation might lead to the reduction of soil erosion, amelioration of organic contents of soil, more balanced temperatures, increase of water quantity in soil, as well improvement of air quality through absorbing of dust particles. The aim of fast growing plantations planting means also the recovery of soil and certainly is useful from environment aspect. Infertile soil is subject to soil erosion, but frequently is also used for inadequate waste disposal.

Since the time of the enterprise "Srbijašume" establishment in 1991. the percentage of forest cover in forest areas increased from 83,11% to 84,59% by the end of 2006. and the increase of percentage of the national territory covered with forests is mainly the consequence of natural regeneration.

The volume of works conducted in forest assortments production in the Republic of Serbia in June 2011 in relation to the average of works conducted in 2010 decreased by 4,4%. According to data of forest assortments production for June 2011 in relation to June 2010, the production was unchanged. The forest assortments production in June 2011 amounted to 160 799 m³ in the Republic of Serbia, while at the same time in the Belgrade Region 10 852 m³, in the Region of Vojvodina 52 971 m³, in the Region of Šumadija and Western Serbia 52 703 m³ and in the Region of South and Eastern Serbia 44 273 m³. In June 2011, in the Republic of Serbia, 182 978 m³ of timber from the forests in state ownership were sold.[78]

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[77] Poplars are fast growing kinds of trees that are characterized by the greatest productivity. In the coastal region of Danube, Sava, Tisa and Tamiš it has been erected over 30 000 hectars of sorts of poplars which accomplish significant production of wooden mass. The wood of poplars is in great demand in the wood industry.

[78] Statistical Office of the Republic of Serbia, Monthly statistical bulletin, Forestry, 06/2011, page 70.

The **National program of environmental protection**[79] cited the National inventory of forests of the Republic of Serbia published in 2009. by the Ministry for Agriculture, Forestry and Water-economy according to which, from total surface of the territory of Serbia 29,1% is covered with forests, and the remaining forest land (where according to the international definition belong underbrushes and shrubberies) include 4,9 % of the territory, what is in total amount represents 34,0% or 36,3 % in relation to the surface of productive land of the Republic of Serbia. In the structure of forests according to the components and kinds of trees the most represented are clean components of deciduous forests (59%), in addition mixed components of deciduous forests (29,3 %), clean components of conifers (8,7%), mixed components of deciduous forests and conifers (2,4%) and mixed components of conifers (0,6%). By the National inventory of forests of the Republic of Serbia there are 49 kinds of trees, where dominate species of deciduous forests (40) in relation to conifers (9). It is estimated that in the Republic of Serbia there are around 1000 communities of plants.

Excessive and uncontrolled exploitation of natural resources that are of limited capacity exert strongest pressure on biodiversity and geo-diversity. Negative influences of different human activities (at first intensive utilization of forests) on forest ecosystems, as well as other sensitive habitats are particularly important. Forest resources management (where belong felling of trees and collection of plants, medicinal herbs and mashrooms) is mainly concentrated on the economic gain, along with neglect of preservation of structure and process of forest habitats.

In comparison to the after war period the surface under forest was increased for around 1 million hectares and in total surface of forests in the Republic of Serbia amounts to 2.252.400 hectares. From that 1.194.000 ha or 53,0%, is owned by state, and 1.058.400 ha or 47,0% is in private property. In comparison to the global aspect, these numbers are close to the situation in the world with 30%, but significantly lower from European that reaches 46%.

From total surface covered with forests, under special purpose, i.e. different regimes of protection are 22%. Under strict regime of protection are 4,5% of forests. Taking the fact that over 90% of these forests are in state's property, into consideration, it means that close 35% of state forests are under protection on the basis of regulation which regulate protection and utilization of forests and environmental protection. Around 48% of all state forests have priority protective function, while remaining forests have priority productive function.

Autonomous province of Vojvodina is the least afforested region in Serbia and in Europe with only 6,4%. From 45 communities in the autonomous province of Vojvodina, in 12 communities less than 1% has been afforested and only in 5 communities the afforestation is 15 %. The optimal forest cover in the autonomous province of Vojvodina should amount to 14,3 %, what requires raising of new forests and protective greenery on the surface of around 160.000 hectares. (Source: EUROSTAT, 2007).

In 2006. Government adopted the Strategy of forestry development of the Republic of Serbia and the document National millenium aims of development in the Republic of Serbia in which one of the tasks is to reduce the number of households using solid fuels on 25% from the total number of households till 2015. (The percentage of households using the solid fuels, in relation to total number of households in 2002. amounted 60%, and in 2007. 54,2%).

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[79] "Official gazette of RS", no. 12/2010.

Because of increased pressures and demands placed in front of forest ecosystems and resources the efforts in preventing of adoption and enforcement of harmful decisions of other sectors (economy, transportation, tourism and others) that may lead to forest destruction should be invested, and that means first of all by utilization of environmental impact assessment mechanisms and improvement of inter-sectoral cooperation in solving of these conflicts.

The main problems in the forestry sector and limiting factors of environmental quality in the Republic of Serbia are:

- insufficient existence of forests in some parts of the Republic of Serbia (Vojvodina);
- illegal felling of trees, transformation of forests and forest land in other purposes;
- the process of global drying of forests;
- inadequate forest management;
- pressure of other sectors on the forest area;
- fires and other natural disasters (water torrents, drought).

By tax stimulus the activities on widening of territory under forests should be incited as well as investment of private capital in forestry and processing of wood, also afforestation of damaged land and establishment of energy plantations should be stimulated by connecting with existing markets of fuels from wooden biomass. In the forestry sector it is necessary to organize Forestry Council. The Government will support and protect the enforcement of forest resources sustainable management that means their rational utilization, increase, advancement and protection along with respect of the principle of multi functionality with maintaining of ecologic balance.

CONCLUSION

Geographic position, diversity of climate and habitat conditions in the Republic of Serbia show considerable wealth of biodiversity in Serbian forests.

Activities of priority refer to: application of the Strategy of forestry development of the Republic of Serbia; reduction of risk of excessive utilization of forests and existing factors that endanger forest ecosystems; education and developing of public conscience on importance of forests for preservation and quality of environment.

Sustainable forest management, afforestation, regeneration of forests influence on reduction of total concentration of gases with green house effect, while activities like uncontrollable felling of trees and clearing forests, i. e. forest fires have negative effects.

We should remind on duties and constant care for the environment we live in. I find the equal access to resources throughout the world necessary, what unfortunately is not the case. Although European standards prescribe about 2 to 3% of GDP for ecology, in Serbia is given considerably less.

Realization of basic determinations of the Strategy of forestry development of the Republic of Serbia requires establishment of the best form of forest management, disregarding property, as well as special measures of economic policy. It is necessary to provide for legal and institutional frameworks for support to the protective functions of forests in such a way that so far practice of forest management will be regulated and limited in order to protect soil from erosion, water resources and infrastructure.

In the process of creation of national, regional and local space planned documents it is necessary to provide for the model of inter-sectoral cooperation that will consider also all forests functions.

Strategic aims of organization and utilization of forests and forest land include:

1) harmonization of national regulation in the area of sustainable forest management with legislature of the European Union;
2) advancement of the state of forests: by turning off spring forests in high, by melioration of damaged forests and off spring forests of bad quality, by supporting of natural regeneration and protection of forests;
3) advancement of forests and protected natural goods sustainable management;
4) increase in surfaces under forest on 29 % of the territory of the Republic of Serbia till year 2015.

Present generation has the right on resources and healthy environment and may not endanger the same such right to future generations.

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THE NEW STRATEGIES OF AFFORESTATION DEVELOPMENT IN SEMI-ARID ZONES OF IRAN

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Abstract
Taking the semi-arid climatic conditions of Iran into account and also regarding the importance as well as the enormous costs of irrigation of planting and development of green spaces in this country, the aim of this research is to find an optimal and viable solution for developing of forestlands in Iran. This research was carried out at 50 kilometers to the south of Tehran known as Kahrizak. This aim was arrived at by the use of a super absorbent material, bearing the trademark Hydrogel Super absorbent. In this study, 4 confrere species (*Pinus eldarica* , *Thuja orientalis*, *Cupressus arizonica* and *Cupressus sempervirens*) were administered with 5 treatments. The results of the research proved that the type of treatment which had been employed had a positive effect on the aliveness of the saplings.
The results of this research project and the new strategies of forest developments for semi-arid zones of Iran, will be discussed in this paper.

Keywords: Afforestation, Semi-arid and Super absorbent

1) Introduction

As most parts of Iran have semi- arid condition, all afforestation activities must be irrigated. In a city like Tehran, with a population of 10 million and an area of 730 km^2, with the adverse conditions resulting from air pollution of it, and having semiarid climate, each year different projects are launched in order to plant millions of saplings whose viability and maintenance require continual irrigation. For instance, during spring and summer they are irrigated nearly 25 times.
Using hygroscopic polymers in the plantation of saplings is one the novel methods which have been adopted in the recent years. These hydrophilic polymers are capable of absorbing a plenty of water (as much as 20 times their weight) and turn it into a gelatinous material and in water shortage (deficit) and during dry spells, the plant is gradually provided with the water stored in the polymer.
Since it is a long time that hygroscopic polymers (Hydrogel) are produced in the world (2, 4,5,6,7,8,9)and Iran as well, extensive research have been carried out on them and some of such research findings are striking.
Woodhouse & Johnson (1991) indicates that the endurance of the super absorbent polymers ranges from 2 years for sandy soil structure to 4 years for clay soil structure (10).

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Allahdadi studied the effect of Superab 100 on the growth and efficiency of the field corns in 2002. The results indicated positive effects of the lager amounts of super absorbent on the properties which were under study, especially the height of the field corns and the dry biomass of these plants (1).

The research conducted by Hatterman, et al (1997-1999) showed that when stockosorb polymer is mixed with soil, the more the percentage of such a polymer increases in the soil, the more the moisture storage of the soil will become. Their research demonstrated that in case the polymer was applied to the soil is 4 weight percent, after passage of 17 days, all 45 seeds which had been planted remained alive; as for the mixture of 0.2%, 23 remained alive and as to the control treatment it was 17 (3).

Grasping the importance of this problem, the Municipality of Tehran in collaboration with Tarbiat Moallem University has launched a joint research project. A test plot was designated for the project in which 8 tree species, in the form of 5 treatments, were planted.

2) Site study location

This research was carried out in the south of Tehran, region known as Kahrizak (Figure 1). The average rain fall per year was 208 mm, the specifications of the soil are as follows: soil texture: sandy loam; soil PH: 7.5; soil nitrogen: 0.02% and potassium 80PPm.

The soil temperature regime of the area is Mesic. The soil moisture regime of the area is dry xeric and its moisture control regime, in over 90 consecutive days of during 7 months commencing from summer and autumn, is dry.

Figure 1. Site study location

3) The Research Method

Four conifers species that are common in the plantings of the city of Tehran, were studied in this research. Trees are as: Pine (*Pinus eldarica*), Thuja (*Thuja orientalis*), Arizona cypress (*Cupressus arizonica*), and Mediterranean cypress tree (*Cupressus sempervirens*). All of these saplings were two years old and had been grown up in a plantation at 50 kilometers of Tehran (the city of karaj). The distance between the saplings is 2 meters and the dimensions of each pit is 35 × 30 × 30 cm. 60 saplings of each species were planted in this plot.

The hygroscopic polymer utilized in this plot has the trade name of Super Absorbent A300.

Five treatments were employed in this research as follows:

- Treatment No. 1: mixture of Hyrogel, and sawdust
- Treatment No. 2: mixture of Hyrogel, and manure
- Treatment No. 3: control treatment which only includes the bed-soil without any additional substance
- Treatment No. 4: Hydrogel treatment, in this treatment Hydrogel is the only substance added to the soil (Figure 4)
- Treatment No. 5: Hydrogel treatment and cobbles, this treatment is similar to treatment No. 4, however, the only dissimilarity is that: after planting, the surface of
- the soil, especially around the stem of the saplings, is covered with cobbles (Figure 5).

The data collected about the measurement factors were integrated during the research period and, using statistics software such as SPSS, were also analyzed.

4) Data Analysis

During this stage of measurement, when the indications of stress and water deficit emerged on the leaves of the saplings. At the end of this dry and warm season the research revealed that 55% of the total saplings became dead and among which percentage pine had the least mortality (45%) and Arizona cypress had the most mortality (73%) (Figure 2).

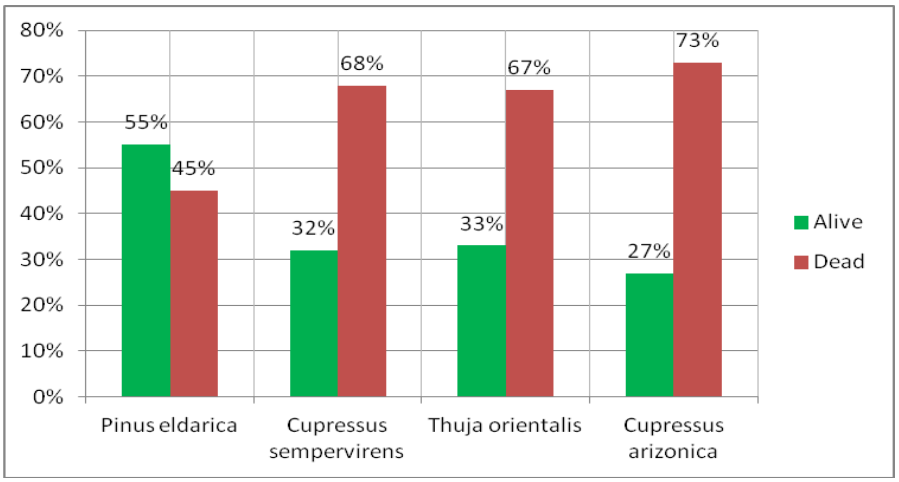

Fig. 2: Percentage of the living and the dead saplings six months after planting based on the tree species

The analysis of the information obtained from data analysis at the second phase of statistics collecting shows that there is a generally significant difference among the treatments (Table 1). Comparison of treatment No. 1 with the other treatments indicates a significant statistical difference with treatment No.3 and no significant with other treatments. Comparison of treatments No. 2, No.4 and No. 5 with the other treatments show that these treatments have statistically difference only with treatment No. 3. There are no statistical difference between other treatments in comparison. Figure 3 shows the percentage of the living and the dead saplings after six months of planting

Table 1: Table of analysis of variance which totally compares all of the treatments after six months of planting

Status	Sum of Square (SS)	Degree of Freedom (df)	Mean Square (MS)	F	P
Between Groups	85.471	4	21.368	14.874	0.000
Within Groups	682.396	475	1.473		
Total	767.867	479			

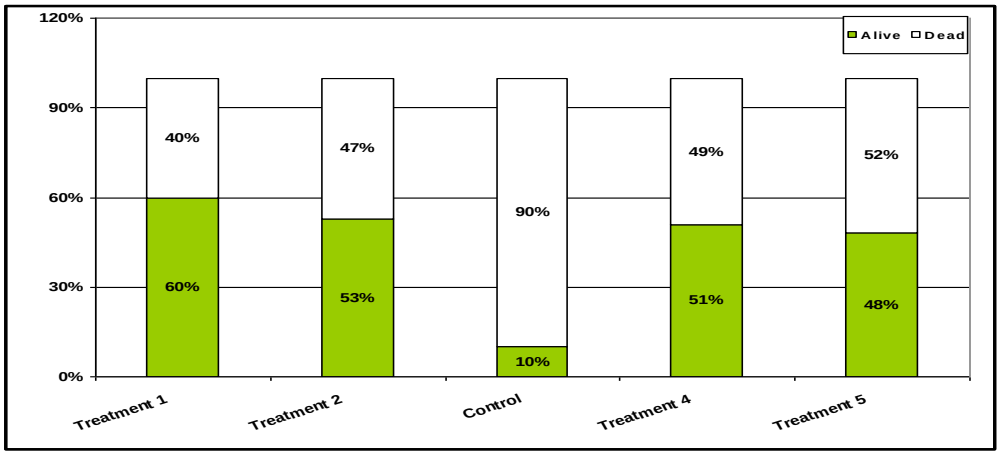

Fig. 3: The percentage of the living and the dead saplings in the said treatments after six months of planting

5) Conclusion

Regardless of the percentage and number of the living and dead saplings, it is particularly noteworthy that the saplings managed to survive the very inhospitable and harsh climatic conditions of 2008 – which has been one of the driest years of Iran for the past 70 years. Although these saplings were irrigated in several stages with a specified volume of water, the endurance and strength of these species in relation to water deficit as well as making use of

auxiliary treatments played a key role in protracting their life span. Treatment No. 1 and treatment No. 2 are the best among the other treatments in this plot. Accordingly, I conclude from this research that utilization of Hyrogel together with other materials such as sawdust and manure has considerable effects on aliveness of the saplings.

