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Editors
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Faculty of Forestry University of Sarajevo
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Legal Aspects of European Forest Sustainable Development

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PREFACE

IUFRO 6.13.00 - Forest law and environmental legislation - is one out of 274 units within the International Union of Forest Research Organizations (cf. www.iufro.org). Like its umbrella organisation, unit 6.13.00 has been operating world-wide over decades, and only recently it has established the sub-unit 6.13.01 – Latin American forest and environmental law. It is the unit's general and foremost objective 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. A number of publications have been produced proving how this unit meets its high standards. (cf http://www.iufro.org/science/divisions/division-6/60000/61300/publications/)

Following the rapid pace of political development and changes especially in Central and Eastern Europe during the last two decades, main emphasis was put on documentation, dissemination and critical analysis of developments in forest law and environmental legislation in European countries, not only, but in particular such with economies in transition. Starting from 1998, IUFRO 6.13.00 has regularly been organising workshops to discuss legal aspects of European forest sustainable development.

The 1st International Symposium on "Experiences with new forest and environmental laws in European countries with economies in transition" was held in Ossiach, Austria in June, 1998. This meeting was followed by the 2nd symposium on the same topic, again in Ossiach, Austria in October 1999 (with presentation of its main results during the XXIst IUFRO World Congress in Kuala Lumpur, Malaysia, in 2000). The 3rd International Symposium was held in Jundola, Bulgaria in June, 2001, followed by meetings in Jaunmokas, Latvia in August, 2002, then in Zidlochovice, Czech Republic (May 2003), and after that follow-up symposia took place in Poiana Brasov, Romania, in June 2004, in Zlatibor Mt., Serbia, in May 2005, in Istanbul, Turkey, in May 2006, in Zikatar, Armenia, in June 2007, in Sarajevo, Bosnia-Herzegovina, in May 2008, as well as in Zvolen (Slovakia) in May 2009. The next meeting is scheduled for May 2010 in Nikosia (Cyprus).

The 2008 Symposium celebrated three major related anniversaries: The 60th Anniversary of the Faculty of Forestry of the University of Sarajevo; the 10th International Symposium on "Legal Aspects of European Forest Sustainable Development"; and 25 years of continuous work of the IUFRO Group 6.13.00.

The *60th Anniversary of the Faculty of Forestry University of Sarajevo* has been a special and great occasion for our yearly European meeting. We have been very happy to be invited by the colleagues from this Faculty to join them at this important event in Sarajevo. Bosnia and Herzegovina had been on the verge of the Habsburg and the Ottoman empires for centuries, sharing both traditions, and all too frequently also merging them. It was exactly that link of traditions which allowed the participants valuable insights in the legal histories of their own countries.

The *10th International Symposium* on "Legal Aspects of European Forest Sustainable Development" was held in Sarajevo on 7 - 9 May, 2008. Presentations and discussions focused on legal requirements and implications of forest owners' co-operation and communal forestry, forestry related EU legislation and International Conventions, forest policy and sustainable development, legality of non-forest use of forests, balancing between forestry and nature conservation, and the relationship between forest laws and environment related legislation (*Annexes 1 and 2*). Altogether, forty-seven participants representing twenty-three countries as well as more than 80 core representatives of the B-H forest sector participated.

The 2008 Symposium was hosted by the Faculty of Forestry University of Sarajevo, and supported by the Government of the Federation of B-H, the Canton Sarajevo, and the Forest Management Companies in B-H. We thank all who made the Symposium a successful, interesting and friendly meeting, above all Dean Prof. Dr. Faruk Mekić, Vice-Dean Dr. Mersudin Avdibegović, Dr. Sabina Delić and Mr. Saša Kunovac.

25 year of existence of the IUFRO Research Group "Forest Law and Environmental Legislation" was the third occasion of celebration in our Sarajevo meeting. During this period of time the group has developed and consolidated its matchless position and broadly acknowledged work in the rapidly developing field of forest law and environmental legislation around the world. The research group was founded in 1982 by Prof. Dr. Franz Schmithuesen of the Swiss Federal Institute of Technology, ETH, in Zurich, Switzerland. From 1982 to 2000 he acted as chairman of the group for 18 years, and since 2001 he assumed the task of deputy coordinator. One of his achievements within our group is the successful promotion of multidisciplinary and integrative cooperation between scientist and practitioners in a country, regional and world-wide perspective. Together with other colleagues he has edited and published a large number of member contributions, research proceedings and state of knowledge reports (*Annexes 3 and 4*). I think that this is good reasons to thank Franz Schmithüsen on behalf of the participants for his steady, innovative and intensive work over many years.

Interested in IUFRO 6.13.00? Please visit *www.iufro.org/iufro/iufronet/d6/hp61300.htm* for more information, or directly contact the coordinator via email, <*HP@net4you.at*>.

Peter Herbst

Coordinator IUFRO 6.13.00

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Legal provisions regulating communal forests and pastures in Albania

***Vezir Muharremaj*[*], *Janaq Male*[**], *Haki Kola*[***] *and Nehat Çollaku*[****]**

Abstract

There is an old tradition for the management and use of forests and pastures adjacent to inhabitant centres by villages in common or by individual agricultural families. In the framework of policies for decentralization of the natural resources management and the legalization of the existing informality in the possession of forests and pastures, and the EU integration of Albania, the process of forest and pastures transfer under the ownership or use of communes has become a problem for the central and local government, users (villages, agricultural families) and their associations throughout the country. The legal and sub-legal acts enacted after the '90, have made possible the transfer of forests and pastures under communal use. The Government in cooperation with different donors started the transfer since 1996. Until now, there have been transferred 40% of forest areas and 25% of pasture areas, involving almost 50% of communes.

Despite the achievements, there is a concern for the slow pace. The process is not completed, and the boundaries between communes, villages and users areas have not been legally recognized. The existing legal framework is not clear and consistent, and does not provide legal assurance for local users of forests and pastures; the legal acts have shortcomings, gaps, overlapping of competencies or controversies that slow down the transfer process and the reform in the sector itself. Among the main deficiencies can be mentioned: concentration of competencies in the hand of central government institutions; discrepancies and overlapping of competencies between some laws on administration and cadastre of communal forests and pastures; uncertainty on ownership over communal forests and pastures and undefined stage of privatization; unclear rights of use especially for management of forests; diffuse relations between the central and local government, forest service and users; lack of compensation for restrictions in laws addressing protected areas, water and mineral resources, tourist and military areas situated in forests; lack of legal provisions determining criteria and rules on forest exploitation and sales of wood and non-wood products by users and their associations for poverty alleviation in rural areas.

1. Introduction

Traditions for the use of forests and pastures in Albania by local communities are very old ones. From 1922 onwards, the first Albanian law on forests and pastures of 1923 has divided the forests and pastures of Albania in three categories: state, communal and privately owned. There were traditional rules for management of collectively owned forests and pastures set by experience and in good understanding by the inhabitants. Timber and fuel wood production or livestock grazing were done upon a permit delivered by the village council of elders and against a tariff. The benefit was general for all inhabitants. The common forest and pasture area could not be divided or alienated. In the majority of villages, clans and families had not declared the forests and pastures inherited and used for their needs for generations, in order to avoid the payment of taxes. But in fact, these properties were recognized and respected by all people. During the communist regime, all forests and pastures were nationalized and became

[*] National Association of Forest and Pasture Users Association
[**] Dutch Organisation for Development
[***] PMU Natural Resources Development Project
[****] Ministry of Environment, Forests and Water Administration

state owned. Villages were allowed to cut timber and fuel wood and graze livestock in certain forests and pastures according to a plan being far from fulfilling their needs. In the mean time, the forests and pastures close to villages become very degraded by cutting and heavy grazing.