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ОСНОВНЫЕ ТЕНДЕНЦИИ РАЗВИТИЯ НОРМАТИВНО-ПРАВОВОЙ БАЗЫ ЛЕСНОГО ХОЗЯЙСТВА УКРАИНЫ

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Abstract: In the Forest Code of Ukraine displays legal, silvicultural, environmental, organizational and economic aspects of forestry in general form, which requires a level of detail with regards to laws. Legal and regulatory framework that operates the timber industry should be improved to meet modern standards of sustainable forest management. Thus one of the main areas is the development of standard documentation of organizational-economic development of forest relations - improving forest management of various forms of ownership, the optimization of organizational and production structure of forestry, the development of the financial and economic mechanism of the forest industry.

Kew words: forestry, law, management, ownership, financing.

Стратегия развития лесного хозяйства базируется на двух взаимосвязанных составляющих: первая – связана с развитием политических и социально-экономических отношений в государстве; вторая – более консервативная и касается исключительно лесоводственно-экологической деятельности, которая базируется на научно-обоснованных рекомендациях по ведению лесного хозяйства. Механизм реализации стратегических направлений развития лесного хозяйства предполагает наличие соответствующих нормативно-правовых документов, в первую очередь, государственного значения. Среди них отметим: Государственная программа «Леса Украины» на 2010-2015 годы (2009 год); Концепция реформирования и развития лесного хозяйства Украины на период до 2015 года (2006 год); Лесной Кодекс Украины (2006 год). Имеется еще ряд документов государственного и отраслевого уровней по стратегии развития отдельных направлений лесохозяйственной деятельности.

В Государственной целевой программе «Леса Украины» содержатся основные приоритеты развития отрасли и конкретные действия по ее выполнению, в ней определены прогнозные показатели лесохозяйственной деятельности и источники финансирования по основным лесопользователям (министерствам и ведомствам) и регионам. В частности, предполагается увеличить на 0,5 млн. га площадь лесов и повысить до 16,1% уровень лесистости страны (в настоящее время уровень лесистости Украины составляет 15,7%). Ориентировочный объем средств, необходимых для выполнения Программы, составляет 22 млрд. гривен (около 3 млрд. долларов). Финансирование Программы осуществляется за счет средств государственного и местных бюджетов, собственных средств предприятий и других источников. В основу Государственной программы положены региональные программы развития лесного хозяйства, которые утверждены соответствующими органами местной власти.

В Концепции реформирования и развития лесного хозяйства Украины обоснована необходимость функционирования лесной отрасли, как социально-экономического

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объекта макроуровня в условиях многоукладной экономики и тезисно определены принципиальные позиции развития лесного хозяйства, которые необходимо решить в среднесрочной перспективе.

Лесной Кодекс Украины законодательно регулирует лесные отношения в современных социально-экономических условиях. В развитие Лесного Кодекса подготовлено более 20 документов государственного и отраслевого уровней (порядков, правил, инструкций) по ведению лесного хозяйства, часть из которых уже утверждена правительством Украины. При этом дальнейшее развитие нормативно-правовой базы лесного хозяйства страны связано с разработкой и совершенствованием, в первую очередь, документов организационно-экономической направленности. Такие нормативные документы определяют механизм реализации лесных экономических отношений по вопросам системы управления лесами и лесным хозяйством, включая права собственности на леса, оптимизации организационно-производственной структуры предприятия лесного хозяйства, развития финансово-экономической системы лесной отрасли.

Вопросы владения, пользования, распоряжения и управления лесами являются центральными в формировании лесной политики каждой страны. Лесной Кодекс Украины определяет наличие трех форм собственности на леса: государственной, коммунальной и частной. Законодательные нормы обеспечивают равенство прав собственности на земли лесного фонда гражданами, юридическими лицами, территориальными общинами и государством. Предусмотрено невмешательство государства в осуществление всеми субъектами хозяйствования своих прав относительно владения, пользования и распоряжения лесами. В то же время отметим относительно короткий период действия лесного законодательства, связанного с наличием трех форм собственности (2006 г.), что обусловливает дальнейшее совершенствование законодательных норм, разработку соответствующих нормативных документов по управлению лесами разных форм собственности.

Преобладающая в Украине государственная форма собственности на леса обусловливает определение эффективного механизма ее функционирования. Лесным Кодексом Украины предусмотрено, что государственное управление, координация мер в области ведения лесного хозяйства, а также государственный контроль за соблюдением нормативно-правовых актов по ведению лесного хозяйства возлагается на центральный орган исполнительной власти по лесному хозяйству и его территориальные органы. Таким центральным органом является Государственное агентство лесных ресурсов Украины (Гослесагентство), а территориальными органами – Республиканский Комитет лесного и охотничьего хозяйства Автономной Республики Крым и 24 региональные структуры (областные управления лесного и охотничьего хозяйства), в соответствии с административно-территориальным делением страны. Одной из проблем лесного хозяйства страны является многоведомственность управления государственными лесами - лесной фонд Украины находится в пользовании более чем 50-ти министерств и ведомств. При таком значительном количестве лесопользователей усложняется реализация единой лесной политики в стране, а соответствующая законодательная норма в Лесном Кодексе становится формально-правовым актом. При этом отметим, что общий уровень ведения лесного хозяйства в лесах отмеченных лесопользователей значительно ниже, чем в лесах основного пользователя – Гослесагентства. После лесов Гослесагентства (68 %) наибольший процент лесов в пользовании Министерства аграрной политики Украины (17 %). Однако нынешнее состояние этих лесов (бывшие колхозные леса) является крайне

неудовлетворительным - средний запас спелых насаждений Минагропрома (129 $м^3$/га) в два раза ниже по сравнению с лесами Гослесагентства (262 $м^3$/га). Поэтому, наиболее целесообразным представляется присоединение лесов всех лесопользователей к лесам Гослесагентства, что требует подготовки ряда соответствующих нормативных документов. В законодательном плане также необходима разработка Порядка использования земель лесохозяйственного назначения, что предусмотрено Земельным Кодексом Украины.

Дальнейшее совершенствование системы государственного управления лесного хозяйства предусматривает децентрализацию управления, неформальное разграничение контрольных и хозяйственных функций в государственных органах управления лесами всех уровней с передачей соответствующих полномочий субъектам ведения хозяйства. Разграничение государственного и хозяйственного управления предусматривает четкое распределение полномочий, прав и ответственности между субъектами управления и хозяйствования строго на законодательной основе. В этой связи необходимо разработать механизм, позволяющий соблюсти баланс интересов субъектов управления и хозяйствования с оптимизацией организационно-производственной структуры лесного хозяйства, исходя из требований рыночной экономики на всех иерархических уровнях. Необходимо продолжить совершенствование структуры управления лесным хозяйством на региональном уровне. Реализация положений Лесного Кодекса по осуществлению полномочий Гослесагентства через соответствующие территориальные органы (областные управления лесного и охотничьего хозяйства) требует разработки нормативного документа, в котором четко определены функции этих региональных управлений с регламентацией их взаимоотношений с государственными лесохозяйственными предприятиями. В основу такого документа должен быть положен принцип разграничения контрольных и хозяйственных функций государственных органов управления лесами. Взаимоотношения между региональными управлениями лесного хозяйства и предприятиями должны строиться на экономико-правовых принципах, на договорной основе, предусматривая все составляющие управленческой и производственно-хозяйственной деятельности.

Леса в пределах населенных пунктов относятся к коммунальной собственности, право на которую реализуется непосредственно территориальными общинами или через созданные ими органы местного самоуправления (к коммунальным лесам в настоящее время относится около 10-11 % лесного фонда). В этой связи, особое внимание следует уделить взаимоотношениям между органами местного самоуправления, территориальными органами управления лесного хозяйства и территориальными общинами. В этой связи необходимо шире привлекать местное население к совместному (общинному) управлению лесами. Отмеченный комплекс взаимоотношений должен регулироваться соответствующими нормативно-правовыми документами, к разработке которых необходимо уже приступить, учитывая, что Закон по разделению земель государственной и коммунальной форм собственности не в полной мере позволяет снять противоречие между интересами территориальных общин и государственных органов управления разного уровня. Одним из таких подзаконных актов мог бы стать нормативный документ по коммунальным лесам, который регламентировал бы экономические и правовые взаимоотношения субъектов лесных отношений соответствующего уровня.

На сегодняшний день можно констатировать, что частная собственность на леса (около 1%) находится только в стадии становления. Большинство людей все еще руководствуются социально-психологическими установками недалекого прошлого.

Поэтому необходимо определенное время для изменения такого сознания. Еще больше времени потребуется для формирования рыночного правосознания и соответствующей культуры поведения. В этой связи, на данном этапе важным представляется присутствие самой нормы лесного законодательства о частной собственности на леса, что является одной из важнейших предпосылок развития рыночных отношений в лесном хозяйстве. Развитие частного лесного хозяйства необходимо связывать с особенностями и традициями ведения хозяйства в разных регионах страны. Учитывая, что в Украине практически потерян опыт ведения частного лесного хозяйства, целесообразно развивать его преимущественно на землях сельскохозяйственного назначения, выведенных из активного использования, а также на определенных участках леса в пределах фермерских (крестьянских) хозяйств. В то же время, механизм функционирования частного сектора лесной отрасли на данное время законодательно неотработан. В Лесном Кодексе отмечено, что субъектами права частной собственности на леса являются граждане и юридические лица Украины, которые могут приобретать в собственность лесные участки общей площадью до 5 гектаров. Для участков деградированных и малопродуктивных угодий площадь земель, которая может предоставляться в частную собственность, Лесным Кодексом не ограничивается. В то же время не прописанным остается сам механизм приобретения права частной собственности на лесные земли; механизм экономического стимулирования государством лесоразведения частными собственниками на деградированных и малопродуктивных землях. В настоящее время подготовлен нормативный документ на уровне Кабинета Министров Украины, стимулирующий частных владельцев к лесоразведению путем: компенсации затрат владельцам земельных участков на мероприятия по лесоразведению; предоставления льготных кредитов и налоговых льгот землевладельцам; внедрения страхования лесных культур.

Таким образом, развития требуют все формы собственности на леса. Отметим, что многообразие форм собственности на леса может обеспечить баланс интересов разных социальных групп, что является важнейшей предпосылкой устойчивого развития лесного хозяйства. В то же время важно определить оптимальное соотношение между разными формами собственности на леса, которое соответствовало бы определенным историческим и социально-экономическим условиям конкретного этапа развития страны.

Требуют совершенствования законодательные нормы относительно временного пользования лесами (в Лесном Кодексе отсутствует термин «аренда лесов», а применяется «временное пользование лесами»; Земельный Кодекс Украины предусматривает аренду земельных участков). При этом временное пользование лесами может быть краткосрочным – до одного года, и долгосрочным – от одного до 50 лет. Наличие соответствующих законодательных норм по специальному пользованию лесными ресурсами в порядке долгосрочного временного пользования лесами (в первую очередь, заготовки древесины при рубках главного пользования) имеет особое значение в районах, труднодоступных для лесопользования, в частности в Карпатском регионе. Это способствовало бы эксплуатации лесных массивов в регионе, где сконцентрировано около 5 млн. м^3 спелых и перестойных насаждений. На сегодняшний день государство не в состоянии осваивать такие лесные массивы из-за отсутствия необходимых средств на строительство дорог, приобретения соответствующей техники и развитие социальной инфраструктуры. Отметим, что существующая в Украине сеть лесных дорог на каждую тыс. га лесных массивов сегодня в 4-5 раз меньше, чем в европейских странах. В этой связи, вклад долгосрочных инвестиций бизнес-структурами под гарантии государства на

развитие производственной и социальной инфраструктуры региона позволит решить не только исключительно лесоводственно-экологические вопросы лесопользования, но и социальные проблемы местного населения.

Для внедрения новых организационных форм ведения хозяйства, характерных для стран с рыночной экономикой, в Украине создано соответствующее правовое поле. Задекларированный европейский выбор Украины открывает для отечественной экономики новые возможности и, в то же время, ставит ее перед серьезными вызовами. Один из них заключается в необходимости обеспечения равных конкурентных условий для предпринимательской деятельности на всей территории страны, что, в свою очередь требует критического пересмотра практики ведения лесного хозяйства, разработки соответствующей нормативно-правовой базы и предоставления государственной помощи отдельным предприятиям или в целом лесной отрасли.

Внедрение современных форм организации производства в лесном хозяйстве, в частности, развитие предпринимательства, требуют углубленного изучения позитивного опыта работы европейских стран, который свидетельствует об эффективности привлечения частных фирм к выполнению всего комплекса лесохозяйственных работ. Переход на современные модели организации лесохозяйственного производства позволит решить одну из наиболее сложных проблем лесного хозяйства страны - это разграничение хозяйственных и управленческих функций на уровне предприятия. Взаимоотношения двух независимых субъектов ведения хозяйства (государственного лесохозяйственного предприятия и частной структуры), основанные на договорных принципах, позволяют в полной мере решать лесоводственные и экономические задания с соблюдением соответствующего баланса интересов обеих сторон. У лесохозяйственного предприятия появляется возможность значительно сократить накладные расходы на производство, а экономию средств направлять непосредственно на выполнение лесохозяйственных работ и мероприятий. Следует отметить, что контрольные функции, как со стороны предприятия, так и государственных органов управления лесного хозяйства выполняются не формально в связи с их дистанционированием в правовом отношении от частных структур. В лесном хозяйстве Украины данная модель организации лесохозяйственного производства оценивается положительно – за последние годы многие предприятия перешли на выполнение работ с привлечением частных структур.

Существующая нормативно-правовая база в Украине и опыт работы предпринимательских структур в лесном хозяйстве свидетельствует о правовой возможности и экономической целесообразности их привлечения к выполнению лесохозяйственных мероприятий. При этом, Гослесагентством подготовлен пакет нормативных документов, которые регламентируют экономико-правовые взаимоотношения государственных лесохозяйственных предприятий и субъектов предпринимательской деятельности по выполнению работ в лесном хозяйстве.

Наиболее сложными являются вопросы финансирования лесного хозяйства в современных условиях. При этом предполагается внедрение такого финансово-экономического механизма, который обеспечит прибыльность лесного хозяйства, позволит соблюсти баланс интересов собственников лесов, субъектов управления и хозяйствования. Отметим, что с каждым годом проблемным является выделение необходимых бюджетных средств для лесной отрасли, при том, что государство является практически монопольным собственником лесов. При таких условиях целесообразным представляется формирование специального лесного бюджета, предназначенного для целевого финансирования

государственных программ ведения лесного хозяйства, охраны и защиты лесов. Основу лесного бюджета должны составлять платежи за пользование лесными ресурсами, поступления от штрафов, имущественных взысканий и сумм возмещений убытков за нарушения лесного законодательства, а также сумм возмещений ущерба и потерь лесного хозяйства от изъятия земель лесного фонда. Однако, Бюджетным Кодексом Украины не предусмотрены специальные внебюджетные фонды. В тоже время, целесообразность создания специального лесного фонда обосновывается, главным образом, экономией средств государственного бюджета по финансированию лесной отрасли. Формирование лесного бюджета также позволило бы эффективно планировать доходы и затраты лесного хозяйства, оказывать финансовую помощь предприятиям тех регионов, которые в силу объективных природных условий не располагают значительными лесосырьевыми ресурсами (предприятия Степной и Лесостепной зон Украины).

В настоящее время научно обоснованной базой совершенствования методов финансирования отрасли являются экономические нормативы. В этой связи, Гослесагентство применяет утвержденную методику по распределению бюджетного финансирования соответствующих государственных программ, исходя из экономически обоснованных нормативов затрат на проведение лесохозяйственных работ по регионам страны и финансового состояния предприятий. Действующий Лесной Кодекс предусматривает платный характер пользования лесными ресурсами и участками лесного фонда. При этом следует отметить разработанную Методику проведения денежной оценки лесов, которая должна быть утверждена на правительственном уровне в ближайшее время. В основу денежной оценки лесов положена величина (норма) среднегодового экономического эффекта в виде рентного или чистого операционного дохода от использования единицы соответствующего объекта оценки: земель лесохозяйственного назначения и лесных ресурсов.

Таким образом, нормативная база по совершенствованию финансовой системы на сегодняшний день предполагает меры государственного регулирования (нормативное финансирование) и внедрение рыночных механизмов ценообразования (платежи за реализацию древесины через аукционы, за использование земель лесного фонда для потребностей рекреации, охотничьего хозяйства, промышленной заготовки грибов, ягод, лекарственного сырья и т.п.). При этом, учитывая исключительно важную природоохранную роль украинских лесов (что законодательно закреплено), необходимо обеспечить государственную финансовую поддержку лесного хозяйства в необходимых объемах. Тем самым государство, как собственник, будет выполнять свои обязательства по сохранению и усилению эколого-защитных функций лесов.

В заключении можно констатировать, что постепенно и последовательно создается нормативно-правовая и институциональная база по устойчивому функционированию лесного сектора экономики, что является основной задачей современной лесной политики Украины. В то же время неурегулированные вопросы дальнейшего развития лесных отношений необходимо решать путем разработки соответствующих подзаконных нормативно-правовых документов. Требуют также гармонизации в сфере лесных, земельных и финансово-экономических отношений соответствующие положения Земельного, Лесного, Бюджетного, Налогового Кодексов и других нормативно-правовых документов, имеющих непосредственное отношение к функционированию лесной отрасли.