2. Transfer process of state forests and pastures for communal use

After the collapse of the centralized system, three forms of property were recognized through the new law on forests (1992 and 2005) and pastures (1995, 2007): state, communal and privately owned. Based on these laws and related bylaws started the transfer process of forests and pastures to communes for their use, in collaboration between the District Forest Service (DFS) and the local government units (LGU) and with technical and financial support from some international donors. However, the legal basis was enriched with important laws such as Law No. 8652, 2000 "On local government", Law No. 8743, 2001 "On immovable state properties", and Law No. 8744, 2001 "On the transfer of public immovable state properties to the local government units".

The transfer process aims at:

- Decentralization of natural resources management (forest and pasture) and transfer of responsibilities and management rights to LGU and local communities;
- Further curbing degradation and desertification of forest and pasture resources as well as improving them without strong interventions towards rural communities that have them in use;
- Facilitation and poverty alleviation in rural areas through generating income from the sustainable management of forest and pasture resources;
- Democratization of life in rural communities through active participation in decision making processes on natural resources management.

The transfer process is carried out in 150 communes (50% of the total) with 1,300 villages and 160,500 families, and is still ongoing. The user associations established in these communes have participated in the preparation and implementation of management plans prepared during the transfer process, through support of the World Bank, other donors and the Dutch Organization for Development (SNV). During the transfer process valuable experience has been gained and in the majority of the communes. The results are very promising regarding the change of users' attitude and awareness in putting under stronger protection the forests and pastures that are considered under their possession. The Ministry of Environment, Forests and Water Administration (MEFWA) is the responsible authority for conducting, monitoring and managing communal forests and pastures through its district forest service units.. On the local government side, the process is conducted by the Ministry of Interior and the communes.

The processes of transfer and management of communal forests and pastures by the communes/villages and families are successful and the beneficiaries are the following ones:

- Rural families –constituting about 54 % of the total population, of which 71% are employed in the agricultural sector including forests and pastures; they have: (i) economic, (ii) social, and (iii) environmental benefits and become more sensitive towards the protection of natural resources and the entire environment.
- Local governments – having more competencies and at the same time more obligations to communal forests and pastures management - gain (i) greater experiences for fulfilling their duties and developing economic activities related to

community forestry; and (ii) possibilities for offering better services to the inhabitants, deriving from the ownership on communal forests and pastures.

- Forest Service – gains reduction of its tasks since for the protection of the majority of the country's forests and pastures transferred areas the communities and local governments will be interested.
- The entire society, given that: (i) the improvement of communal forests and pastures by agricultural families themselves and the communes, besides the economic benefits, will curb land degradation and improve environment, as well as (ii) the expenses for management of these resources by communes/villages and families will be smaller than those of the state forest service.

3. Shortcomings in the provisions related to communal forests and pastures

***General aspects**:* Analysing the legal framework on which the transfer process of communal forests and pastures is based, and from experience of more than 10 years with this process, it can be observed that, in parallel with known achievements, there are shortcomings, gaps and overlapping of competencies or controversies that slow down the transfer process and the reform in this sector. This refers in particular to the following points.

- Administrative boundaries between the communes and villages have not yet been legally recognized.
- Rural families do not have documents that certify their exclusive rights of use over a certain forest or pasture.
- There capacities of Local Government Units (LGU) to manage the process are insufficient.
- The transfer process is not well understood by the users.
- There is not enough knowledge of the process by users and there is mistrust on their side towards the ongoing government activities.

The trend of concentration of competencies in the hand of central bodies (ministries) continues even for issues that have been retained for the local government which is contrary to the principles of decentralization and to EU standards. There are discrepancies in definitions for similar situations of the forest and pasture resources. Users associations show lack of experience on sustainable management and its organization and functioning. The communal forests and pastures are of low productivity, generally degraded, from which income cannot be generated during the first years. Also, there is a lack of capacity to develop extension services for communal forests and pastures.

The various legal acts relevant in the context of communal forests and pastures can be divided in four groups:

- Legal acts on property rights and the rights of use;
- Legal acts on rights and responsibilities for management, exploitation and protection of forests and pastures;
- Legal acts on the rights of processing and selling and marketing of products and services (economic and commercial rights);
- Legal acts on the rights related to tax collection, administration and re-investment of public and private funds in this sector (fiscal and administrative rights).

Legal acts regulating property rights and rights of use: The ownership over communal forests and pastures is unclear and their privatization indefinite. Law No. 8743, 2001 "On immovable properties" stipulates that forests and pastures are public immovable properties if they belong to the state. Law No. 8337, 1998 "On the transfer of ownership of agricultural land, forests and pastures" stipulates that they can not be alienated till compensation of ex-owners has been undertaken thus being an obstacle undefined in time. There are no orientations and conditions for going towards the privatization of communal forests and pastures, nor criteria for passing from usage to ownership.

Privatization of other natural resources has not started yet and there are no deadlines set for this purpose. In parallel with forests and pastures, even for other natural resources, there are no acts that allow either their privatization to or free possession by LGU-s, or the transfer of their use rights to inhabitants and villages in the territories where they are situated. Also, there may be observed a senseless differentiation regarding property rights over agricultural land and property rights over forests and pastures. Agricultural land was rightly privatized without compensation being a basis for the livelihood of agricultural families. However, forests and pastures have not yet been privatized in spite of the fact that they have been and continue to be as crucial for the lives of families, in particular in many mountainous areas where they should be considered as "forest" families.

Rights and responsibilities for management, exploitation and protection: In the laws, there is a concentration of competencies in the hand of the state with regard to the rights and responsibilities for management, exploitation and protection of forests and pastures. This is manifest, for instance, in cases such as:

- Preparation of development programs, determination of the annual allowable cut; conduct, organization, control and protection of wildlife and the administration of the hunting fund by the forest service; giving parts of the medicinal plants fund to legal persons for management by the ministry, without any distinction of communal territories, etc.;
- Approval of changing categories of forest land, pastures, meadows and forests to agricultural land; changes of the category of unproductive land to agricultural land, forest land, forest, meadow and pasture; or of a change of category from agricultural land to unproductive land, meadow, pasture, forest land and forest;
- For appointing zones for eco-tourism development, for rehabilitation of forest and pasture ecosystems, flora and fauna habitats, digging within the forest fund, and setting of camping sites; for establishing new forests; for giving permission to exploiting sub-parcels and for preparing plans for harvesting wood and non-wood products; and for determining the annual allowable cut (with the approval of the minister though that amount is calculated by the management plans), for tree marking before cutting, and for giving permission to collect medicinal plants.

Among the shortcomings in legislation one can mention the following points:

- There are no criteria and rules on forest exploitation for fuel wood and timber and non-wood products, for lopping and grazing, and for pastures in communal use, for selling wood materials and other products to increase income and support poverty alleviation;
- There are no provisions for relationship-obligations of the central government toward LGU-s regarding communal forests, in particular toward users and associations;

- No legal provisions exist for competencies of organizational structures at diverse levels (commune, region, and ministry) related to management of communal forests and pastures.

The preparation of management plans, collection of forest products by licensed subjects, and rehabilitation work foreseen through concessions are stipulated in the law whereas users associations, having the potential and the need for income in order to survive, are left aside. No distinction is made in the procedures applicable to the forest fund administration, or for preparation, approval and implementation of measures foreseen in the management plan. No distinction exists with regard to the cutting and selling the wood material between (i) those applied in the forests and pastures under the use of communes for their own needs (after fulfilling the needs of its inhabitants), and (ii) those applied in forests and pastures in use of villages and agricultural families for their own needs in spite of the fact that the goals and uses of the two categories are quite different. Moreover there is no provision establishing the exclusive rights of the families to exploit the plots given in use for their own needs and, when wood and non-wood products are in excess, to sell them in order to generate income.

The application of procedures for the administration of communal forests and pastures is not possible at present, because the transfer process is not yet completed in any commune. There are no defined boundaries between villages and users; the users have not yet the contract with the head of the commune that would certify their use rights and there are no established structures for communal forest and pasture management in LGU-s. The land administration and protection sections in the regions and the land management and protection offices in communes/municipalities are technically subordinated to the MAFPC, while they should have been subordinated as well to the ministry in charge of local governance.

Rights of processing, sale and marketing of products and services (economic and commercial rights): The fact that only 4 legal acts mention the processing and marketing of products and services shows that the economic and marketing rights are not enough considered. They are still concentrated in hand of the state and are given only to licensed private subjects. In such a way, there is an opportunity left for illegal trade, contraband and corruption. There are still concentrated competencies in the ministry and the forest service, such as: for defining the zones, terms, species, quantities and for delivering permissions for exercising activities of collection, processing and exporting of medicinal plants.

The main shortcomings in legal acts for this category of rights are as follows:

- There is no mentioning of the rights that would belong to the users (village, families, and associations) for medicinal plants situated within the forests and pastures in their use.
- There are no provisions for the production and marketing of wood and non-wood products, including those from hunting, from communal forests, in favour of communes, villages, associations or families providing income and improving the very low living standard they have at present, especially in the mountainous areas.
- No legal provisions exist for processing and marketing forage products from communal forests and pastures, on processing and exporting of medicinal plants, and on cultivation of medicinal plants and using by-products from their processing.
- No incentive tools for supporting the associations on further processing of wood and non-wood products, including those from hunting and their marketing with a greater profit.

Collection of fees and taxes, administration and reinvestment of public and private funds in the sector (fiscal and administrative rights): The fiscal and administrative rights for communal forests and pastures, especially regarding the users and their associations, are almost totally inexistent.

Among the shortcomings of existing acts can be mentioned:

- There is concentration of competencies at the ministry or forest service level.
- There are no rules, criteria and procedures for selling wood and non-wood products, medicinal plants and other products from communal forests, pastures and other local natural resources for generating and using income.
- There are no tariffs for the communal forests and pastures sector which should be defined by LGU-s depending on local conditions and circumstances.
- There are no rights for villages, users, users' associations for generating income from activities in forests and pastures, hunting, medicinal plants, and no incentives for sustainable management, administration and reinvestment of income from public and private funds appointed for communal forests and pastures.
- There are no supportive measures when a user intends to invest in improving degraded communal forest or pasture or replanting. Other supportive measures that would be required refer to planting on low productivity land excluded from taxation until it enters into production, similar to fruit trees and vineyard cultivation, according to defined conditions.
- There is a lack of duties for central institutions and local government authorities for the annual planning of funds to compensate losses to communal forests and pastures users from restrictions of economic activities in zones declared for the protection of biodiversity, national parks and protected areas, tourist and military zones; or with restrictions for water and mineral resources situated within the territory of their jurisdiction.

4. Recommendations for improvement of provisions related to communal forests and pastures

Improvement of the legal framework*:* Considering the issue from a historical point of view, the Albanian rural family traditionally has secured the living through the use of plants and animal food and shelter, using agricultural land, forest land and pasture land. The use of forests and pastures adjacent to villages was done in a traditional form, without being registered and without any obligation toward the government. This kind of informality was inherited from centuries because of historical circumstances and social and economic conditions of the peasantry, particularly in mountainous areas. In the framework of Government policies for decentralization of natural resources management, legalization of the long existing informality in possession of forests and pastures close to villages, and the EU integration, the process of transfer of state forests and pastures to ownership or use of local government units and traditional users – village and rural families is still ongoing.

In support of the government's decision for completing the communal forest and pasture transfer, it is necessary that the legal framework is improved and completed taking into consideration some important issues as follows:

- In parallel with the state forest and pasture sector, at present, the communal forest and pasture sector has taken shape and is extending so much that it should have its place in the national strategies with priority.
- It is necessary to prepare and approve a National Programme on Albanian Forest and Pasture Development as it is advised by the European strategy for forest development.
- Considering deepening the decentralization of rights and responsibilities on natural resources management, and the decrease of informality in the economy, the changes in legal acts should foresee the transfer to the communal or municipality ownership of forests and pastures within their jurisdiction (and not in use). "Competencies given to local authorities normally should be full and exclusive", as is stated in the European Charter of Self-Government. Also, legal acts should legalize restitution and recognize traditional property right over forests and pastures within village boundaries for the real claimers and users (villages, clans, families and associations).

During the improvement of legal acts the realization of concordances among diverse laws should be kept in mind, looking at them in their entirety and unity, by considering changes in the European legislation and recent trends in the world addressing the transfer of rights over forests and other properties in general moving from usage to ownership. The broad participation of interested institutions and persons, representatives of the local government units, and especially the users and their associations, (in particular women that play an important role in community forestry) in the discussions for improvement and completion of legal acts is the key to their success and effectiveness.

Property rights and the rights of use: Improvement of policies and legal provisions for the transfer and management of communal forests and pastures and furthering their privatization, according to defined conditions, need to guaranty the legal rights of users and provide them with the necessary legal documents of transfer. It is recommended not to have limits neither on the size of forest and pasture areas for transfer at national scale or at the communal or user level, nor to set time limits. Surface areas should be defined through agreements between local government, forest service and users depending on conditions, traditions and national interests, and in considering the fulfilment of users' needs for products and services.

Amendments in the legal acts should foresee the transfer under ownership (and not use only) of the commune or municipality of the forests and pastures within their jurisdiction. Legalization – return and recognition of the traditional property rights on forests and pastures for the real claimers and the actual users (village, clan, family, association) – should provide them with the necessary documents and registration at the Immovable Property Registration Office. The criteria on forest and pasture transfer from the state to communes and from communes to users must be revised. The tasks of the central government, LGUs, forest service and associations should be defined, as well as the relationship between LGUs users and associations, the public-private partnership, and the incentives for the use of state forests by users and associations.

During the revision of legal acts should be defined the criteria for the transfer from use to ownership of users when they protect and properly manage their forests and pastures, and, on the contrary, the possibilities to expropriate them if forests and pasture are misused. Policies on forest and pasture privatization (excluding forest and pasture areas of special importance),

as well as on other natural resources of local character without compensation need to be clarified. Simultaneously with the transfer of the forest and pasture areas, and proportionally to the area to be transferred to LGUs, must also be transferred the investments and related funds for the maintenance or improvement of communal forest and pasture property for the current year including the transfer of specialists, tools and facilities from the forest service to the communes. The competencies on removal of areas from the forest and pasture fund and changes of the use should be decentralized. Attached to the decision for removal of an area from the forest fund should be the complete project of afforestation for the place designated for compensation, together with the relevant expenses and maps, by the beneficiary subject.

***Rights and responsibilities for management, exploitation and protection of forest and pasture resources*:** The experience suggests that management plans of communal forests and pastures are prepared and implemented on a village basis as the most homogenous unit of the local community, and that a summary of such plans needs to be prepared for the commune. This is to be conducted by a group of specialists of the commune, users' association, forest service and other users. It is necessary to define: the criteria on management plan implementation i.e. the plan of forest exploitation and non-wood products collection should be prepared each year by the commune and submitted for approval to the Ministry of Interior. The collection of forest products from communal forests and implementation of works should be done by the users and their associations.