MODEL FORESTS IN THE CZECH REPUBLIC

JAROMIR VAŠÍČEK

Abstract

The paper deals with the balance between forestry and nature conservation at public and private property level, focusing on different types of protected areas, esp. on model forests and their management system in the Czech Republic. Another aspect is the discussion on the collision between regulations in forest act and the environment-related legislation.

The paper describes the current situation in nature conservation in the Czech Republic, which is characterized by a relatively high degree of control from the state side.

Owners of forests and agricultural land have decided to react to double-track checks from state administration and nature protection restrictions without any compensation in forests with public interest by voluntary and public commitments. Such commitments declare due diligence of their properties, which the owners are prepared to handle as careful managers, to use forest and agriculture land commercially but not to weaken their economic viability and competitiveness while preserving natural and cultural values of nature and landscape also for future generations.

The Czech Republic has accepted the Principles of the global network of model forests as a basis for establishing three model forests called forest parks with total area of 45 000 ha. Designation of such types of forests led to adoption of the General standard of forest parks in the Czech Republic. This is an innovative approach to nature conservation in conditions of the Czech Republic, which is unfortunately not accepted favourably by the state nature conservation authorities.

Keywords: model forests, nature conservation, forest protection, forest law, environmental legislation

1. Introduction

Pursuant to the law on nature conservation and landscape protection, forests in the Czech Republic represent an important landscape element and at the same time, according to the Forest Act, they are considered national wealth and irreplaceable constituent of environment.

On one hand, forests are resource of economic incomes, such as ecologically friendly and renewable raw material or green jobs for local people; on the other hand, they protect soil from erosion, provide for the discharge balance of watercourses and recreation, enhance landscape aesthetics, and represent the most preserved part of our nature.

In general, forests offer a range of different beneficial effects for the life of inhabitants in our country. Forests cover 33.5% of the country's area.

The paper deals with the balance between forestry and nature conservation at public and private property level. Another aspect is the discussion on the collision between regulations in forest laws and the environment-related legislation.

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2. Material and method

The Environment Protection Act distinguishes a large number of small-scale and large-scale protected areas. Through the official procedure of declaring protected areas, the government ensures nature conservation in different regimes and nature protection zones. The protected areas are divided into small-scale and large-scale protected areas.

2.1 Small-scale localities include:

- Nature monuments, which are natural formations of smaller size, namely geological or geomorphological formations, deposits of precious metals or threatened species in the fragments of ecosystems – which are of regional ecological, scientific or aesthetic significance, even those formed by anthropogenic activities in addition to the effects of nature.
- National nature monuments, which are natural formations of smaller size, namely geological or geomorphological formations, deposits of precious metals, rare or threatened species in the fragments of ecosystems – which are of national or international ecological, scientific or aesthetic significance, even those formed by anthropogenic activities in addition to the effects of nature.
- National preserves, which are small-sized areas of accumulated natural values with the representation of significant ecosystems typical for the relevant geographical area;
- National nature preserves, which are small-sized areas of exceptional natural values where the natural relief of typical geological composition bounds ecosystems that are significant and unique at the national or international level.

2.2 Large-scale localities include:

- Protected Landscape Areas, which are extensive areas with harmonically formed landscapes, characteristic reliefs and a significant share of the natural forest ecosystems and permanent grass stands, with high representation of woody plants and/or with preserved monuments of historic settlements;
- National Parks, which are extensive areas, singular on the national or international scale, whose considerable part is occupied by natural ecosystems or by ecosystems only little affected by anthropogenic activities in which plants, animals and inanimate nature are of exceptional scientific and educational value.

2.3 NATURA 2000

- Avian habitats are areas most appropriate for the protection of birds in terms of the occurrence, condition and abundance of the populations of avian species occurring in the territory of the Czech Republic as stipulated by legal regulations of the European Union.
- Localities of Community interest are natural habitats occurring on the territory of EU member states, threatened by extinguishment within their natural range or having small natural range due to their decline or due to their natural characteristics or representing exceptional examples of typical characteristics of one or multiple biogeographic areas defined by EU legal regulations.

  The table 1 describes situation of small-scale and large-scale protected areas in the Czech Republic.

The above facts suggest that the system is relatively complicated for people managing their forest or agricultural lands, bringing about problems in management notwithstanding additional costs required to enforce such a legal regulation.

Table 1: Situation with small-scale and large-scale protected areas in the Czech Republic

Category	Number	Area (1000 ha)	Share of total CR area (%)	Forest coverage (%)	Natural forests (1000 ha)	Forests left to long-term spontaneous development (1000 ha)
National parks	4	120	1.51	87	14.4	5.9
Protected landscape areas	25	1 087	13.77	54	1.1	0.1
National nature monuments	105	3	0.03	57	0.3	0.1
National nature preserves	112	29	0.36	82	7.1	2.5
Nature monuments	1 198	28	0.34	70	0.5	0.1
Nature preserves	784	37	0.46	44	6	0.8
Total	2 228	1 249	15.83			
NATURA 2000						
Avian habitats	41					
Localities of Community interest	1050					

3. Results

Model forests in the Czech Republic are called forest parks although they include agricultural land, too. The reason for naming them as forest parks is the voluntary character of activity initiated by foresters. By establishing model forests, the owners of forests and agricultural land wish to decide on management methods and landscape utilization by themselves – preferably without control from government side, i.e. with no orders and obligations issued by the government authorities. In reality, such activities from owners? side are only a reaction to a certain over-regulation of nature conservation from the state administration. The forest parks are a public and voluntary obligation committing the owners of forests and agricultural land to manage their properties with due care, use them economically and at the same time not impair their commercial potential while preserving natural and cultural values of nature and landscape for future generations. In the Czech Republic, model forests are declared on the basis of following characteristic features and principles**:**

3.1 Partnership

The managerial grouping operating a model forest is a neutral forum, which appreciates the voluntary and multilateral participation of all stakeholders (public authorities, private sector,

voluntary associations, social organizations, academic and research institutions etc.) interested in the common vision of sustainable management in the given forest area.

3.2 Landscape

Model forest is an extensive geographically delineated natural area encompassing different ecosystems, different forms of managing natural resources and different patterns of ownership. Stakeholders consider the natural resources in the model forest in the social, cultural, economic and ecological context.

3.3 Commitment to sustainability

Stakeholders undertake for conservation and sustainable management of natural resources and forested landscape.

3.4 Stewardship principles

Decision-making in steering the model forest activities dwells on the principles of trust, transparency, cooperation and respect of different interests and values. In their cooperation, the stakeholders use processes aimed at a consensus in model forest visions and objectives.

3.5 Programme of activities

Activities within the strategic plan of the model forest reflect model forest visions, needs of stakeholders, values and challenges related to the area management. Model forest management includes systems of effective planning and monitoring, taking into consideration objectives of the National Forest Programme as well as other relevant programme documents, fostering research and synthesizing knowledge to inform politicians and global initiatives focused on sustainable development.

3.6 Building capacities, sharing knowledge and networking

Model forests contribute to building local and national capacities for the sustainable management of natural resources; their managers would exchange experience with other model forests and organizations and participate in activities and administrative structures focused on the support of national, regional and international model forests.

3.7 General standard of forest parks in the Czech Republic

The general standard of the forest park as acknowledgement and a further support to the long-term management of a certain area dwells on the balance of four pillars crucial for the sustainable management of Czech forests (economic, ecological, social and security)

A. The forest park territory serves as a demonstration (model, sample) object of sustainable forest management and related landscape. Independent third party according to an internationally recognized certification system evaluates sustainable forest management. Radical changes in the management of ecosystems are excluded in the management of forest national parks. Local specific features are developed and fostered and at the same time, the forest parks serve:

a) To develop sustainable tourism, game management and other interests of wide public;

b) To represent demonstration facilities in the sense of the National Forest Programme for the period until the year 2013 (hereinafter NFP II), aiming at exemplary solutions in the sense of Article 5.4 of the National Forest Programme that includes:

- exploitation of the recreational potential of forests,
- strengthening of the poly-functional mission of forests, namely those owned by the state,
- enhancement of the species and spatial structure of forests based on the principle of precautions,
- improved society's awareness and perception of forests and forestry,
- increased contribution of forests to rural area development

c) For scientific research, monitoring, education of professionals (within the school system) and/or lay public (forest pedagogy).
d) To present a comparison of sustainable forest management and near-natural management on selected plots.
e) To support cooperation in international projects focused on sustainable landscape management, especially within the international model forest network www.imfn.net .

B. The forest park area is subjected to a further development of manifold and rational commercial use of the forest based on well-proven forest management procedures aimed to ensure availability of timber as an important renewable raw material and to preserve at the same time the provision of economic income to population. Low-impact methods of forest park management help to preserve natural, landscape and cultural values.

C. Forest park administration:

a) Is based on the voluntary and participative approach of concerned stakeholders.
b) Possible institutionalization does not claim mandatory expenses from the state budget (considered is NGO, public service organization or foundation).
c) Uses external financial resources to support and develop activities that are in line with the forest park standard.

Table 2: Forest parks in the Czech Republic declared as at 30 June 2012, which will endeavour for integration in the system of model forest

Forest Park	Date of declaration	Area
Forest Park Křivokl?tsko	13 May 2010	17 000 ha
Forest Park Křtiny	27 April 2011	10 000 ha
Forest Park Bezděz	11 May 2011	18 000 ha

4. Discussion

Model Forests are based on an approach that combines the social, cultural and economic needs of local communities with the long-term sustainability of large landscapes in which forests represent an important feature. By concept, they are voluntary, broad-based initiatives linking forestry, research, agriculture, mining, recreation, and other values and interests within a given landscape. Model Forests are as much about people who make their living from the forest as they are about trees and forest products—they represent full-valued functioning landscapes with forests, farms, protected areas, rivers and towns. In a Model Forest, various people with different interests and perspectives form a neutral partnership with the common aim to manage their own natural resources in a way that makes the most sense to them given their history, economic and cultural identities and in a way that would not threaten future generations. The partnership defines what the sustainability means in their own context, develops a common goal, governance structure and strategic plan and then works collaboratively to achieve the goals set out in that plan. These goals typically strive to harmonize economic and non-economic priorities

and to focus, for example, on education, research or on the development of local level indicators (LLI) to monitor progress toward sustainability within the Model Forest area. In addition, Model Forest partnerships are very effective in identifying economic opportunities that are not based on timber alone. In that light, a Model Forest is best thought of as a long-term process rather than a project. Model Forests are unique in several aspects: comprehensiveness of their approach, scale of operation, scope of their partnerships, level of policy they aim to affect and significance placed on networking. Geographically, the Model Forest must represent a wide variety of uses and values at play within a particular landscape such as a watershed.

5. Conclusion

Forests are a common heritage which has to be conserved due to its importance in the context of providing multiple benefits for wide public and also for future generation. Nevertheless, there is a high risk of negative crossing in interests of forest owners and in interest of nature conservation. Such crossing should be eliminated from state administration and harmonized by suitable legislation. However, the legal balance in the Czech law is missing. The main reasons consist in existence of double-track control of forest state administration laid down both in the Forest Act and in the law on nature conservation and landscape protection, and in administrative system as such leading to administrative burdens and additional costs.

Declaration of model forests, in the Czech Republic called forest parks, is one of reactions from side of forest and agriculture land owners to unsatisfied and bothering situation within state administration concerning nature protection. Main intention of forest parks was to show that forest protection does not mean only to declare protected areas and after that to terminate commercial use of forests. On the contrary, management system of due diligence based on good practices and use of nature friendly technologies leads to economic viable and competitive forests providing both economic, environmental and social benefits.

After short experiences with forest parks, this innovative approach seems to be an appropriate solution for foresters as an instrument against ossified state administration in forestry.

A general standard of forest parks has been established according to which three forest parks have been declared in the Czech Republic adopting principles of the global network of model forests whose total area amounts to 45 000 ha. This is a relatively novel approach to nature conservation in conditions of the Czech Republic, which is however not accepted favourably by the state nature conservation authorities.

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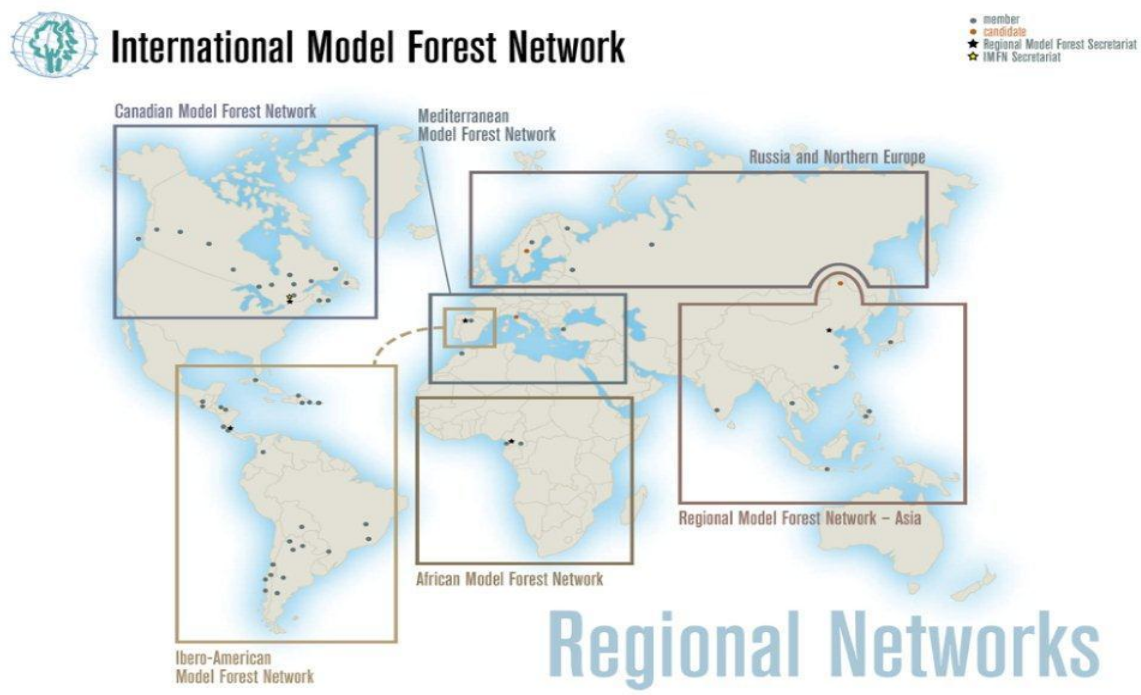
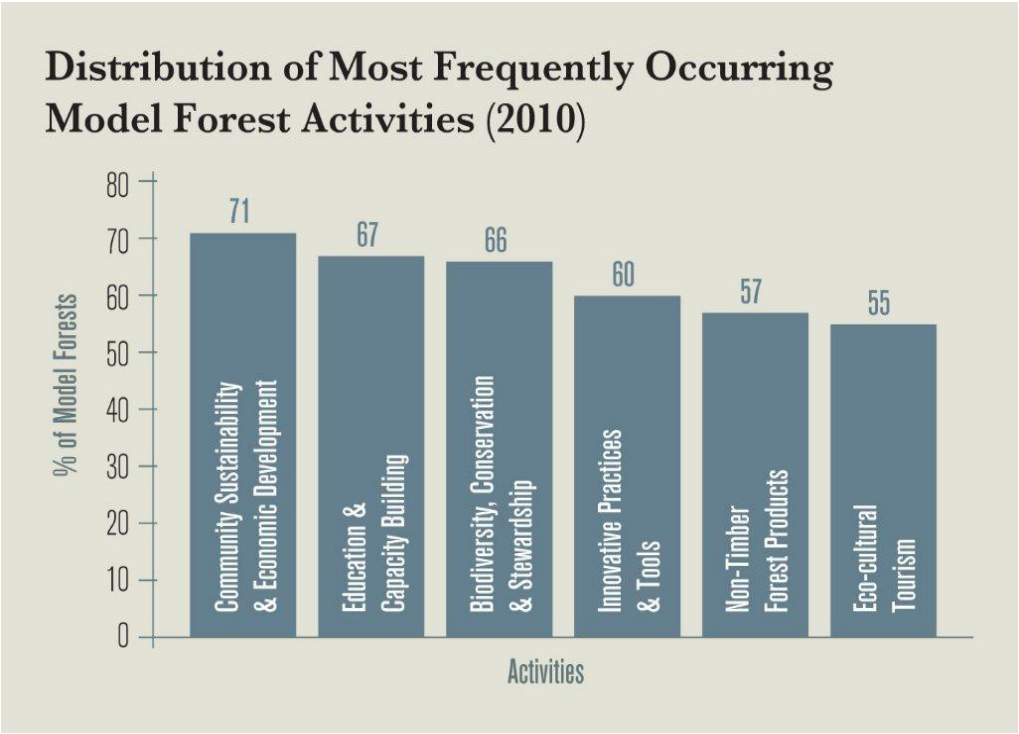
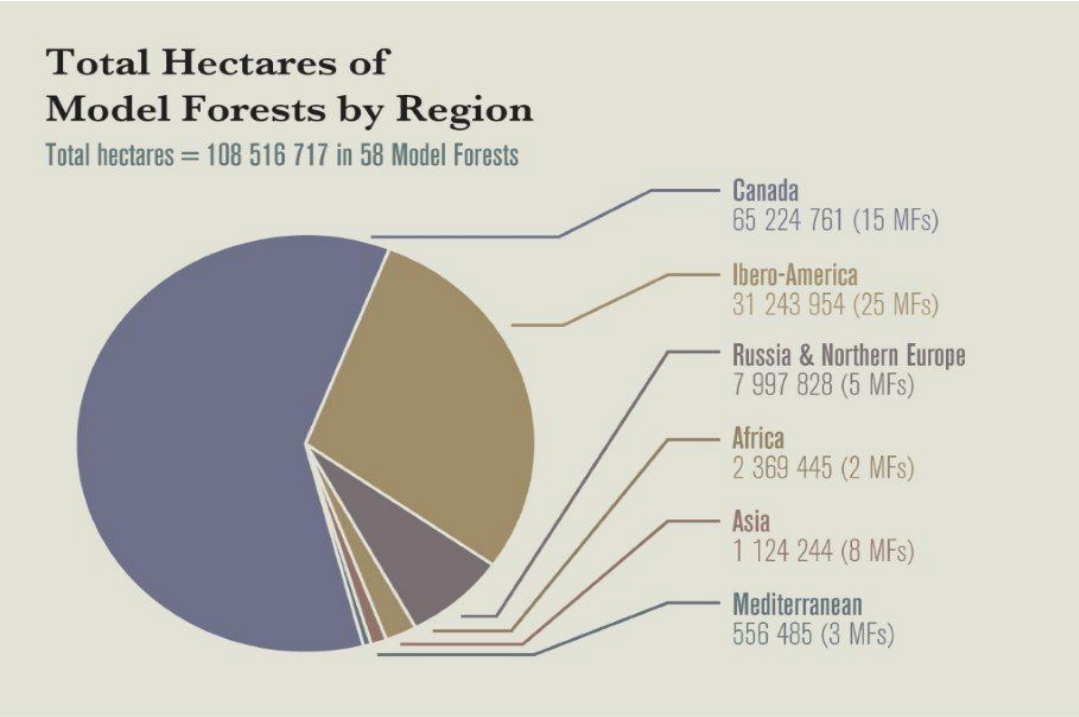
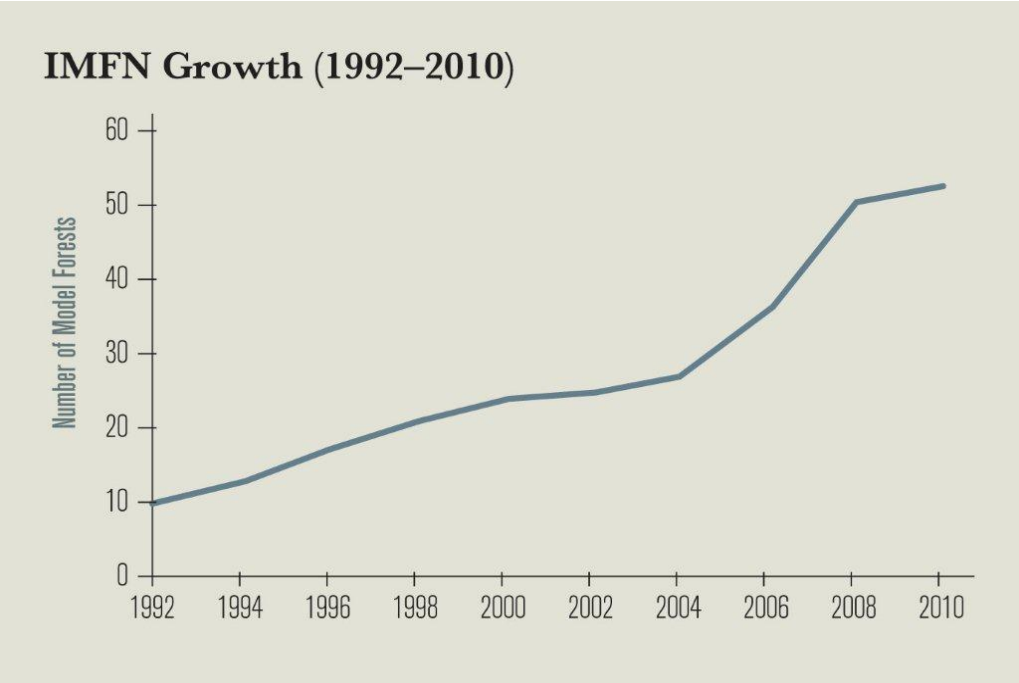
Graphic charts:







Note: Urbión Model Forest is included as part of the Mediterranean Model Forest Network, but it is also a member of the Ibero-American Model Forest Network.



МОДЕЛЬ ГОСУДАРСТВЕННОГО УПРАВЛЕНИЯ ЛЕСНЫМ ХОЗЯЙСТВОМ РЕСПУБЛИКИ УЗБЕКИСТАН

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Abstract

Paper is devoted to the management model of forestry in Uzbekistan. Special attention is paid to the legal framework of the forest management, to management and planning of forestry, the separation of powers between the Cabinet of Ministers, bodies of state power at the local level and sectoral authorities.
The rights and duties in detail of some of the key of the competent authorities, having an impact on the forest sector of the country are described. It is provides information on public participation in forest management. A brief description of the State Forest Fund, the value of forest cadastre and forest inventory is provided.
The paper presents information on bodies responsible for the implementation of the forest legislation, as well as a list of offences which take place in the forestry sector.

Key words: legal aspects, forest policy, institutional aspects, the competent authorities, forest Fund, the execution of the legislation, violations of the legislation

1. Правовые аспекты

Правовые рамки ведения лесного хозяйства Республики Узбекистан основываются и регулируются нижеследующими законодательными и подзаконными актами:

- Конституцией Республики Узбекистан, статья 55: «Земля, её недра, воды, растительный и животный мир и другие природные ресурсы являются общенациональным богатством, подлежат рациональному использованию и охраняются государством».
- Законом Республики Узбекистан «О лесе» - основной законодательный документ, регулирующий все отношения в области ведения, управления и пользования лесами, лесными и нелесными ресурсами на землях государственного лесного фонда, принят 15.04.1999 года Олий Мажлисом Республики Узбекистан.
- Законами и Кодексами Республики Узбекистан, имеющими отношения к ведению и пользованию растительным, животным миром, в том числе лесными и нелесными ресурсами:
- «Земельный кодекс», от 1989 года;
- «Об охране природы» от 9.12.1992 года;
- «Об охране и использовании растительного мира» от 26.12.1997 года;
- «Об охране и использовании животного мира» от 26.12.1997 года;

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- «Об охраняемых природных территориях» от 3.12.2004 года;

- «Об экологической экспертизе» от 25.05.2000 года.

Нормативными правовыми актами, регулирующими лесные отношения в Республике Узбекистан - ***Постановления Кабинета Министров Республики Узбекистан:***

- «Об утверждении некоторых нормативных актов по защите лесов Республики» от 22.11.1999 года № 506;

- «Об утверждении положения о порядке определения категории защитности лесов» от 05.06.2000 года № 215;

- «Об утверждении распределения лесов по категориям защитности в Республике Узбекистан» от 09.04.2001 года № 163;

- «О вопросах организации деятельности Главного управления лесного хозяйства при Министерстве сельского и водного хозяйства Республики Узбекистан» от 20.03.2000 года № 98;

- «Об утверждении положений о Министерстве сельского и водного хозяйства Республики Узбекистан, положения о Главном управлении лесного хозяйства, Департаменте водного хозяйства, Узбекском научно-производственном центре сельского хозяйства, Главной государственной инспекции по контролю выполнения договорных обязательств» от 30.03.2001 года № 160.

- «Об утверждении такс для исчисления размеров взыскания за ущерб, причиненный растительному миру Республики Узбекистан» от 27.07.1995 года № 293;

- «Об усилении контроля за рациональным использованием биологических ресурсов, ввозом и вывозом их за пределы Республики Узбекистан» от 28.10.2004 года № 508;

- «Об организации Республиканского научно-производственного центра декоративного садоводства и лесного хозяйства при Главном управлении лесного хозяйства Министерства сельского и водного хозяйства» от 02.03.2005 года №76;

- «О совершенствовании структуры Главного управления лесного хозяйства при Министерстве сельского и водного хозяйства Республики Узбекистан» от 10.08.2005 года № 191;

- «Об утверждении положений о порядке ведения отдельных государственных кадастров» от 15.11.2005 года № 250;

- «Об утверждении некоторых нормативных актов по защите лесов республики», от 22.11.1999 года № 506 («Правила пожарной безопасности в лесах», «Правила рубок ухода за лесом», «Правила сенокошения и пастьбы скота в лесах Республики Узбекистан»);

- «Об утверждении Положения о лесной охране», от 09.09.2008 года, №203.

Нормативными правовыми актами, связанными с вопросами нарушений и наказаний в области лесных отношений:

- «Кодекс об административной ответственности» - утвержден Законом Республики Узбекистан от 22.09.1994 года №2015-XII. Введен в действие с 01.04.1995 года;

- «Уголовный кодекс» - от 22.09.1994 года имеет своей задачей охрану от преступных посягательств на личность, ее прав и свобод, интересов общества и государства, собственности, природной среды, мира, безопасности человечества, а также предупреждение преступлений, воспитание граждан в духе соблюдения Конституции и законов республики.

Все вышеперечисленные нормативно-правовые акты на сегодняшний день составляют лесное законодательство и регламентируют лесохозяйственные отношения.

На рассмотрении Парламента: находятся законопроекты «Лесной кодекс», разработанный в 2010 году, и «Об экологическом контроле», разработан в 2011 году;

2. Организация и планирование лесного хозяйства, институциональные аспекты

Основополагающие принципы и регламенты лесной политики республики заложены в законе «О лесе». Руководство и управление лесным хозяйством осуществляется согласно постановлению Кабинета Министров (30.03.2001 года № 160). Реализация лесной политики выполняется через пятилетнюю Программу развития лесного хозяйства Республики Узбекистан, утверждаемую Министром сельского и водного хозяйства. В настоящее время осуществляется Программа, рассчитанная на 2011-2015 годы. Официально принятой в международном понимании «лесной политики» в Республике Узбекистан не существует.

При техническом и партнерском содействием ФАО ООН, в рамках реализации проекта «Разработка национальной лесной программы и совершенствование лесного законодательства» для лесного хозяйства Республики Узбекистан была разработана Национальная лесная политика, программа развития лесного хозяйства до 2020 года и план действий по реализации лесной политики. Данный документ согласован и одобрен всеми заинтересованными сторонами, но до сих пор он не утвержден.

Организация управления и планирования лесного хозяйства в Республике Узбекистан возложено на нижеследующие компетентные органы:

А) Кабинет Министров Республики Узбекистан

Ведению Кабинета Министров в области регулирования лесных отношений подлежат:

- осуществление единой государственной политики по охране и рациональному использованию лесов;
- распоряжение государственным лесным фондом;
- установление порядка определения категорий защитности лесов;
- установление порядка и размеров взимания платы за лесопользование;
- организация и осуществление государственного контроля за охраной, защитой, использованием и воспроизводством лесов;
- установление порядка ведения государственного учета лесов и государственного лесного кадастра;
- решение других вопросов, входящих в его компетенцию.

Б) Органы государственной власти (Хокимияты) на местах

Ведению органов государственной власти на местах в области регулирования лесных отношений подлежат:

- предоставление юридическим и физическим лицам по согласованию с государственными органами лесного хозяйства участков государственного лесного фонда, за исключением лесов государственных заповедников и заповедных зон государственных национальных природных парков;
- обеспечение ведения государственного учета лесов и государственного лесного кадастра;
- осуществление государственного контроля за охраной, защитой, использованием и воспроизводством лесов;

- принятие решений об ограничении, приостановлении и прекращении деятельности предприятий, учреждений и организаций в случаях причинения вреда состоянию лесов;
- установление и регулирование совместно с государственными органами лесного хозяйства норм выпаса скота в лесах и других видов пользований недревесными ресурсами;
- организация просвещения граждан в области охраны, защиты, использования и воспроизводства лесов.

В) Отраслевые органы управления

Основным органом по развитию сельского и лесного хозяйства является

Министерство сельского и водного хозяйства. Оно, как отраслевое министерство, государственный орган, проводит единую аграрную политику в республике и несет ответственность за следующую деятельность:
- разработка единой политики для сельского хозяйства, основанной на профессиональных знаниях, эффективном и рациональном использовании земельных, водных и лесных ресурсов;
- координация деятельности в целях дальнейшего реформирования сельского хозяйства и контроль за ходом этой реформы, реструктуризация сельскохозяйственного производства и предоставление практической помощи новым шuркатам и фермерским хозяйствам в их отношениях с закупочными и обслуживающими организациями.

Главное управление лесного хозяйства при Министерстве сельского и водного хозяйства осуществляет функции органа государственного управления лесным хозяйством республики.

Главное управление лесного хозяйства несет ответственность за состояние и дальнейшее развитие лесного хозяйства, научно-технический прогресс в отрасли, организацию рационального использования, воспроизводства, охраны и защиты лесов, ведение охотничьего хозяйства на территории лесного фонда, усиление экологических и других полезных функций лесов и ведение заповедного дела и управление народными парками.

Главное управление лесного хозяйства, а также его органы на местах являются государственными органами, обеспечивающие управление и планирование землепользования в лесном хозяйстве.

Основными задачами и направлениями деятельности Главного управления лесного хозяйства являются:
- контроль за соблюдением лесного законодательства;
- государственное управление в области использования, воспроизводства, охраны и защиты лесов, государственными заповедниками, природными парками и другими охраняемыми природными территориями на территории лесного фонда;
- проведение единой технической политики в лесном хозяйстве, направленной на всестороннее расширение и рациональное использование лесного фонда;
- государственный учет и изучение лесного фонда, фауны и флоры;
- разработка и осуществление мер по лесовосстановлению и защитному лесоразведению в республике;
- осуществление мероприятий по предотвращению опустынивания сельскохозяйственных угодий;

- обеспечение охраны лесов от пожаров, самовольных порубок и других лесонарушений, защиты лесов от вредителей и болезней, совершенствование системы авиационной и наземной охраны лесов;
- организует разработку и реализацию единой стратегии развития декоративного садоводства республики на основе изучения потребности внутреннего и внешнего рынка;
- осуществление мер по заготовке и производству лекарственных и пищевых растений, продукции подсобного сельского хозяйства, садоводства, создание для этих целей специализированных подразделений.

В состав Главного управления лесного хозяйства входят следующие организации:
- Узбекское государственное лесоустроительное и проектно-изыскательское предприятие «Узгипроурмонлойиха»;
- Республиканский научно-производственный центр декоративного садоводства и лесного хозяйства;
- Республиканский учебный производственный центр по повышению квалификации;
- Республиканская лесосеменная станция;
- Управление заповедников, национальных природных парков и охотничьего хозяйства;
- Производственное объединение «Шифобахш»,

Узбекское государственное лесоустроительное и проектно-изыскательское предприятие «Узгипроурмонлойиха» в целях составления систем мероприятий выполняет работы по проведению устройству предприятий лесных хозяйств, направленных на охрану и защиту лесов, обеспечения рационального ведения лесного хозяйства, лесопользования и лесовосстановления, инвентаризации и оценке лесов.

Основная деятельность «Узгипроурмонлойиха» включает в себя:
- определение границ участков государственного лесного фонда и внутрихозяйственную организацию территории государственного лесного фонда, находящейся в пользовании постоянных лесопользователей;
- выполнение топографо-геодезических работ и специальное картографирование лесов;
- инвентаризацию государственного лесного фонда;
- установление возраста спелости леса, определение расчетной лесосеки, размеров рубок, связанных с ведением лесного хозяйства, и размеров иных видов лесопользования;
- определение объема работ по охране, защите, восстановлению лесов и лесоразведению, а также объема других лесохозяйственных работ;
- разработку лесоустроительных проектов и надзор за их осуществлением.

Основными задачами **Республиканского научно-производственного центра декоративного садоводства и лесного хозяйства** определено следующее:
- разработка и реализация единой стратегии развития декоративного садоводства республики на основе изучения потребности внутреннего и внешнего рынка;
- разработка и организация внедрения единой системы сертификации и стандартизации посадочного материала декоративных растений;
- оказание научно-методической помощи различным хозяйствующим субъектам в выращивании декоративных растений;
- разработка методов ведения лесного хозяйства в Узбекистане, улучшение состояния естественно произрастающих лесов и повышение их мелиоративного, водоохранного, водорегулирующего и почвозащитного значения и продуктивности, рациональное ведение лесного хозяйства;

- закрепление и облесение подвижных песков, защита сельскохозяйственных угодий, ирригационных систем, газопроводов и сооружений от песчаных заносов, повышение продуктивности пустынных пастбищ методами лесомелиорации, закладка культур из наиболее ценных в кормовом отношении кустарников, полукустарников и трав;
- лесомелиоративное освоение осушенного дна Аральского моря;
- организация исследований в области биологических и интегрированных методов защиты растений, изыскание малотоксичных и высокоэффективных соединений, безопасных для человека и окружающей среды и получения экологически чистой продукции;
- экономика и организация лесного хозяйства и защитного лесоразведения в горных районах, песчаных пустынях и на орошаемых землях, научная организация труда на предприятиях лесного хозяйства.