The criteria and rules on communal forest exploitation and sale of products should be defined through a decision of the government, separately for forests in use by communes respectively for forests in use by villages or families. A similar decision should be issued for pastures under communal use. The improvement of legal acts should recognize the rights of management by the communes and users (village, families and associations); along with the forest and pasture even wildlife and medicinal plants management needs to be considered. Also, one has to recognize the right of the users to have products for sale and generate income for poverty alleviation, mainly in mountainous areas (free of charge or with a low tariff).

A distinction should be made in the legal acts between forests and pastures that are managed by the commune for the fulfilment of its functions, and the forests and pastures that will be managed in common by villages, families and associations. The organizational structures for the management of communal forests and pastures should be established at all levels (commune or municipality, region, ministry). A detailed action plan should be prepared for the implementation of a strategy with concrete indicators, time frame, responsible institutions and collaborative ones, as well as the periodical monitoring of their implementation and enactment.

For the augmentation of forests, wood production and non-wood forest products by users and associations, including the establishment of forest protection belts, soil protection from erosion and rehabilitation of degraded lands, the law or related by-laws should foresee direct benefits and incentives such as giving seedlings for free and providing loans without or with low interest rates. Studies should be undertaken for the determination of ways and means for securing the continuity of users' associations, making them interested in managing these natural resources and increasing income and effectiveness through sustainable uses of communal forests and pastures.

Programs for the protection and development of forests, pastures and natural resources of local importance are necessary to be prepared by communes and municipalities, as important functions in the framework of local economic development. A better organization of the forest extension service is required, in particular with regard to community forestry practices, as

well as coherent training of LGU employees, communal foresters, users' associations and forest service employees. The Penal Code should be revised, so that the prosecution and fines fit the economic and environmental damage caused in the forests, pastures or wildlife, while undertaking a continuous public awareness campaign.

Processing and marketing of products and services (economic and marketing rights): Provisions and incentives are needed for supporting the villages, users, and associations regarding:

- Production and deeper processing of value added products;
- Marketing of products from communal and state forests for economic support of poor areas, and for fulfilment of needs and providing income;
- Investigation of the possibility to support with programmes and soft credits the development of small industry of wood products in villages and for the establishment of workshops for furniture as well as stores for processing medicinal plants and secondary forest products;

Some special programmes should be developed for:

- Collecting, publishing and distributing regularly information on community forestry, and on markets and prices of wood and non-wood products;
- Supporting participation of CFPUA-s and producing companies in fairs;
- Marketing of forest products, especially the stimulation of export;
- Defining criteria and procedures of certification and helping communes and associations in the certification process.

Collection of tariffs and tax, and administration and reinvestment of the public and private funds: It is proposed that the rural family should not pay tariffs for the collection of timber and fuel wood, medicinal plants, lopping for fodder, grazing livestock and mowing in the communal forests, since traditionally they have not paid for such activities. Users and associations should receive compensation from the prohibitions on biodiversity protected areas and tourist and military zones situated within their territory, and they should gain income from economic activities in these areas. The legal framework should be completed regarding competencies, rights and obligations of the communes, users and their associations related to income and benefits from forests, pastures, medicinal plants, and hunting activities, as well as to administration and reinvestment of public and private funds in the sector. Functioning and financial responsibilities would be defined regarding communal forest and pasture resources, financial resources and their distribution and uses (separately for those of the communes and for those of the villages, families and associations) for reinvestment in this sector. LGU-s should issue acts on tariffs and fines for diverse activities in communal forests and pastures.

Financial and incentive instruments should be established for supporting the development of communal forests and pastures, as well as other natural resources in the rural areas. Provisions and incentives should be in place for supporting the users when they invest themselves, for the improvement of the degraded communal forest or pasture or replanting it. Also, the undivided agricultural land should be excluded from taxation until it enters into production, similar to fruit trees and vineyard cultivation, according to defined conditions.

The main laws should be improved and completed reflecting:

- Financial sources and their use for covering the expenses in communal forests and pastures;
- Users and associations should have the right to produce and sell wood and non-wood products on favourable conditions;
- Tariffs, fines and decisions on administrative contraventions should be determined and collected by LGU-s.

A main objective of the transfer is the establishment of trust to users by giving them formal documents that forest and pasture plots belong to them, as well as the profits deriving from their uses. At the same time it is necessary to develop the regulatory aspects of such policies that are interrelated to the transfer process. It should be understood that the transfer process has an important long term time dimension. It is not simply the transfer of a forest and pasture area under the use of villages and families but a *transfer of competencies and responsibilities* from the government (forest service) to the communes and local communities (villagers). It does not end with the formal transfer of forests and pastures for communal use. On the contrary, the formal transfer is only the basis for starting implementation of management plans, i.e. decentralization governance of these natural resources with strong participation of local people.

5. Conclusions

From the analysis of the legal framework on communal forests and pastures it is concluded that the improvement of many legal and sub-legal acts and other amendments are essential. It is thus proposed:

- the drafting of a new law on the transfer under ownership and the management of the communal forests and pastures;
- or the drafting of a new law on forests with three main chapters: (i) management of the forests under the ownership of the forest service; (ii) management of the forests under the ownership of communes or municipalities and the traditional users; and (iii) management of private forests.

For the transfer process to achieve the defined goals, improvement and completion of the legal framework are necessary in considering that the new developed communal forest and pasture sector should have a priority position in the national program of forests and pastures. This programme should be drafted as soon as possible and should propose: amendments in legal acts foreseeing the transfer of communal ownership of forests and pastures within their jurisdiction; legalization – return and recognition of the traditional property rights on forests and pastures for the villages (to have ownership over the natural resources) and families; revision of the criteria on forests and pastures transfer; management plans should be drafted and implemented at the village level. Parallel to the forest and pasture transfer a transfer of relevant specialists, funds, tools and the necessary equipments from the forest service to the commune should be considered. It is necessary to prepare studies that monitor the experience gained during the transfer process and with management of community forestry, and that analyse the results of dissemination of best practices through an extension service which has to be established soon. The improvement of legal acts will also have to consider the adaptation forest and pasture legislation to European developments and to recent trends in the world regarding the transfer of rights over forests from usage to ownership.

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Development of community forest management in Armenia

Leif Strömquist [*]

Background

Armenia's forest sector is since 2001 undergoing a rapid development supported by the World Bank, the European Union and several bilateral donors. At last year's Symposium in Armenia of this IUFRO Research Group 6.13.00, the Swedish funded Forest Institutional Support Project to Armenia (FISP) was presented. Among the outcomes from that project there are a revised Forest Code and a Regulation on Community Forest Management (CFM). The 2005 endorsed Forest Code has provisions for the implementation of non-state forest ownership, which the regulation on CFM will facilitate.

In order to support the development of a non-state forest sector in the country the Norwegian Ministry of Foreign Affairs (MoFA) decided to fund a program on Community Forest Management with a specific focus on reducing illegal logging and improving the local environment. A half year Pre-study was accomplished in 2006 - 2007 and the first year of the full program was finalised in May 2008. The forest sector responsible ministry in Armenia, the Ministry of Agriculture, was the beneficiary and the Norwegian Forestry Group was the lead consultant. The project activities focused on three selected pilot communities in northern Armenia (Lernapat, Margahovit and Koghb).

The program was implemented in a participatory work pattern. The project management was organised through a leadership of foreign experts supported by a so-called Local Expert Core Team - also including the project administration in Armenia - and additional foreign expertise. It has been envisaged to continue the Community Forest Management Project to Armenia during a second year; however, presently the final decision on funding is pending.