Республиканский учебный производственный центр по повышению квалификации переподготавливает и обучает государственных служащих для республиканских и региональных органов управления лесами, руководителей среднего и высшего звена органов государственного управления лесами.

Основными видами деятельности центра являются:
- повышение квалификации, подготовка и переподготовка руководителей и специалистов лесного хозяйства;
- научные исследования в области государственного управления лесами, лесного законодательства, экономики лесного хозяйства, охраны и защиты леса, экологии и природопользования;
- аттестация и оценка деловых, профессиональных качеств специалистов и руководителей;
- консультационное, методическое, научное, информационное и рекламное обеспечение органов государственного управления лесным хозяйством и учебных заведений;
- издание и реализация учебно-методической литературы.

Основными функциями и задачами **Управления заповедников, национальных природных парков и охотничьих хозяйств** являются:
- сохранение и воспроизводство рыбных запасов, диких зверей и птиц, полезных живых организмов и растений, рациональное ведение охотничьего хозяйства, увеличение площади особо охраняемых территорий, включая заповедники, заказники и национальные природные парки, ведение государственного кадастра животного и растительного мира, а также Красной книги Узбекистана.

Постановлением Кабинета Министров Республики Узбекистан № 191 от 10.08.2005 года в подчинении Главного управления лесного хозяйства при Минсельводхозе Республики Узбекистан (в ведении Управлении заповедников, национальных природных парков и охотничьих хозяйств) находится 6 заповедников, 5 лесоохотничьих хозяйств и один национальный природный парк. Кроме того Гиссарский заповедник находится в ведении Госкомитета охраны природы Республики Узбекистан, Китабский геологический - в ведении Госкомгеологии Республики Узбекистан; в подчинении Ташкентского областного хокимията имеются Чаткальский биосферный заповедник и Угам-Чаткальский национальный природный парк.

Основной задачей **Научно-производственного центра “Шифобахш”** является:
- создание промышленных плантаций ценных видов лекарственных растений путём их выращивания в культуре, с целью сохранения их генофонда в природе;

- заготовка лекарственных, технических и пищевых растений, проведение совместно с научно-исследовательскими институтами изучение ареала распространения и наличия ресурсов дикорастущих растений, обеспечение заинтересованных сторон в рекомендациях по оптимальным объемам сбора и их заготовки.

В сферу деятельности **Республиканского производственного центра лесного семеноводства** входят следующие функции:

- проведение мероприятий по определению посевных качеств семян лесных растений.
- совершенствование государственных стандартов и иных нормативных документов на посевные качества и методы анализа семян.
- организация работ по заготовке лесных семян лесхозами республики:
- контроль за качеством заготовок лесных семян в лесных хозяйствах;
- контроль и организация помощи в сборе, сушке, хранения и использовании семенных материалов;
- контроль за соблюдением всей нормативно-технической документации;
- контроль за состоянием постоянных и временных лесосеменных отделений в лесхозах;
- организация проведения мероприятий по определению генетического состава «элитных» семенных пород лесных деревьев.
- ведение базы данных по качеству семфонда, учету ожидаемого урожая.

Координация деятельности лесного хозяйства осуществляет Министерство сельского и водного хозяйства, а также Государственный комитет по охране природы.

Программы и деятельность лесного хозяйства Узбекистана также контролируются Госкомприродой с точки зрения сохранения природы, и работы лесхозов по воспроизводству и состоянию лесов. Принимаемые решения Госкомприроды, в пределах своей компетенции, являются обязательными для исполнения всеми министерствами, государственными комитетами, ведомствами республики, другими юридическими и физическими лицами. В необходимых случаях решения Госкомприроды принимаются совместно или по согласованию с другими министерствами, государственными комитетами и ведомствами.

Госкомземгеодезкадастр является специально уполномоченным органом государственного управления в области регулирования земельных отношений, в том числе лесных, связанных с землепользованием, и осуществляет функции обеспечения реализации единой государственной политики, направленной на совершенствование системы регулирования земельных отношений, рациональное использование и охрану земель. Координирует деятельность органов государственного управления, юридических и физических лиц в области использования земель, обеспечения сохранности, повышения плодородия почв. Осуществляет мониторинг земель в целях наблюдения за состоянием земельного фонда, в том числе лесного, выявления изменений, предупреждения и устранения последствий негативных процессов. Составляет ежегодный Национальный отчет о состоянии земельных (лесных) ресурсов.

Координацию в сфере исполнения законодательных актов осуществляет законодательная палата Олий Мажлиса, через Экологическое движение, а также Министерство юстиции (например, исполнение реализации Закона «О лесе»).

Координация исполнения нормативных правовых актов в области целевого использования бюджетных и внебюджетных финансовых средств, а также налогообложения в лесном хозяйстве осуществляются Министерством финансов, Государственным налоговым комитетом.

Также существует общественная координация исполнения законодательных актов в области рационального использования природных (лесных) ресурсов. Данный мониторинг осуществляют неправительственные некоммерческие организации (ННО), например, ННО «Экосан».

Управление и планирование на местном уровне осуществляется по согласию местных хокимиятов Управлением лесного хозяйства Республики Каракалпакстан, областными центральными лесхозами и лесохозяйственными предприятиями. Под их руководством 65 лесхозов обеспечивают охрану леса от пожаров и защиту от вредителей и болезней, учет, устройство, воспроизводство лесов (производство в питомниках и работу по восстановлению лесных массивов и лесным культурам), регулирование лесопользования и ведения других лесохозяйственных работ.

3. Государственный лесной фонд

Четкого определения леса в законодательных актах не существует. Согласно Закону «О лесе», леса в Республике Узбекистан выполняют преимущественно экологические (водоохранные, защитные, санитарно-гигиенические, оздоровительные, рекреационные), эстетические и иные функции, имеют ограниченное эксплуатационное значение. Леса являются государственной собственностью - общенациональным богатством, подлежат рациональному использованию и охраняются государством. Все леса образуют государственный лесной фонд. Государственный лесной фонд состоит из: лесов государственного значения, находящихся в ведении государственных органов лесного хозяйства; лесов, находящихся в пользовании других ведомств и юридических лиц. Леса и/или лесные территории рассматриваются как земли лесного фонда. Землями лесного фонда признаются земли, покрытые лесом, а также не покрытые лесом, но предоставленные для нужд лесного хозяйства. Границы земель лесного фонда определяются в порядке, установленном законодательством. Земли лесного фонда могут предоставляться во владение, пользование, в том числе аренду.

В целях определения приоритетных направлений ведения лесного хозяйства, подготовки кадров с учетом современных требований, создания институциональных возможностей управления лесным хозяйством в Узбекистане и определения механизмов для подготовки, выполнения, мониторинга и оценки лесной политики при техническом содействии ФАО был составлен проект «Лесного кодекса» взамен закона «О лесе». Данный документ разработан с учетом анализа современного состояния народного хозяйства и международного опыта. Кодекс учитывает потребности сельского и городского населения с учетом того, что лес и лесные ресурсы будут способствовать улучшению благосостояния населения при одновременном сохранении экологических и биологических ценностей лесных экосистем.

4. Право пользования лесами и землей

Лесное законодательство Узбекистана предусматривает только государственную собственность и леса являются общенациональным богатством страны. Общинных и частных лесов в данный момент не существуют. Все леса относятся к категории государственных.

В законодательстве права собственности на землю и ее использование четко определены («О лесе», «О земле») и оно полностью соблюдается.

Собственность на землю и деревья, растущие на этой земле, может быть в исключительных случаях, по решению Правительства республики, разделена (например: государство или частные лица могут владеть землей, но деревья, растущие на ней, могут принадлежать тому, кто законно их посадил).

5. **Участие общественности в управлении лесами**

Заинтересованные стороны (местные общины, неправительственные организации, частные лица и др.) слабо вовлечены в процессы управления лесами, так как это не предусмотрено законодательством страны. Однако, заинтересованные лица могут самостоятельно осуществлять управление территориями лесного фонда, полученными через аренду в долгосрочное пользование.

Законодательство об информационной обеспеченности предусматривает обеспечения свободного доступа к информации и сведениям, в том числе по лесному хозяйству. Отраслевая техническая, картографическая документация и данные (планы управления и информация о лесных территориях) доступны в исключительных случаях, при получении специального разрешения.

6. **Лесоустройство и лесной кадастр**

Существуют юридическое требование к ведению инвентаризации / кадастра лесов и его постоянному обновлению. Согласно Закону «О лесе» лесоустройство - система мероприятий, направленных на охрану, защиту лесов, обеспечение рационального ведения лесного хозяйства и лесопользования.

Государственный лесной кадастр представляет собой свод сведений и документов о природном, хозяйственном и правовом режиме лесов, об их категориях, о качественной характеристике участков государственного лесного фонда и их распределении по лесопользователям.

Согласно Постановлению Кабинета Министров «Об утверждении положений о порядке ведения отдельных государственных кадастров» от 15.11.2005г. № 250, обновление происходит в один раз год.

Существуют технические требования к применению планов управления, основанных на результатах последних инвентаризаций. Существуют юридическое требование к предоставлению лесных разрешений / лицензий / концессий в соответствии с планами управления. Но нет юридических требований по участию заинтересованных сторон в подготовке планов управления.

7. Исполнение лесного законодательства, нарушения и штрафы

Ответственность за обеспечение соблюдения лесного законодательства несут:

- Министерство сельского и водного хозяйства (Главное управление лесного хозяйства);
- Ташкентский областной хокимият (Угам-Чаткальский национальный парк);
- Государственный комитет по охране природы;
- Экологическое движение «Экохаракат» Олий Мажлиса (Верховный Совет).

В Генеральном Прокуратуре и ее региональных управлениях созданы специальные департаменты, которые занимаются проблемами сельского и лесного хозяйства, в том числе землепользования и землевладения. Они проводят мониторинг за деятельностью лесных, ширкатных и фермерских хозяйств и других сельскохозяйственных органов. В их

функцию входят вопросы контроля хода рационального использования земель, контроль выполнение законов субъектами сельского и лесохозяйственного производства.

Кодекс об административной ответственности определяет, какое действие либо бездействие является административным правонарушением, какое административное взыскание, каким органом (должностным лицом) и в каком порядке может быть применено и исполнено в отношении лица, совершившего административное правонарушение.

Ниже приведен список статей Кодекса, связанных с правонарушениями относительно лесного хозяйства:

- нарушение права собственности на природные ресурсы (Ст. 60);
- бесхозяйственное использование земель либо их порча (Ст. 65);
- нарушение правил использования земель лесного фонда (Ст. 77);
- незаконная порубка, повреждение либо уничтожение деревьев, кустарников, других лесных культур и молодняка (Ст. 79);
- нарушение режима особо охраняемых природных территорий (Ст. 82);
- уничтожение полезной для леса фауны (Ст. 83);
- нарушение требований пожарной безопасности в лесах (Ст. 84);
-нарушение правил транспортировки, хранения и применения средств защиты растений и других препаратов (Ст. 89);
- непринятие мер по восстановлению природной среды, воспроизводству природных ресурсов и ликвидации последствий вредного воздействия на природную среду (Ст. 95).

Уголовный Кодекс определяет основания и принципы ответственности, какие общественно опасные деяния являются преступлениями, устанавливает наказания и другие меры правового воздействия, которые могут быть применены к лицам, совершившим общественно опасные деяния.

Ниже приведен список статей Кодекса, связанных с правонарушениями относительно лесного хозяйства:

- повреждение, уничтожение посевов, леса или других насаждений (Ст. 198);
- нарушение правил обращения с вредными химическими веществами (Ст. 201);
- нарушение порядка пользования животным или растительным миром (Ст. 202);
- нарушение режима особо охраняемых природных территорий (Ст. 204).

OVERVIEW OF FORESTRY IN REPUBLIC OF BELARUS

VITALIE GULCA[84]

Abstract: The paper presents and overview of forestry in Republic of Belarus

Keywords: silviculture, forest policy, public, natural resources

1. General information about Belarus

Republic of Belarus is a landlocked country in Eastern Europe (51°10´-56°16´ northern latitude and 23°11´ - 32°47´ eastern longitude) bordered by Russia to the northeast, Ukraine to the south, Poland to the west, and Lithuania and Latvia to the northwest (Atlas: look at Belarus, 2002). It is generally flat terrain with the average altitude between 100 and 200 meters (highest altitude 345m) and covered in forests, lakes, and marshes. The country has a temperate continental climate influenced by Baltic Sea and Atlantic Ocean (USAID, 2007). Average temperatures range from -4ºC in the south-west to -8ºC in the north-east in January, and from +17ºC in the north to +19ºC in the south in July. The annual precipitation varies from 550-650mm on lowlands to 650-750mm on plains and hills. The territory of Belarus lies in the basins of the Black Sea (58%) and Baltic Sea (42%), (Atlas:look at Belarus, 2002). Belarus is divided into 6 regions (Brest, Vitebsk, Gomel, Grodno, Mogilev, Minsk), which are divided into 118 districts. There are 104 cities, 108 towns, 24222 rural settlements in Belarus.

Current total area (see table 1.1) of Republic of Belarus is approximately 20760 thousand ha with most forest land (43.9%) and agricultural land (42.8%); water and bogs cover 6.5% of land area (Loginov, 2011 year). Belarus is comparable by area with countries such as Britain and Romania, in quantity of population – with Belgium, Greece, Hungary, Portugal and Czech Republic. The Earth acts as a component of environment, the material basis of economic activities, means of production in agriculture and forestry, as well as the object of land and property relations (MNREPRB, 2010). "*Two thirds of agricultural land or 5.8 million hectares is arable land, the remaining third natural grasslands. Of the arable land, about 90% is cultivated for crops, 10% left fallow. Most of the cropped area (50-55%) is under grain, primarily barley, followed by wheat and rye. Forage crops (grasses for hay and silage, corn/maize for silage) are the second most important user of land; they occupy some 35%. Potatoes, an important crop in Belarus, are grown on 8-10% of the arable land. Technical crops such as sugar beet and oilseeds, etc. use maximum 5%. Only 1% of agricultural land is private*" (United Nations, 2005, page 114). Arable land covers 27% of the landscape, forests and woodlands 38%, meadows and pastures 16%, and marshes about 4% (USAID, 2007). Today, bushes and shrubs occupy approximately 3 percent of the country; most bush and shrub areas are found either between individual farm plots, on abandoned agricultural land, or in clearings after harvesting of forests (USAID, 2001).

"*Agricultural sector experiences decline in Belarus due to the tendency for urbanization. Therefore there is a need of promotion of the sustainable agriculture and natural recourses management on the territory of Belarus (including territories of biosphere reserves), which will have a positive social and economic effect on livelihoods of rural men and women. To reduce the*

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negative anthropogenic impact on natural environment, Belarus has created specially protected wildlife areas which currently include the Berezinsky Biosphere Reserve, Belovezhskaya Pushcha Biosphere Reserve, Pribuzhskoye Polesye Bioshere Reserve, and four national wildlife parks: Belovezhskaya Pushcha, Braslav Lakes, Pripyat and Naroch National Parks; 99 centrally administered wildlife preserves. The total area of the specially protected wildlife areas is 1,723,800 hectares, or 8.3 % of Belarus' territory" (UNESCO, 2010).

Table 1.1. Distribution of land area (combination of data from Loginov, 2011 year and United Nations, 2005)

Type of land	Area, thousand ha	%	Ownership (2002 year)
Agricultural land	8897.5	42.8	Farm enterprises/large-scale farm 84%; Private farms 1%; Household plots 15%
Including: arable land:	5800.0	27.9	
cultivated crops 90%	5220.0	25.1	
barley, wheat, rye 50%	2610.0	12.6	
Forage crops (grasses for hay and silage, corn/maize for silage) 35%	1827.0	8.8	
Potatoes 10%	522.0	2.5	
Sugar beet and oilseeds 5%	261.0	1.3	
Fallow 10%	580.0	2.8	
natural grassland	3097,5	14.9	
Forest land and land under trees and shrubs	9107.3	43.9	State 100%
Including: forest	8046.0	38.8	State 100%
Bogs	873.0	4.2	State 100%
Water	469.8	2.3	State 100%
Roads and other transport routes	392.1	1.9	State 100%
Buildings	344.0	1.7	
Streets, squares and other public places	147.0	0.7	State 100%
Disturbed and other unused land	529.3	2.5	State 100%
Total per country	20760	100	

"*Bogs are the most threatened ecosystem in Belarus, having been subjected to widespread anthropogenic transformation. Due to large-scale land reclamation, the total area of bogs decreased from 4.1 million hectares (19.8 percent of Belarusian territory) in the late 1950s to 2.3 million hectares (11.1 percent) today. Approximately one-half of the remaining bogs are forested bogs. Another one-third is open bogs. The remaining bogs are classified as shrub-covered bogs or boggy meadows. More than 20,000 rivers exist in Belarus with a total length of 90,000 km. All rivers are part of either the Black Sea or the Baltic Sea watersheds. Major rivers include the Western Bug, Western Dvina, Niemen with its tributary Viliya, and Dnipro with its tributaries Berezina, Sozh, and Pripyat. Belarus has more than 10 thousand lakes with a total surface area of about 2,000 km2. These are concentrated primarily in the northern part of the country. To regulate groundwater and reclaimed land, about 130 water reservoirs have been created in Belarus, covering a total area of 799 km2. In addition, a significant part of the country is covered with a network of land-reclamation canals with a total length of 17,051 km*" (USAID, 2001).