1. Community Forest Management Program to Armenia (CFMP-A)

The Program on Community Forest Management has the objective to support the development of a non-state forest sector in the country with a specific focus on reducing illegal logging and improving the local environment. It builds upon three institutional cornerstones for forest sector development, all recent products of the preceding Forest Institutional Support Project (FISP), which have been endorsed by the Government of Armenia and the Parliament of Armenia, respectively:

- The National Forest Policy
- The National Forest program
- The Forest Code

The revised Forest Code has provisions for implementation of non-state forest ownership in Armenia. The implementation of community forestry required the preparation of a *Community Forest Management Regulation (CFMR)*. A working group of FISP drafted the regulation, which in May 2006 was approved by the Government. The regulation (*Regulation on Handing over State Forests to Community Organisations for Accredited Forest Management without Tender*) provides for communities to conduct *Accredited Management of State Forests* for a period of 10 years and regulates the process for entering such management.

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2. The three Armenian Ways to achieve Community Forestry

In order to safeguard Armenia's limited forest resource there is consensus on that no privatisation of the State's forests in the present situation of the society shall be allowed. Furthermore, there is no recent historical tradition of private forest ownership in the country. Thus, restitution of previous forests is not a subject in Armenia. Therefore, the Government has decided to initiate the transfer of state forests without a tendering process to community organisations for the purpose of *Accredited Forest Management (AFM).*

The normal procedure will primarily be that an interested community's established business entity, *without a tendering process (1)*, will enter into an agreement with the State's authorized body on management of the surrounding present state forest lands for a 10 year period. These forests were in the Soviet times administrated by this community's sovchoz or kolkhoz, but are since the 1990es state owned and managed by the State's forest management entity, Hayantar (Armforest).

Additionally, there is the possibility for a community to *enter into a tendering process (2)* for management of other state forests than the forests managed by the community during the Soviet time; however, that procedure is not yet in place.

The third alternative to achieve community forestry is to *afforestate community owned farm land (3).* In this case the community will be both manager and owner of the land with forest. This "option" was opened through the recent revision of the Forest Code. In the old legislation, the State automatically, and without paying any compensation to the community, became the owner of the forest (not the land), when the community's afforestation was regarded secure.

The idea with the core alternative (1 above) for community forest management is to keep the State forest ownership for the forests on AFM at least for the coming decades, but through the communities' management increase the understanding for the values of sustainable forest management in the society and reduce the illegal, poverty driven, activities in the forests.

3. Project Achievements for Support of the Development

The Community Forest Management Project to Armenia (CFMP-A) emphasized its activities on the core alternative, the establishment without tender of Accredited Forest Management, and concentrated on three pilot communities in northern Armenia, which were selected by the Ministry of Agriculture already during the Pre-study the year before.

The project was based on a document describing the main outputs and detailed tasks. It was discussed with the appointed Local Experts in Armenia during the first Workshop. In order to facilitate the implementation of the Programme, the international team has provided further information to help clarify the detailed tasks. Additional amendments, based upon the current sector development in Armenia, were analysed and included. Minor changes were made to the detailed tasks - indicators and risks were analysed in view of ongoing simultaneous sector developments, in particular changes in forest legislation and institutional development, in an effort to make the jointly developed Log Frame as realistic as possible. The detailed activities of the first year's project are briefly described below as follows.

Contract template for accredited forest management: The draft template contract for accredited forest management (AFM) between Ministry of Agriculture and the community's established entity for AFM was further (from the Prestudy) developed together with new appendices completing the agreement. However, further clarifications appear necessary. The importance of human resources with approved qualifications on sustainable Forest

Management (SFM) and their ability to manage forests, which was raised in the Pre-study, was now addressed in the attachment to the template.

Other formal requirements necessary for a community's AFM: A community will have to establish a commercial entity (e.g. a Joint Stock Company or a limited company) for the AFM on the rented state forest fund lands. The community representatives from two pilot communities provided concrete proposals for organising their respective accredited forest management.

Proposal for a country specific training programme and extension system: The project's Working Group on Training Issues proposed a country specific training programme and extension system targeting for forestry specialists and forestry workers employed by community entities dealing with AFM. It is based on a multi stakeholder organisation involving state institutions and sector NGOs guided by a Board and a National coordinator. It is further proposed that in rural areas local course managers with educated trainers/instructors will provide the vocational training.

Elaboration of extension material: Five core subjects being important for initial short term training courses were identified and extension material was developed. The courses are:

- Afforestation and reforestation
- Pre-commercial and commercial thinnings
- Sustainable Forest Management
- Safe use of chainsaw and its maintenance; safety rules
- Secondary forest use (except for timber harvest)

Curriculum for the training course for the assigned accredited forest managers (forest professionals): The requirement of "appropriate professional capacities" of the Accredited Manager's forest professional resource was formally achieved during CFMP-A and finds correspondence in the identified courses and the proposed curricula. A number of training courses with corresponding curricula were proposed, emphasizing on the sustainability of forestry measures, biodiversity issues, mitigation of illegal logging activities, higher efficiency for use of wood, afforestation and reforestation, utilisation of non-wood forest products, and mechanisation of forestry activities for forest workers (e.g. use of chain saw and brush cutter).

Survey among community citizens concerning their views on community forest management: A survey was conducted among citizens in the three pilot communities with the purpose to better identify the expectations from and attitude towards community forest management, but also to disclose the human and technical resources and determine the strengths and weaknesses of the communities. 171 persons took part at the survey and 85 % of them expressed positive attitude towards CFM. Technical support was considered of high importance in all three communities (43 %). The overwhelming majority of respondents (98 %) consider the involvement of children in the CFM as positive and necessary. A majority (99 %) of the respondents believe that the community or its forest management entity should hire a professional forester.

4. Issues to be observed for continued Development of Community Forestry in Armenia

The provision of the revised Forest Code to possess an approved forest management plan (FMP) prior to allow any forest activities will need considerations on new projects' possible contribution to assist with the production of such plans. Due to non-sufficient cadastral preparations, the identification process of the previous kolkhoz forests has been considerably delayed, which at present hampers forestry measures to be accomplished in the pilot communities. None of the three selected pilot communities presently has a FMP for their previous kolkhoz and sovchoz forests, which they envisage to take on for rent from the state for accredited forest management. Twelve communities are waiting for their FMPs, presently under preparation. The current complexity of the relatively new Regulation on forest management planning will additionally provide difficulties for a rapid solution. In particular, the required size of the social assessment for the community and its envisaged forest management might cause delays and additional expenses.

The requirement on further new by-laws for forest management, which a year ago appeared to be a potential delaying factor, as a pre-condition for the start of forest management activities in communities, does not any longer seem to be a hampering factor. On the other hand, the further delay to finalise the envisaged Armenian Law on State Forest Service will most probably continue hampering the further general forest institutional development in the country, in particular as it will also affect the present state forest manager, the SNCO (State Non-Commercial Organisation) Hayantar. The establishment of the State's forest extension services will as well be postponed which might negatively influence the development of CFM.

The problem with different rate of implementation of project activities, based on a ToR/Log Frame requiring a strict work schedule within a limited period of time, along with a present relatively slow rate for forest institutional development in Armenia, might remain and negatively impact on a continued community forest management project. The Armenian beneficiary institutions have; however, shown a clear commitment to both the accomplished CFMP-A and a well-structured sector development, funded from State budget and donors.

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Biological Reproduction in forestry in Bosnia and Herzegovina - Practical issues of the forest law

Sabina Delić*

Abstract

This paper analyses the problem of financing the reproduction of forests in the Federation of Bosnia and Herzegovina according to the Forest Law currently in force. Former solutions in our practice were inadequate and the consequences are reflected in a constant decrease of the ratio of forest-biological work and deterioration of the overall conditions of the forest fund. According to the Federation Forest Law biological reproduction is divided into basic (fundamental) and extended. Its financing was defined in such a manner that a 15% share from the overall income for basic biological reproduction, and 3% for the extended reproduction is to be provided by companies having jurisdiction over a certain area of forest. The results of this study point at practical issues in financing the realization of silviculture and other activities of biological reproduction. These results are the consequence of various economic and business conditions of separate forestry companies and their financing possibilities.

Taking into account the significance of the forest resource and its multifunctional role, its preservation and advancement should be the interest and concern of the entire social community, and not only the concern of the forestry company that manages a certain area of state forests. It is therefore suggested to establish a common fund from which financial resources would be routed to cover the priorities. This would have a positive impact respecting the differences under diverse economic conditions and contributing to better use of the forest production potential. With the aim of sustainable forest management it would be necessary to provide an active contribution and participation of all forest product users in co-financing which in turn requires the development of appropriate legal provisions in this sphere.

Keywords: basic and extended biological reproduction, financing biological reproduction, forest law, Cantonal Forestry Management Company, sustainable forest management.

1. Introduction

Biological reproduction in forestry refers to all activities on silviculture and forest protection, as well as construction of forest roads. The forestry practice in B&H recognizes the division of biological reproduction to basic and extended. Although this division in terms of economy is not correct, from the aspect of financing it is acceptable. Nevertheless, future trends should be turned towards abandoning this artificial division, as forestry as a specific activity cannot draw a clear line between basic and extended reproduction. The forest is a renewable natural resource; in order to ensure continuous production it requires investing both efforts and funds.

The main specificities of forestry refer to the long-term production cycle causing a large time gap between investments and anticipated economic effects, as well as the lack of immediate economic motivation for directing funds into longer-term investments. Moreover, another important characteristic of forestry production is the uncertainty of natural conditions which makes investment and financing needs somewhat unpredictable. Decisions regarding financing of biological reproduction of forests made in B&H in the past were based on

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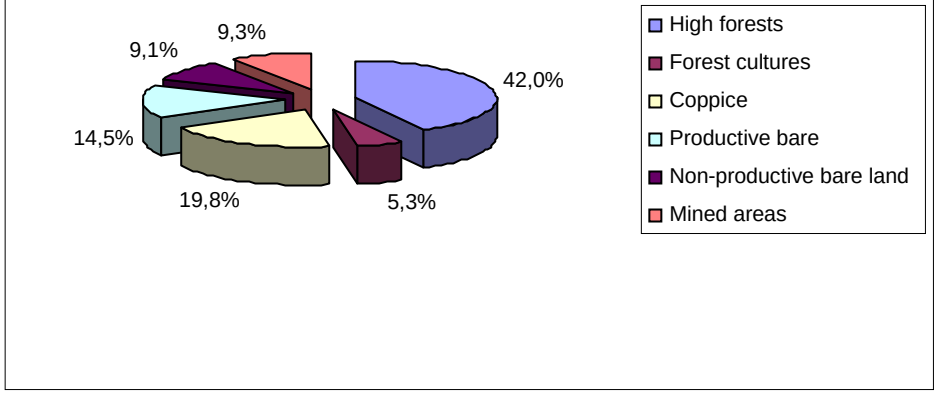
economic trends in society. Measures taken were habitually of an administrative character, and their implications on forestry, its economic strength and development, were often negative and irreversible. The consequences have been a constant decline of silvicultural works and deterioration of the overall state of forestry resources.

2. Research results

2.1 Basic information about forest resources in the Federation of B&H

Surface of forests and forestlands: The total area covered by forests in the Federation of B&H is 1.279.903 ha, divided into categories as shown in graph 1. The structure of forests and forestlands is characterized by a high percentage of coppice and potentially forested lands. It reflects the inadequate use of the production potentials of habitats. Another large problem is the mined areas that are, not only left out of the economic activities, but a great danger for the lives of people and health state of forests. Such a state of forest lands demands investments.

Graph 1. Forests and forestland structure in Federation of B&H



Growing stock, volume growth and felling quantity: Total growing stock in the Federation of B&H is 165,7 million m^3, out of which coniferous forests make about 41% and deciduous forests 49%. The average growing stock in high forests is 251 m^3 /ha, and coppice 73 m^3 /ha. Possible annual felling quantity (according to the Forest Management Plans) is 3,08 million m^3 or 3,6 m^3 /ha which is about 75% of the annual growth volume. Table 1 shows growing stock by forest categories, volume growth and felling quantity, total and per ha.

Achieved forest assortment production: In 2006, the total felling quantity in the Federation of B&H amounts to 2,59 million m^3. Coniferous forest exploitation rate is 75.5%, and deciduous 69.3%, so the total achieved production of forest assortment is 2,22 million m^3. Table 2 shows forest products assortment. Achieved coniferous forest product assortment is satisfactory, as logs and roundwood production makes over 80%. Only 31,6% of logs and 66,4% of fuelwood in deciduous forest production is certainly not satisfactory. This influences financial outputs directly and investing in biological reproduction indirectly.

Table 1: Growing stock, volume growth and felling quantity

	High forests				Coppice			Annual cut (total)	
	Growing stock		Volume growth	Felling quantity	Growing stock		Volume growth		
	000 m^3	m^3/ha	000 m^3	000 m^3	000 m^3	m^3/ha	000 m^3	000 m^3	m^3/ha
C	67794,0		2018,1	13261,0				1326,1	
D	79385,6		1806,1	15405,7	18544,8		572,7	1755,9	
T	147179,6	251,0	3824,2	28666,7	18544,8	73,2	572,7	3082,0	3,6

Source: FB&H Ministry of Agriculture, Water Resources Management and Forestry

C – coniferous; D – deciduous; T – total

Table 2: Assortment structure

Forest type	Assortment type	Quantity	
		m^3	%
Coniferous	Logs	743.361	74,27
	Other roundwood	66.987	6,69
	Pulpwood	186.516	18,64
	Fuelwood	3.969	0,40
	Total coniferous	1.000.833	100,00
Deciduous	Logs	381.329	31,35
	Other roundwood	3.131	0,26
	Pulpwood	24.250	1,99
	Fuelwood	807.790	66,40
	Total deciduous	1.216.500	100,00
Total	Grand total	2.217.333	

Accessibility and state of forest communications: The average accessibility of high forests in the Federation of B&H is about 8 km / 1.000 ha, which is way below the standards of developed European countries. In 2006, in the Federation of B&H, a total of 102,9 km of forest roads were built. This is considered insufficient as the accessibility is way below of what would be required. The results of earlier research show that this pattern of construction can lead to a minimum forest accessibility (12 km / 1.000 ha) in 20 and optimum (20 km / 1.000 ha) in 64 years (Delić, 2006.). Having in mind the importance of forest accessibility from the aspect of uniform exploitation of felling quantity, as well as forest cultivation and protection, this issue needs to be solved in an adequate fashion.

Silvicultural works: Silvicultural works are closely linked to the provision of funds. The forestry practice in Bosnia and Herzegovina in the past was specific for frequent changes of legislation regulating financing of forest cultivation. Investing into biological reproduction is directly related to legislation and defined financing models. This is illustrated by data on average forestation at the time when different legislative frameworks were in power, see table 3, with an average annual forestation ratio of 1:4,8. In the period 1996-2002 there was a gap in forestry legislation which had negative implications on this field. Administrative fragmentation of B&H and forests, inexistence of a uniform forest policy and strategy at state level meeting local interests, and lack of uniform law enforcement methods are just some of the reasons why the situation in this field is below standard.