"*Belarus has large forests and extensive freshwater aquatic systems including bogs, mires, wetlands, lakes and rivers that provide habitats for many species. The country lies between eastern and western Europe and provides important migration corridors for European, Mediterranean and Siberian endemic species. However, due to previous glaciations, Belarus*

claims no endemic species of its own. Nonetheless, the country is rich in biodiversity with 467 vertebrate species and more than 30,000 invertebrate species. There are 76 species of mammals and 309 species of birds, of which 227 live permanently in Belarus with the rest migratory. The country contains 61 species of fish living in Baltic or Black Sea watersheds. The vegetation of Belarus consists of about 11,700 species of plants, including 2,100 species of higher plants. This includes 1,638 species of vascular plants mostly herbs (about 1,500 species). There are 107 wild indigenous plants species of wood plants of which 28 species are trees and the others are bushes and shrubs" (USAID, 2007).

"*The soils of Belarus are not as fertile as those in neighboring Ukraine. Much of the soils is acidic and requires liming. The soils need to be carefully managed to maintain their agricultural productivity. 6%, or 0.5 million ha, of Belarusian farmland is classified as eroded and another 38% as erosion-prone. Water erosion dominates, affecting 84% of eroded land, mainly in the hilly northern and central parts of the country. The 16% harmed by wind erosion are mainly in the drier and warmer south. Much of the problem stems from land reclamation campaigns during the 1960s and 1970s when large scale drainage projects as well as plowing the hillsides and sandy pastures brought more land into use. Solutions include afforestation, return to grass cover, changed crop rotations, and a return to wetlands. Inappropriate land use in the past has converted wetlands with a shallow peat layer to barren sand. On these depleted soils, wind erosion is starting to create desert-like conditions. Peat fires caused by natural or human causes are another factor in degradation of wetlands*" (Perelet & Yablonskaya, 2011).

Natural resources. "*About 30 different kinds of raw materials (over 4000 deposits of mineral resources) were explored in Belarus. Of special importance are potassium salts, the deposits of which are claimed to be among the largest in Europe. The reserves of rock salt are practically inexhaustible. The country is rich in non-ore materials: granite, dolomite, dolomite lime, marl and chalk, fusible and refractory clays, loams, sand and gravel materials. It also possesses raw materials for natural oil (swampy iron ore, ochre, glaukonite etc.). Reserves of mineral water are widely spread in Belarus and serve as the basis for building health resorts as well as plants for manufacturing mineral and table water. 63 deposits are exploited with an estimate output at 15,5572 cubic meters per day. The republic has a considerably large amount of building materials. Peat is abundant, but due to the intense exploitation of its reserves its deposits can no longer meet the demands of industry. Sapropels are also of large importance. Oil deposits are of minor importance so its production is limited. The deposits of brown coals and shales are exploited but due to their high ash content and low calorie content they cannot be used in energy production. On the whole the country's own fuel and energy resources, including associated gas and firewood, can only supply about 12% of its demand. There are prospects for ferrous and nonferrous metals on the territory of Belarus. Geological prospecting of amber deposits, titanium, rare-earth metals etc. is carried out. The supplies of mineral resources and raw materials can fully serve the long-term needs for potassium and common salt, lime and cement, refractory and ceramic clays, construction sand, gravel, facing stone. The subsoil of Belarus has not yet been exploited to the full. Rapid changes in the economic situation and the development of modern technologies require the reevaluation of the deposits and reserves of mineral resources to make full use of all the materials to be recovered*" (www.belaruscanadatc.com).

Economy. Belarusian model of socio-economic development is based on two key fundamentals: active participation of the Government in the management of market relations; the Government's participate in these relations as a major market player - about 70% of GDP is

formed by enterprises with state ownership shares. Belarus has been showing steady economic growth for many years. Over the past ten years, the country's GDP has nearly doubled. In 2008 the GDP of Belarus increased by 10 percent in comparison with the year 2007. Annual GDP growth, on average, is about 8 percent in Belarus. More than a half of all products made in Belarus are exported. Belarus is among the first ten European countries as the ratio of foreign trade to GDP. However, it should be noted that the main sources of Belarusian GDP growth are intensive usage of production facilities inherited from the Soviet Union and a high proportion of raw material component in total exports. The growth isn't supporting by new technologies and market innovations or by advancement of products competitiveness. But most of the production facilities, inherited after the USSR collapse, are worn out and needs serious modernization. That is why attracting of foreign direct investments is very important for Belarus today. The main economic sectors in Belarus is mechanical engineering, chemical and petrochemical industries, fuel and energy sector, agriculture, forestry and wood processing, etc. In 2008, the industrial output increased by 12 percent in 2008 in comparison with 2007. The highest growth rate of industrial production were in the fuel industry (11.1%), mechanical engineering and metalworking (10.2%), construction materials (10.2%). Agriculture provides 10% of GDP and forestry's share of GDP is about 4% (United Nations, 2005).

The fuel and energy complex of Belarus consists of extraction, transportation, storage and production of all types of energy. Belarus imports about 85% of energy involved in the country's economy. The reduction of energy intensity is an important task of the Government, as well as reduction of dependence of Russian natural gas, which is the main source of electric and heat energy (about 95%). According to the President's directive №3 25% of all the electric & heat energy should be generated with usage of local sources of energy, secondary energy resources and alternative energy. The energy intensity of GDP decreased by 8.4 percent in 2008. In 2008 it was decided to build the country's own nuclear power capacity of about 2000 MW, thereby reducing the cost of produced electricity by 20%.

The biodiversity of Belarus is threatened primarily across five sectors, three of which are related to productive use of natural resources (agriculture, forestry, and water), and two institutional sectors (public awareness/socio-economic issues and governance) (USAID, 2007).

2. Forestry in Belarus

Belarus lies on the border of the boreal and broad-leaved forest zones (Yermokhin *et al.*, 2007. *"Forestry and the forest industry are essential parts of the republic's economy, having huge potential for development. In 2006, the share of the forest sector in GDP was about 4.2%. There are about 5 000 companies and enterprises of various forms of property (including over 470 large and medium enterprises), which employ more than 146 000 people (about 3.2% of the total number of employed people) in the forest sector*" (Gerasimov & Karjalainen, 2010).

2.1. Forest resources

In the middle of the 18th century, forests covered 74 percent of Belarus and had fallen to approximately 27 percent by the middle of the 20th century (USAID, 2001). In Belarus, forest land covers 8624.9 thousand hectares (2010 year), stocked forest land covers 8046.0 thousand hectares or 38.8% of the country (Loginov, 2011; Rodionov, 2011). About 20% of forests are in wetlands and drained wetlands, which sometime makes extraction of roundwood and forest

regeneration in these areas difficult (Podoliako et al. 2003 quoted by Gerasimov & Karjalainen, 2010). Forests are quite evenly spread over the country's six regions with the average value of the forest cover (ratio between the stocked forest land and the total land) being 38%; the highest forest cover is in the Gomel region (45% of the total territory) and the lowest is in the Grodno and Brest regions (35%) (Forestry 2010, Minleshoz 2010 quoted by Gerasimov & Karjalainen, 2010). Areas with the highest percentage of forest cover (50% or more) are located in the Gomel region (Lelchitsy, Zhitkovichi, October, Mozyr, Yale and Narovlya), the central part of Vitebsk (Rossony, Polotsk, Ushachy, Dokshitsy and Lepel areas), north eastern part of Minsk region (Logoisk, Borisov, Krupsk and Berezinsky areas) and the western regions of Mogilev (Belanichy, Klichev, Osipovichsky and Glusk areas).

The area is growing due to the continuing afforestation of marginal farmland (United Nations, 2005). Belarusian forests have a very uneven age distribution (Fig. 2.1.). This is a result of the Second World War period, during which considerable forest destruction occurred, and of the overexploitation of mature forest for post-war reconstruction. Massive reforestation campaigns during the 1950s and 1960s (Fig. 2.2.) have been successful, resulting in large areas of young forest, now approaching maturity. Approximately half of the forests in Belarus are in the form of plantations — only fragmented tracts of primary forest are still intact (USAID, 2001).

The volume of growing stock for 2010 year was 1 milliard 598 million м3 (see table 2.1) or 168 m³ of wood per capita. The average stock is 199.4 m³ per hectare. The average annual increment is estimated at 3.9 m³/year/ha, and the total increment constitutes around 31.4 million m³/year. The forest sector supplied 15480 thousand m^3 (2010 year) of wood mass to the national economy, including 9279 thousand m^3 of industrial wood. Annually 462400 ha or 5.7% are harvested (including only 22604 ha or 4.9% clear cuts) (Loginov, 2011). In 15 years, the harvestable volume will be twice today's: in "production forests" open for exploitation and making up 49% (Fig. 3.1) of forest land, areas with forest older than 60 years were 15% of the total in 1996; in 2006 the share will be 26% and in 2016 31% (United Nations, 2005). That means we can expect an explosion of ungulates during the 2015-2020 period as a result of many clear cuts.

The 1986 Chernobyl accident resulted in radioactive contamination of 23 percent of the territory of Belarus (USAID, 2001). About 21% of its forest fund area (2 million ha) continues to be affected by radiation fallout from the Chernobyl accident in 1986 (Woodfuels Program, 2009 quoted by Gerasimov & Karjalainen, 2010). Chernobyl is located about 20 km south from the southeastern border of Belarus. Wood harvesting is not permitted in 6% of its forest fund area (0.5 million ha) with a density of contamination over 185 kBq/m. (5 Ci/km.) mostly in the south-eastern enterprises (Gerasimov & Karjalainen, 2010).

According to Forest Code (2000) forest land in Belarus is distributed among two groups: 4849.3 thousand ha (51%) belongs to forests of group I, and 4583.4 thousand hectares (49%) belongs to forests of group II. Forests of group II are exploitable forests and are meant for wood harvesting, while forests of group I are protected forests and conservation and recreation areas where commercial clear cutting is prohibited.

The stocked forest land (Table 2.1), covered by young and middle age stands, prevails over maturing and mature stands (68.6% vs. 31.4% of stocked forest land); the share of mature and over mature stands is only 10.7% of the stocked forest land (Loginov, 2011). The age distribution of forests in Belarus is not good from a sustainable economical development point of view; this is the result of intensive harvesting from after the Second World War until 1960 (Forestry Programme, 2006).

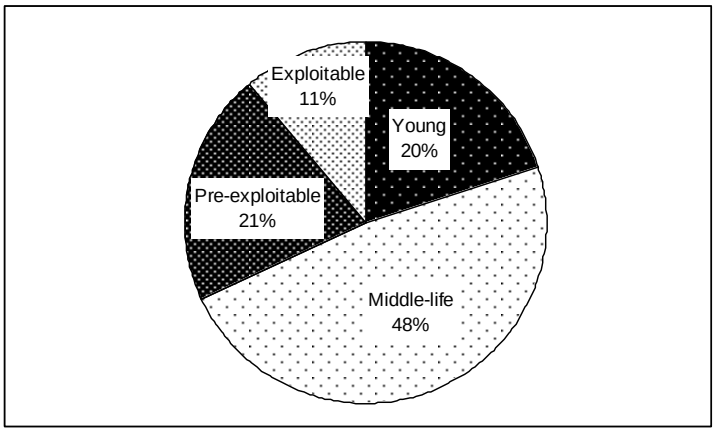

Fig. 2.1. The age distribution of forest stands, (Rodionov, 2011)

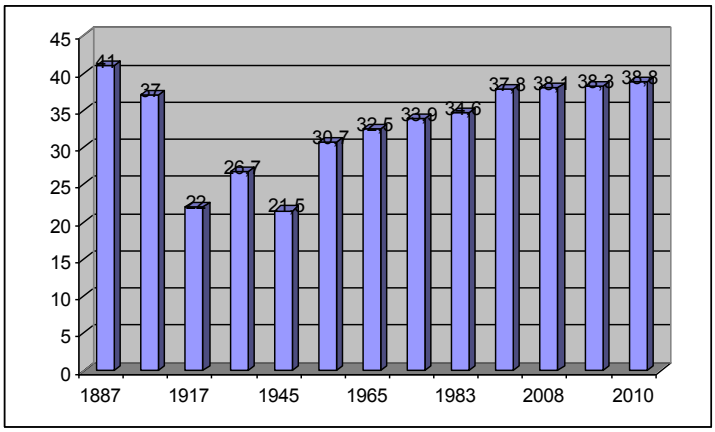

Fig. 2.2. The Dynamic of forests percentage in Republic of Belarus (Rodionov, 2011)

According to Loginov (2011), forests cover consist predominantly of pine species (4034.8 thousand ha), birch species (1852.7 thousand ha), spruce (749.8 thousand ha), black alder (689.4 thousand ha), oak (281.8 ha) and aspen (171 thousand ha). Pine and spruce forests dominate in the northern part of Belarus. Important deciduous trees include oak, maple, ash, hornbeam, birch, aspen, and alder species. Only a small part of Belarusian territory has rich soil, where earlier forests were intensively logged; due to this, less than 1% of Belarusian forests contain rare broadleaved species (maple, lime, elms), (Yermokhin *et al.*, 2007). Important species of mushrooms, herbs, shrubs and grasses not only support natural habitats, but also provide valuable non-timber forest products for local communities (USDA, 2007).

In addition to flora, Belarus forests also provide habitat important fauna, including native mammals, such as bear, bison, lynx, elk, deer, boar, beaver, hare, wolf, fox, otter, and mink species. Bird species dependent on forest habitats include wood-grouse, black cock, hazel hen, grey partridge, and many duck species. The Ministry of Forestry permits hunting for 53 species of animals including 22 mammals and 31 species of birds (USAID, 2007).

Table 2.1. The distribution of forest stands area and volume by species, 01.01.2010 (Loginov, 2011).

Stands	Unite of measurement	Young	Middle – life	Pre-exploitable	Mature and over mature	All	Average age, years
Main forest species, including:	thousand ha	1623,4	3893,2	1663,6	–	8010,0	–
	million м^3	123,8	839,3	421,1	–	1597,5	
Pine	thousand ha	780,2	2006,2	913,3	335,1	4034,8	60
	million м^3	72,6	488,2	240,5	85,8	887,2	
Spruce	thousand ha	67,5	313,5	164,6	46,2	749,8	50
	million м^3	4,3	91,9	52,0	14,6	180,9	
Other coniferous	thousand ha	0,07	0,1	0,03	0,03	0,3	55
	million м^3	0,005	0,04	0,01	0,008	0,06	
Oak	thousand ha	67,5	140,6	30,0	43,7	281,8	70
	million м^3	4,3	56,0	6,6	10,8	47,7	
Ash	thousand ha	6,9	17,6	1,6	1,2	27,2	60
	million м^3	0,6	3,8	0,4	0,3	5,2	
Other deciduous hardwood	thousand ha	4,2	12,8	1,9	1,7	20,6	51
	million м^3	0,3	2,2	0,4	0,4	3,3	
Birch	thousand ha	383,0	992,7	311,8	165,2	1852,7	41
	million м^3	15,8	166,0	73,0	40,4	295,2	
Aspen	thousand ha	39,3	28,7	30,9	72,6	171,4	38
	million м^3	2,3	4,2	6,0	19,4	31,9	
Alder	thousand ha	20,9	54,5	67,8	22,6	165,8	32
	million м^3	1,2	5,9	10,3	4,4	21,9	
Black alder	thousand ha	90,4	319,7	139,8	139,6	689,4	43
	million м^3	4,1	50,1	31,6	36,7	122,4	
Other deciduous softwood	thousand ha	5,4	6,8	2,0	1,9	16,1	32
	million м^3	0,2	0,9	0,2	0,4	21,9	
Other tree species	thousand ha	0,09	0,4	–**	–	0,5	28
	million м^3	0,005	0,03	–	–	0,04	
Bushes	thousand ha	0,2	0,6	0,8	34,0	35,5	10
	million м^3	0,001	0,1	0,01	6,0	0,6	
Altogether	thousand ha	1623,7	3894,3	1664,4	863,7	8046,0	–
		20.2	48.4	20.7	10.7	100	
	million м^3	123,8	839,4	421,1	213,8	1598,2	

*The top line – the area of forest land, and the lower – stock plantings; **No data.

2.2. Silviculture

A forest enterprise belonging to the Ministry of Forestry is responsible for silviculture. Clear felling has traditionally been the main method of final felling and its share is about half of the total felled volume (Minleshoz 2010 quoted by Gerasimov & Karjalainen, 2010). From the end of the Second World War until 1955 and in the beginning of the 1990s the forest regeneration area was larger than the clear felling area. Nowadays, however, almost every clear felled hectare has been regenerated.