Table 3: Average annual forestation rate in different periods

Legislation in power	Biological reproduction financing sources	Annual average forested area (in ha)	Index
1948-1960	Forest tax	4.125	100,0
1961-1965	Depreciation for forest regeneration	2.782	67,4
1966-1974	Forest depreciation	1 806	43,8
1975-1978	Contribution from total revenues and linking volume of works with the felling quantity	6.597	159,9
1979-1990	Contribution from total revenue and extended biological reproduction program	8.532	206,8
2002-2006[1]	Contribution from total revenue for simple and extended reproduction	2.148	52,1

2.2. Financing biological reproduction according to the F B&H Forest Law

FB&H Forest Law, passed in 2002, regulates the preservation and protection of forests, ecological functions strengthening, forestry planning and forest management, economic functions, financing regeneration and development of forests in the Federation of B&H, as well as other forest management issues. The legal entity founded with the goal to manage certain segments of state owned forests is the Cantonal Forestry Management Company (CFMC). One CFMC can cover one or more forest management areas within one canton. These CFMC have the obligation to set aside funds for simple and extended biological reproduction of forests.

Funds for the simple biological reproduction of forests are provided by the cantonal forest management companies by setting aside a minimum of 15% of total revenues made from selling wood assortments and value of wood used for their own purposes, as well as the revenues made from selling wood by-products. Such funds may be used only within one forest-economic region and cannot overflow to other objectives or segments of activities of the same forest-economic company.

There is a whole range of activities that need to be financed from simple biological reproduction funds, such as: making forest-economic framework, executive projects, preparation of grounds for natural regeneration, foresting areas after clear felling and fires, selection and marking of trees for cutting, cultivation and cleaning forest cultures and forests, protection of forests against plant diseases and pests, control of fires and illegal expropriation, production of seeds and seedlings, construction of forest roads, improvement of hunting, and other activities aimed at providing sustainable forest management (Forest Law, 2002).

Extended biological reproduction includes the reconstruction of degraded land and coppice forests, foresting bare lands and karst, and improvement of forest functions of general benefit. Cantonal forest management companies set aside 3% of their total revenues for this purpose. Moreover, all legal entities active in the Federation of B&H have the obligation to pay compensation for the use of the general benefits of forests to the amount of 0,1% of their total revenues.

The funds for extended biological reproduction (3% and 0,1%) are paid to specified-purpose accounts; precisely 20% of the total funds to the specified-purpose account of the Federation

[1] The data refer to the Federation of B-H. Average annual forestation in Republic Srpska is 1,461 ha. Country total is 3,609 ha, which is by 2.4 under the average from the previous period.

of B&H kept at the FB&H Administration (Federation Enhancement Fund), and 80% to the specified-purpose account of the canton kept at the Cantonal Administration (Cantonal Enhancement Forestry fund). The activities financed jointly from the specified-purpose account of the Federation of B&H and specified-purpose account of the respective canton are the following: foresting karst and bare lands, renewal of forests destroyed by the natural disasters, scientific researches. Other activities that may be financed from the specified-purpose funds are the construction of forest roads for the needs of cultivation and protection activities, certain cultivation and protection measures, and nursery production.

The volume of works in the field of simple and extended reproduction is planned based on the forest-economic framework which, according to the Law, has to be in line with the Forestry Program of the Federation and Cantonal Forest Development Plans.

The Forestry Program of the Federation defines forest policy in the Federation of B&H and is focused on the forest preservation and maintaining continuity of forest management including preservation and improvement of forest biodiversity and in line with international agreements and obligations. The general part of the Program defines main goals, principles and general guidelines for permanent forest management in a longer term perspective. The general parts of the entity programs need to be harmonized on the state level within a program that will define the standards for permanent forest management and be used for the certification of B&H forest resources. The other part of the program is the executive section, setting and defining objectives and their implementation, including financing.

Cantonal Forest Development Plans contain general guidelines from the Federation Forestry Program and relate to guidelines for natural and cultural heritage management, water management, ant to conditions for maintaining other forest functions. Cantonal Forest Development Plans are drafted based on the data from the forest-economic framework.

2.3 The Law – practical implementation and pitfalls – current situation

Long-term programs and objectives in the field of forestry in general, and instruments to achieve them, need to be defined in a forest development strategy. However, Bosnia and Herzegovina still does not have a defined strategy or forest development vision. The definition of the forest policy should start with the elementary functions that the forest has. By a precisely defined strategic approach to the development of forestry it is possible to achieve an optimal balance of environmental, social and economic requirements that society has for the forest (Sabadi, 1992). In order to achieve these conditions it is necessary to define relevant measures and instruments for their implementation. One of the main instruments of forest policy is legislation, i.e. legal instruments for forest policy objectives implementation.

According to the prevailing Forest Law, forest management in the Federation of Bosnia and Herzegovina is to be based on Forest Management Plans which should be in line with the FB&H Forestry Program respectively the Cantonal Forest Development Plans which, however, are unfortunately not yet in place. Consequently, forest companies coordinate their work plans with the available funds set aside from total revenues in meeting legal provisions. There has not been a single case in practice yet that more than 15%, i.e. 3% of the total revenues, have been allocated for this purpose. This indicates that the goal is to meet the legal minimum, not the actual needs. Therefore, there is a range of issues pointing out to the practice of planning unrelated to the actual needs for investments into biological reproduction which would provide sustainable forest resources management.

Research shows that the scope of planned forest cultivation works in the current legislative environment declined by 3,3 times in comparison to the previous period (Delić, 2006). This

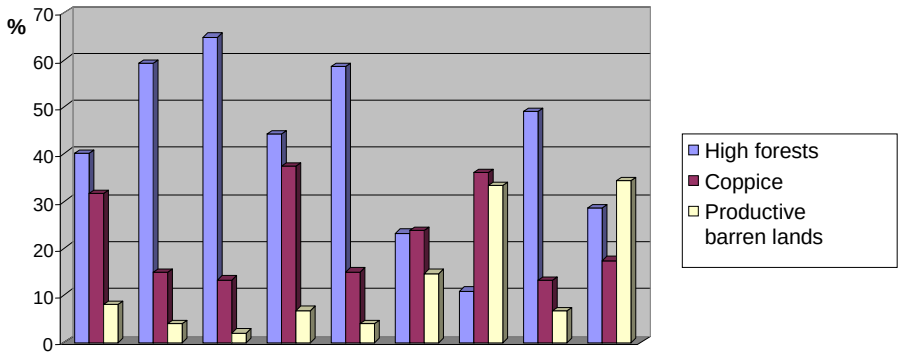
does not have justification if one assumes that the production potentials of the habitats are not adequately utilized on about 35% of the total area (coppice and productive bare lands). On the other hand, the increase of the demand for wood, both locally and globally, as well as the importance of forests for life on Earth, emphasize the need to forest bare lands and to transform coppice into high, economically valuable forests. All this requires finding the necessary financial means. With the actual pace of forestation, such an objective is not feasible in the near future. On the contrary, constant decrease of the growing stock for the past forty years and current plans for biological reproduction based on the financial situation of the companies and not the actual needs, in line with the management objectives, will certainly lead to a more drastic deterioration of forests.