The dominant forest regeneration method in Belarus is artificial regeneration (86% of the total forest regeneration area). About 95% of the artificially regenerated area has been planted. In 2008, 34 561 ha were artificially regenerated and 6 452 ha were naturally regenerated (Minprirody 2010, Belstat 2010 quoted by Gerasimov & Karjalainen, 2010). Contrary to the

widespread opinion that artificial forest regeneration has predominated in Belarus, the data obtained by Baginsky (1997) quoted by Gerasimov & Karjalainen (2010) show that natural regeneration prevailed in 1922–1940 (85%) and 1945–1990 (65%) due to economic difficulties. Since the beginning of the 1990s, the area of artificial forest regeneration has increased three times as much as natural regeneration in Belarus. Most of the regenerated areas have been regenerated by two or more tree species (52%). Pine is dominating in artificial regeneration (62%), and the share of spruce is 25%, oak 10%, birch 2%, and larch less than 1% (Gerasimov & Karjalainen, 2010).

The harvest (Table 3.1.) with regard to volume includes final felling (44.7%), thinning (31.6%), and other felling (23.7%), however the proportion of harvest with regard to area is different: final felling (6.6%), thinning (49.8%), and other felling (43.6%), (Rodionov, 2012). The annual volume to be harvested is set on the basis of proposals by the Ministry of Forestry (Minleshoz) according to forest management plans. The current justified allowable harvesting volume in Belarus is about 16.3 million m^3 per year (Forestry Programme 2006, Forestry Programme 2009, Baginsky 2004 quoted by Gerasimov & Karjalainen, 2010), of which 81–96% is utilized. Annual actual harvesting volume is approximately 14 million m3. The total annual harvest has been quite stable over the last years. The allowable cut for final felling is about 8.9 million m3 per year (Minleshoz 2010 quoted by Gerasimov & Karjalainen, 2010).

Relatively low degree of harvesting of forest resources (according to Gerasimov & Karjalainen, 2010) can be attributed to a number of reasons, namely:

- The structure of forest industry in Belarus has relatively low demand for pulpwood, especially soft deciduous tree species (birch, aspen, alder);
- The development of protected natural areas in the forests and the provision of its special protected forest areas: 18% of forest area is fully or partly restricted to wood harvesting;
- Radioactive contamination of 22% of forest area; wood harvesting is permitted in forests with a density of contamination up to 185 kBq/m;
- Inaccessibility of swamp forests: wood harvesting in 17% of forest area is directly linked to weather conditions and is possible during frosty winters and dry summers.

Table 3.2. Actual harvest in Belarus in 2010 (Rodionov, 2012)

Region	All types of felling		Type of felling					
			Final felling		Thinning		Other felling	
	Thousand ha	Thousand m^3	Thousand ha	Thousand m^3	Thousand ha	Thousand m^3	Thousand ha	Thousand m^3
Brest	86.7	1638	3.5	689	39.6	717	43.6	232
Vitebsk	62.4	2675	6.3	1466	37.6	868	18.5	341
Gomel	97.9	3185	7.7	1735	47.5	972	42.8	478
Grodno	36.2	1679	2.6	650	21.8	547	11.8	482
Minsk	111.3	3853	5.9	1356	47.1	1074	58.2	1423
Mogiliov	67.9	2443	4.1	1019	36.8	709	26.9	716
Belarus	462.4	15473	30.3	6915	230.5	4887	201.7	3671

2.3. Forest administration and forest policy

The forests in the Republic of Belarus are state property. Forests under the jurisdiction of the Ministry of Forestry (Minleshoz) cover 87% of the forest fund (Fig. 3.3.). Besides, a significant share of the forest fund is managed by the Administration of the President of the

Republic of Belarus (8%) and by the Ministry of Emergency Situations of the Republic of Belarus (2%). The forest administration is concentrated in the Ministry of Forestry of the Republic of Belarus. The Ministry is in charge of implementing national forest policy and enforcing forest legislation on the forest fund. The implementation and local administration are organized through six regional forest services (*GPLHO*) and 95 district forestry enterprises (*leskhoz*) which are responsible for the allocation of forest use rights.

The most important documents are the Forest Code of the Republic of Belarus, adopted in 2000, the Declaration of the President of the Republic of Belarus on improving the forest management, and the National Forest Programme in 2007–2011, approved by the Council of Ministers of the Republic of Belarus on 29.12.2006, No. 1760, which has been successfully implemented, as well as other legislative acts (Semashko 2008 quoted by Gerasimov & Karjalainen, 2010).

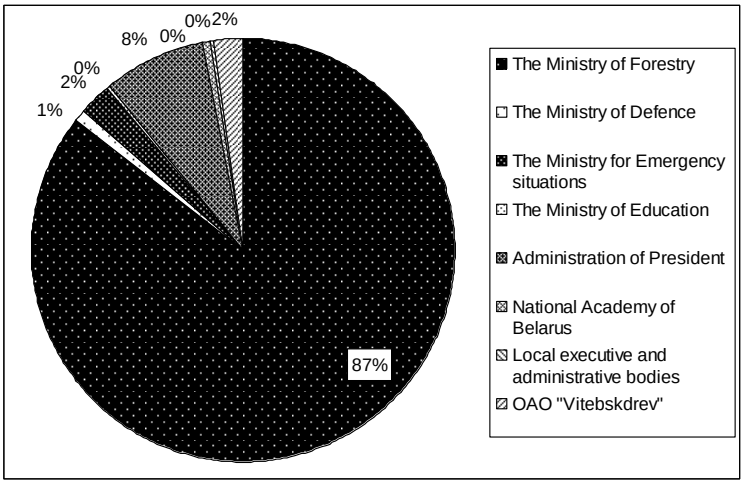

Fig. 2.3. Department distribution of the total forest area (Loginov, 2011)

Currently, the process of improving forestry is going in the following directions (FAO 2009):

- In order to further the development of forest policy and solving issues connected with forests a number of arrangements focused on the separation of supervisory and management activities are currently being implemented through improvement of the State control over such actions as the use, reservation, protection, and renewal of forest resources as well as by phased separation of logging activities from silviculture practices.
- In order to successfully carry out these actions some changes in the forest legislation were prepared to abolish the licensing for the harvesting and wood processing, which makes it possible develop the forestry services more rapidly, especially in logging, which is very vital in response to existing and expected lack of labour in rural areas and the need to reduce outlays related to forestry.
- Complex work has been carried out to improve the profitability of forestry, primarily through increased sales of forest and wood products on markets, development of hunting, and full use of the potential of forest resources.
- In order to carry out the principles of sustainable forest management and forestry governance, as well as to improve efficiency and multiple-use of forest resources on the base of sustainable forest management, the following issues are currently being solved:

- improvement of current institutional and economic frameworks for forest management;
- increasing incomes from forests;
- development of a market-based mechanism of timber exchange trading, and the reduction of sale of wood on the stump;
- improvement of the system of sustainable forest management and forest governance, and implementation of works on forest certification

The concept of the National Forest Programme in 2011–2021 has been under development in Belarus (Lobas 2010 quoted by Gerasimov & Karjalainen, 2010). One of the priorities of forestry development activities will be the use of new selected plant material, ecologically adapted to local soil and climatic conditions. Currently, only about 20% of plantations are established based on selected seeds. The objective is that all new forest plantations should use selected plant material, and the establishment of forest plantations should be preceded by an autumn tillage. Another priority is the creation and development of nursery farms and the carrying out of silvicultural operations. Implementing of modern forest technology made by domestic and foreign producers is also named among the top tasks. Further development of wood harvesting operations is among the main priorities due to increases in mature forests stock, resulting in growth in harvesting volume.

Discussions

"*Although informing and educating the public are activities that are appropriate to legislatures, they are not always successfully accomplished, fro several reasons…. Debating crucial policy decisions in committee sessions (often reported to limited audiences) discourages widespread understanding of important forestry issues and the means available for addressing them. A public that is typically passive and absorbed in daily living is not a receptive audience; it is not interested in most suggested public forest policies nor in the details of lawmaking*" (Ellefson, 1992: 208-209).

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HISTORICAL DEVELOPMENT OF AFFORESTATION AND REFORESTATION POLICY IN JAPAN SINCE 1860s

IKUO OTA*

Abstract

Japan is one of forest rich countries in the world. Although more than 125million people are living on the small islands, forest cover rate is kept on the level of 66%. Looking back the history, continuous efforts of afforestation and reforestation have been done to create this amount of forests since the beginning of modernization of the country.

This paper aims to analyze historical trend of afforestation and reforestation policy in Japan. Rapid industrialization after Meiji Restoration in the late 19th Century caused severe forest devastation. The government made a great effort to rehabilitate such devastated land and the area of forest coverage came back slowly but steadily. However, war time demand in the first half of 20th Century made it right back where it started.

Afforestation and reforestation efforts had to be done again. Rising price of timber and energy revolution under the rapid economic growth boosted the movement of expansive afforestation during a couple of decades since the late 1950s. As a result of such continuous efforts, over 10 million ha of forestland were converted into plantation forests such as Japanese cedar and Japanese cypress.

While the steady increase of forest resources, domestic timber production has been decreasing since 1970s because imported wood mostly took over Japanese timber market. The situation, however, is changing in recent years. Reflecting on the policy failure in the past, Forest and Forestry Revitalization Plan of the government would make a change in weaken forestry sector today.

Key wards: Expansive afforestation, Forestry Agency, Japanese cedar, Japanese cypress, land register system, Meiji Restoration

1. Introduction

Forest cover rate of Japan is 66.4%, and it is among one of the highest in developed countries. Its 25 million hectares of forestland indicates that Japan is an outstanding forest rich country. There are many reasons why Japan has this much forestlands: Enough precipitation, relatively warm temperature, fertile soil of volcanic origin, steep terrains which excludes human cultivation, and others. However, these natural conditions are not the only reasons for heavy forestation of the country. Continuous human effort to rehabilitate or to keep forest vegetation is another important factor.

Population of Japan is 128 million, and population density is 343/km^2. Japan is also one of the most crowded countries in the world. On the other hand, trees have been traditionally the

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fundamental building material for Japanese people. Great majority of Japanese houses, except high-rise apartments, are wooden structure still today, and Japan is one of the biggest consumers of wood fiber in the world.

What is the reason of such paradoxical situation of this country? : Very many people with heavy consumption of wood coexisting with high rate of forest cover on the same small islands. This paper is aiming to answer the above question with analysing historical development of afforestation and reforestation policy after the Meiji Restoration in Japan. It also prevails some problems that Japanese forests are facing today.

2. Meiji Restoration and the beginning of scientific forestry

As the French Revolution usurped political power from the king to uprising people, the Meiji Restoration usurped political power from the Shogun, a head of feudal worriers, to the Emperor who were supported by the public. Japan opened up the window to foreign countries after 250 years of closure in 1868, and modernization as a nation country began from then on.

Before the Meiji Restoration, the Shogun controlled nearly 300 of local lords. There were no responsible land resister system under the feudal system, the Meiji government hurried to make up land resister system including cropland, pasture and forest all over the country. As a result of years of field surveys and administrative works, around 10 million hectares of land, mostly forests, were decided to belong to the central government. However, with having numerous conflicts between local people and the government about the custom land tenure, a few million hectares of forestlands were given back or disposed to the people afterward.

State forest network and management organization, Forestry Agency, had been established step by step since 1870s. German system was the model of Japanese state forest. The first forestry school was built in 1882 in Tokyo. The government sent some excellent students to Germany and they became professors at the forestry school after coming back. The government also invited a few scholars from Germany. Many of graduates from the forestry school entered the Forestry Agency .

The first Forest law was established in 1897, but it means there were no general rules in forest utilization for 30 years after the restoration. There used to be strict rules for utilization of common property in most of the villages beforehand. However, privatization of forestland after the Meiji Restoration made it difficult for village dwellers to keep such traditional rules without proper legislations. In addition, people needed more and more timber with the progress of industrialization and militarization of the country. As a result, huge areas of forests were denuded or degraded during this 30 years of absence of regulation. Therefore, Forest Law in 1897 focused on establishing protected forests and regulation for forest utilization.

Forestry Agency intended to apply scientific forest practices into all over the country, but they were able to do so only in the state forest because of budgetary and staff limitation and other reasons. Under such circumstances, forest degradation in many different regions would be inevitable. In 1899, Forestry Agency launched the special management project with the revenue from state forest disposal, and began to promote afforestation actively on wasted fields and reforestation on denuded forests.

3. Reforestation before early 20th Century

During the feudal era, forestland rehabilitation or reforestation on degraded land were operated in not a few parts of the country. In most cases, the purpose of such forest practices were to recover forest cover in order to protect the slopes or seashores. Of course, there were some exceptions. One of the oldest plantation practices began at the northern part of the then capital city Kyoto in late 14th Century. Decorative poles for tea ceremony room was the main products from the region, and it is still famous as Kitayama Sugi today.

However, modern plantation practices for timber production based on scientific forestry began at the turn on the 20th Century. There was a growing sense of crisis about forest degradation in the government, so that the River Law in 1896 and Erosion Control Law in 1897 were established as a series of nature conservation legislation with the Forest Law in 1897. In addition, the government ordered the Forestry Agency to promote tree plantation widely over the country.

At first, such plantation practices were done on public land especially on the state forests. Because of the way of land registration decision, forests near the villages tended to be in private or communal ownerships, while forests on the ridge or deep mountains tended to be state owned. Afforestation and reforestation were urgently needed on such forests around the headwaters, and Forestry Agency focused on the state forest to do so.

Figure 1 shows the trend of the area of afforestation and reforestation between 1878 and 1916. In this figure, reforestation means the plantation practices made by ordinary management budget and afforestation means the plantation practices done by special management project. Before the special management project launched in 1898, both afforestation and reforestation were done by ordinary management budget, but after that almost all of afforestation practices were done by the special management project and ordinary management budget were to spend for reforestation. It was obvious that plantation efforts expanded rapidly at the turn of the Century.

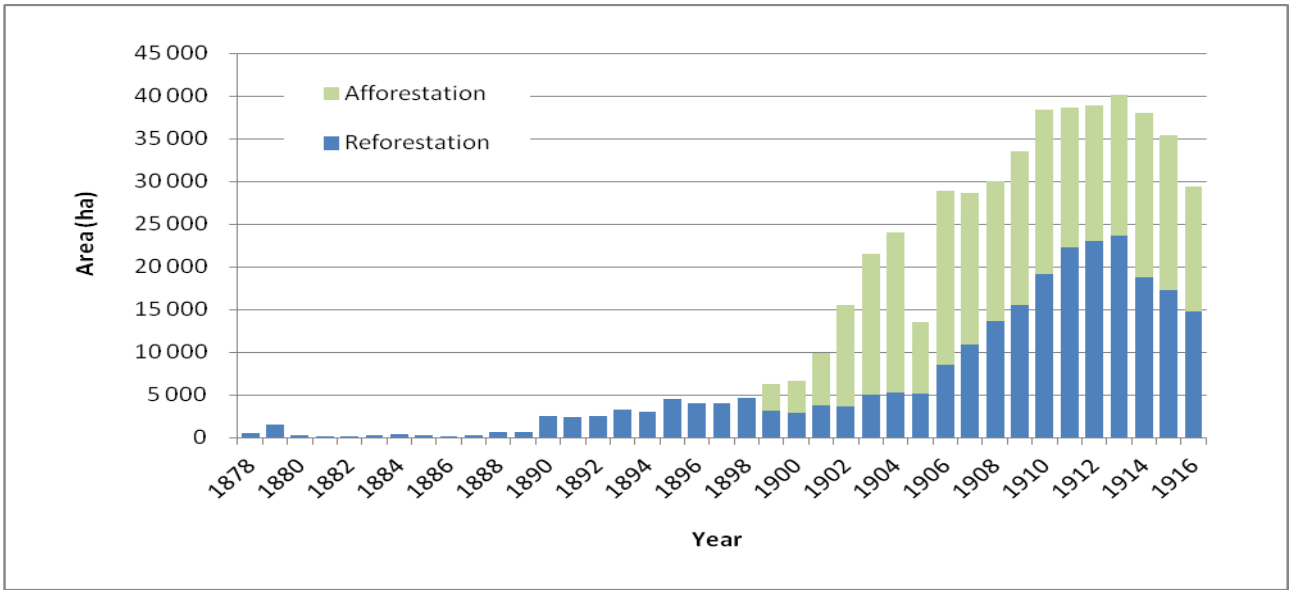


Figure 1. Trend of the Area of Afforestation and Reforestation in the State Forest of Japan (1878-1916)
Source: Matsunami (1919) History of Meiji Forestry

Degradation of the forests was of course one of the leading reasons of this rapid expansion, but there were another reasons that enabled such a drastic change happened. Penetration of monetary economy and spread of merchantable and/or chemical fertilizers made it easy to employ enough labour forces in rural mountainous villages[i]. Coincidence of demand and supply, i.e. urgent need of tree plantation and abundant supply of labours, were the key to the success of afforestation and reforestation at the early stage of modern history in Japanese forestry. During its 23 years of special management project, about 579, 000 ha of afforestationa and reforestation had done on the state forest[ii].

Afforestation and reforestation on state forest proceeded favourably so far, and the government considered to expand plantation practices into other public forest as the second step. In 1920, Public Plantation Law was enacted. This law was to promote profit share plantation program on non-state forestlands. The system was as follows: 1) Non-state forest owners, especially municipalities such as cities, towns and villages, made a contract with the central government of profit share plantation, 2) Forestry Agency did plantation and all the management efforts until the final harvest, 3) after the final harvest, i.e. clear cutting, both the municipality and Forestry Agency share the profit fifty-fifty. Major tree species of this program were Japanese Cedar (*cryptomeria japonica*), Japanese Cypress (*chamaecyparis obtusa*), Japanese Red pine (*pinus densiflora*), Japanese Larch *(larix kaempferi*), and Sawtooth Oak (*quercus acutissima*).

Primary reason of this profit share plantation program was to expand forest cover on degraded forests and bare land, but there was another strong political incentive. The central government interested in reducing communal forests which were managed by old natural villages, or gemeinschafts, because they were believed to be an inefficient and irrational management style. Therefore, the government gave advantageous share to the municipality which changed the ownership status of the land from communal into municipal before the plantation contract. As shown in the Figure 2, this program continued for 40 years, and total area of plantation reached over 310,000 ha.

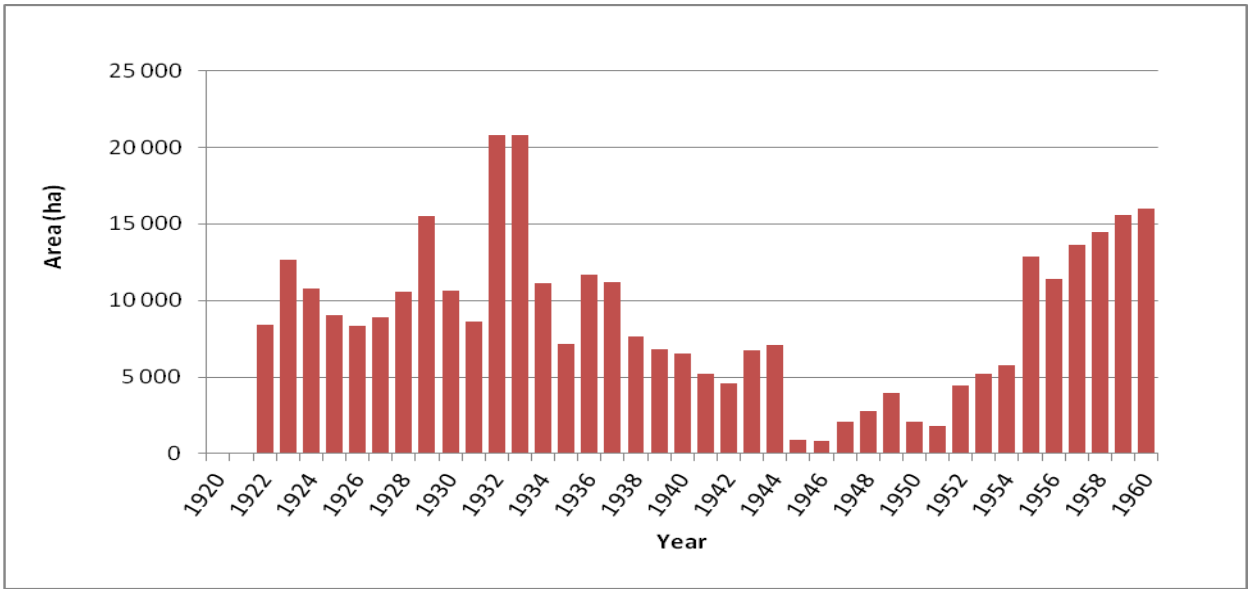


Figure 2. Trend of the Area of Plantation of the Profit Share Program on Non-state Forestland of Japan (1920-1960)
Source: Rinseisougoukyougikai (1980) One hundred years of history of silviculture in Japan

4. Reforestation movement after the World War II

During the long lasting period of war in the first half of the 20th Century, huge amount of natural tree stands were cut and forests were heavily degraded all over the country. More than 3 million hectares of forests needed to be rehabilitated after the war in 1945. In spite of such a miserable situation in terms of forest resources, Japanese people heavily desired wood materials for the recovery of the society. Most of big cities were bombed and burnt, and also fuelwood was the main source of energy for the people. In addition, poles for coal mine was another great demand for wood because domestic coal was the most important energy source for Japanese society at the time. Occupation forces of the United Nations, mostly US Army, reported that there would be no trees left in Japan in 20 years if they continued to consume timber so rapidly as they were.

In 1946, Congress passed the Development of Forest Resources Law. The law designated the 50% subsidy to private forest owners on their plantation practices. This was the first kind of such subsidies for individuals.

Nationwide program of restorative reforestation began in 1949. It was a 5-year program in accordance with the Economic Restoration Plan of the government. To ensure the execution of plantation on private forestlands, the government created another act, named Special Measures for Reforestation Law, in 1950. This law established legal force to plant certain kind of trees for designated area of degraded or denuded private land to the owners. Or, in case the owners could not plant trees by themselves, profit share program would be applied to complete the reforestation.

Meanwhile of economic restoration in Japan after the World War II, Korean War had happened to start in 1950. Needless to say, this was a big tragedy for Korean people, but on the other hand it created huge amount of demand in industrial materials and products including timber at the neighbouring countries such as Japan. Timber price went up rapidly and private forest owners rushed to cut their forest and reforest them for future benefit. In most cases at the time, rural farmers held surplus labour forces, i.e. jobless brothers and children, and plantation practices were often done by family members. This resulted no extra money for them to spend for reforestation with having 50% of subsidy from the government. That was why reforestation proceeded smoothly in this time.

Ten years were enough for Japan to rehabilitate from the disaster of the war. From the middle of 1950s to 1973, Japan enjoyed high economic growth. With the rapid development of industrialization of the country, energy consumption style of the society had changed dramatically. It was so-called energy revolution. Utilization of petroleum and saturation of electricity expelled coal and fuelwood from many phases of the people's life. For example, charcoal production volume dropped from 2.1 million tons in 1955 to 590 thousand tons in 1965, and to 70 thousand tons in 1975. Charcoal and firewood were no more demanded by usual family who had gas and electricity supply in home.

This drastic change affected a lot to rural mountainous villages. Charcoal and firewood were produced in the natural broadleaved forests, mainly in the second growth and/or coppice forests, but those forests became no more useful. However, on the other hand, industrial timber was short in supply and the price went up higher and higher. Not only the government but also private forest owners were considered to cut such useless broadleaved forests and replant softwood tree species on their forestland. This was the idea of "expansive afforestation" and the

government strongly assisted to do this conversion of forest type all over the country since the late 1950s[iii]. Clear felled broadleaved trees were sent to pulp mills in order to satisfy growing demand of papers and paperboards. Genetically improved softwood trees and fertilization were introduced on newly planted areas to increase production.

Expansive afforestation was a very successful policy at the time, and areas of artificial plantation expanded and kept in a high level during 1960s and 1970s. Japanese cedar and Japanese cypress were the two major tree species for expansive reforestation. Both of them were expected to be a high quality construction lumber in 40 to 60 years, and internal rate of return of the plantation were calculated around 8% in case of good condition[iv]. Unfortunately, such high expectation was totally unrealistic so far. Anyway, expansive afforestation had mostly attained the goal and diminished steadily after 1970s.

The government enthusiastically promote expansive afforestation on the one hand, but it also facilitated log import in order to satisfy growing demand of timber on the other hand. Domestic timber production began to decrease in the middle of 1960s, and imported timber dominated Japanese market soon after that. Two reasons were sought to explain this decline. First of all, flood of less expensive imported timber drove out domestic timber from the market. Secondly, there were no more good trees within an accessible area because of intense and excessive harvesting of domestic forest resources after the war.

Figure 3 indicates the trend of plantation in Japan between 1950 and 2010. As shown in the figure, over 300 thousand ha of plantation, of which majority was expansive afforestation, had been done every year for more than 20 years during 1950s and 1960s. However, the area of plantation has been shrinking rapidly since the middle of 1970s, and area today is only about 30 thousand ha per year, or less than 1/10 of its peak. In accordance with the decrease of timber production, reforestation area also decreased for decades.

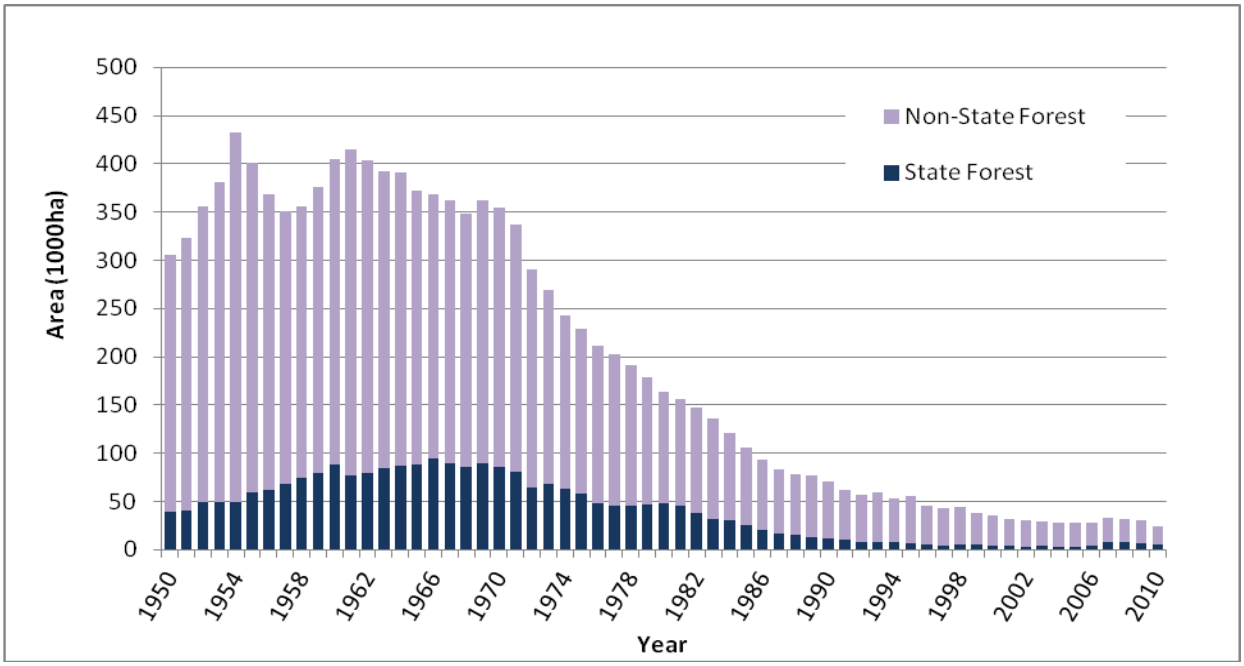


Figure 3. Trend of the Area of Plantation in State and Non-State Forest in Japan (1950-2010)
Source: Forestry Agency (each year) Summary of Forest Statistics

5. Present situation of Japanese forests

Table 1 shows present status of forest resources in Japan. Total forest area is about 25 million ha, within that a little over 10 million ha or 41.2% are artificial plantation. Private forests hold majority of them. Total forest inventory is about 4.4 billion cubic meters and 2.7 billion or 59.8% of them are in plantation forest. One can say it is a successful result of nationwide plantation efforts since the era of modernization of the country.

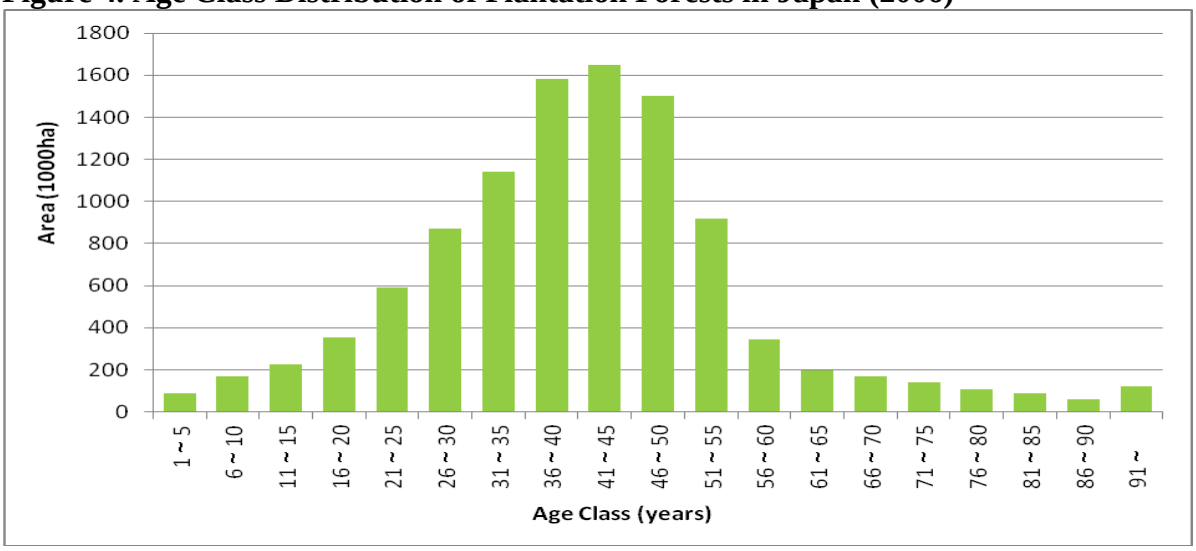
One of the biggest problem in Japanese forestry is its low production volume. While the annual increment of forest inventory is reaching about 100 million cubic meters, harvesting volume is less than 20 million in recent years. Therefore, resources are growing year by year without having proper balance of age distribution. Figure 4 indicates age class distribution of plantation forests in Japan. Because of enthusiastic efforts of expansive afforestation in 1960s and 1970s, age classes of 36-40, 41-45 and 46-50 are standing out, but on the other hand age classes under 20 and over 56 are very little. The situation is far from normal forest and is necessary to be reformed sooner or later.

Table 1. Forest Resources in Japan (2007)

Ownership	Total		Plantation		Natural Forest		Others	
	Area (M ha)	Inventory (MM m^3)	Area (M ha)	Inventory (MM m^3)	Area (M ha)	Inventory (MM m^3)	Area (M ha)	Inventory (MM m^3)
State	7,686	1,078	2,364	424	4,691	654	631	1
Municipal	2,830	484	1,247	295	1,449	190	134	0
Private	14,535	2,864	6,724	1,931	7,217	933	595	0
Other	46	6	12	2	27	3	7	0
Total	25,097	4,432	10,347	2,651	13,383	1,780	1,367	1

Source: Forest Agency (2012) Forestry White Paper

Figure 4. Age Class Distribution of Plantation Forests in Japan (2006)



Source: Forest Agency (2012) Forestry White Paper

Even though plantation activity is not very active in these days, the role of reforestation is still important for the society. The government insists the objectives of silvicultural projects including reforestation activity as follows: (1) To enhance public benefit functions of forests such as land protection, water holding capacity and recreation, (2) to sustain and enrich forest resources, and (3) to develop rural economy with creating jobs in forestry and related industry.

Recently the government shifted the direction of subsidizing policy for private forests. Subsidy for plantation, weeding and thinning used to be offered all the private forest owners regardless of the size of the property. However, the government requests to merge small properties into the size of 30 ha or more in order to apply subsidy presently. The reason of this shift is to concentrate public money onto limited private owners who have motivation and capability for expanding forest production with enlarging the unit of operation. This is one of the leading features of the new forestry policy named Forest and Forestry Revitalization Plan launched in the end of 2009[v].

Utilization of woody biomass for energy is also a fair wind for Japanese forestry. It is calculated that some millions cubic meters of woody debris are left on the harvested forest sites, and the utilization of such biomass materials must improve profitability of forestry. The government created a new law in 2012 to facilitate renewable energy. By this law, electric power companies have to purchase electricity generated by solar, wind, geothermal and biomass with certain prices which are higher than their ordinary selling price. Plantation area is prospected to increase with the expand of timber production in the near future.

6. Discussion and Conclusion

Forests in Japan have experienced critical situation several times in its modern history. Huge areas of mountainous forests were devastated in the end of 19th Century and during the World War II. Governmental policy and public efforts for afforestation and reforestation have been saving the islands from disasters. It was really an important public policy.

However, constant supply of subsidy to private forest owners made them forget to work hard. It was one of the reasons why Japanese forestry became very costly to compare with other countries. Forest owners had been satisfied by planting trees with governmental support and never considered to reduce the cost of forest practices including thinning and harvesting. In terms of road system and mechanization, Japan is standing far behind of European countries such as Sweden, Finland, Germany and Austria. Planting trees is just a beginning of forestry and of course is not enough for sustaining forestry as an economic activity.

Now the people in Japan are enjoying beautiful forests covering all the hills and mountains over the country. However, there are some serious problems underneath. First of all, the lack of appropriate forest management is the biggest issue. This is because of the decline of forestry caused by low profitability. Another problem is the relationship between people and forests. Many people in big cities do believe timber harvesting is not good for the nature and they say not to touch the forests. Historical efforts to create present forest are forgotten.

Sustainable forest management is the key word for every country in the world. Even though we have a high percentage of forest cover and rich forest resources, the situation is not sustainable so far. Strong policy initiative and public participation are more than necessary to overcome this somewhat strange situation.

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