In forestry, economic and natural conditions are very heterogeneous, leading to a whole range of possibilities to realize total revenues of a forest company. This has direct implications on financing the needs for biological reproduction in accordance with the Law. Forestry management companies that manage economically valuable forests make significant profit from forest products. At the same time, the need for investments into forestation and other cultivation works is not that prominent, as natural regeneration works extremely well. On the other hand, forest companies that manage weaker forests have greater needs to invest into biological reproduction and lesser income. This illustrates the difference of the conditions for economic activities that are not taken into account in solving biological reproduction issues in accordance with the relevant legislation.

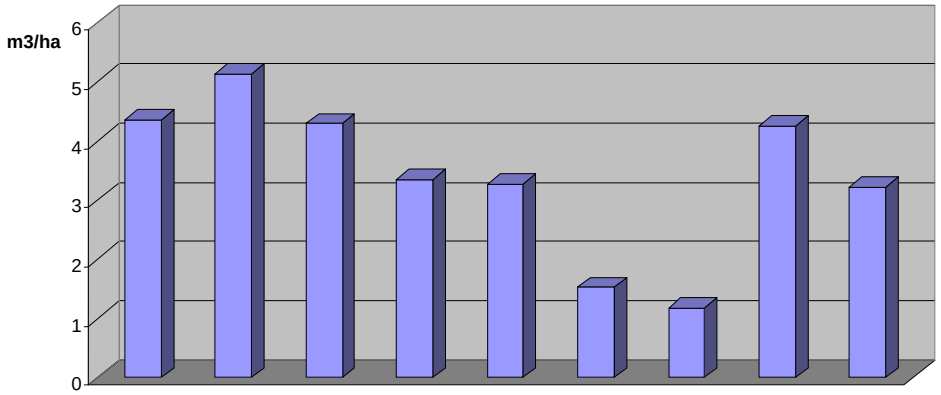
Graph 2 shows the percentage of high forests, coppice and potentially forested bare lands managed by different Cantonal Forestry Management Companies. High forests make up from 10,9% to 64,9%. Differences between the wood production potentials are drastic. On the other hand, participation of coppice and productive bare lands varies from 15,3% to 69,2%. This analysis reinforces the statement given in the previous paragraph on the unequal position of Forestry Management Companies. Growing stock, volume growth and felling quantity are in line with the structure of forest categories in different cantonal companies. A real indicator of the material foundation for work is the felling quantity by measure unit (graph 3). By comparing the felling quantity per ha of surface it is made on, differences become apparent; from 1,17 m^3/ha to 5,13 m^3/ha.

This analysis shows the differences in the revenue-creation potentials which influence the economic strength of the respective company to meet its obligations. The level of its revenues, and consequently the amount allocated to biological reproduction, ultimately depends on the quality of cut wood which is directly linked to the assortment structure. Graph 4 and 5 show the relative part of assortments in the felling quantity of each forestry management company.

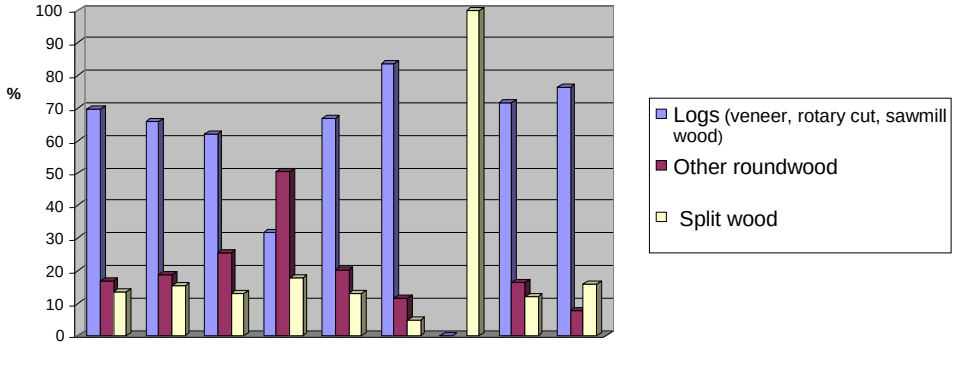
Graph 2. Presence of certain categories of forests in different Forest Management Companies (%)

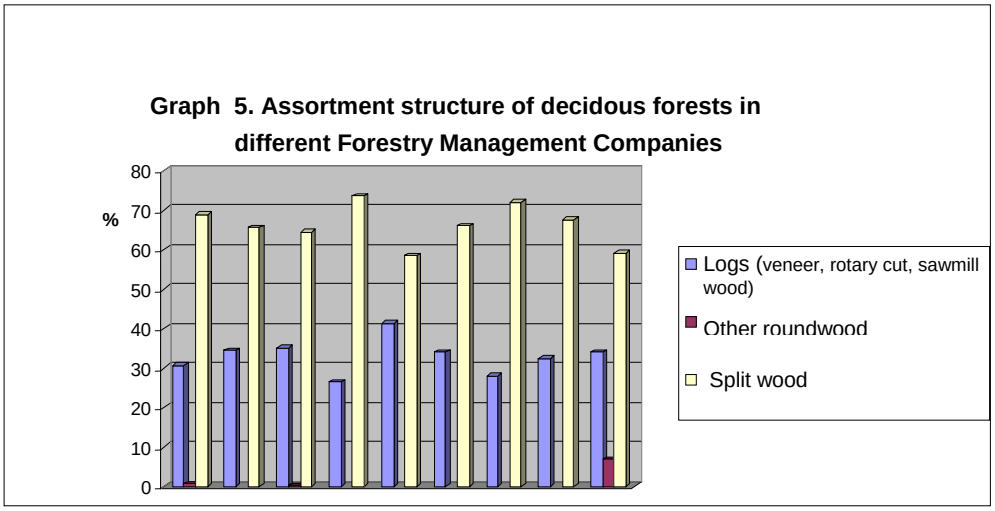


Graph 3. Total annual cut per unit of surface (m^3/ha) in different Forestry Management Companies



Graph 4. Assortment structure of coniferous forests in different Forestry Management Companies





3. Conclusions with recommendations

Forests today face a whole range of demands of society, above all providing for a sustainable forest resource management. This implies a treatment of this natural resource that enables its preservation for future generations. It requires maintaining the level of simple reproduction of forests with the long term goal to improve the state of this natural resource. At present in Bosnia and Herzegovina management is done in small areas without defined strategies and set objectives. While planning their biological investments, the companies stick to the provisions of the laws allocating funds for biological investments in amounts that are set a priori. The volume of works, therefore, depends on the funds available and not on the actual realistic needs. Analysis shows that the needs covered are not the actual needs.

The Law puts the care of planning and financing biological reproduction into the hands of the Forestry Management Companies that have no economic interest in higher investments into the biological reproduction, especially in extended reproduction. According to Article 1 of the Law "forests and forest lands, as a property of public interest, enjoy special care and protection of the Federation and the cantons…" Ergo, the obligation of the owner of forests and forest lands (state, entities) is to take care of their property. Therefore, the urgent need for development of a strategy and a long term forest development program for B&H, setting realistic objectives and plans for implementation becomes an emergency.

Planning financial investments in the field of forestry should be based upon the interests of the state in maintaining and improving this natural resource, especially with regard to the preservation of natural high forests. The overall community and all users of this resource, direct or indirect ones, should be involved in solving the financing problem, especially regarding extended reproduction of forests. Relevant legislation should be in place providing an active contribution and participation of all users of forests. Industries that lean on wood processing (primary, final, chemical) should have considerable interest increasing their capacities. Users that have direct benefits from the forests, besides wood processing industries, are agriculture, water resources management, electric power production, as well as organizations active in sports, recreation and tourism. The benefits they have from the forests should be economically valued and financial funds allocated to forest management and extended reproduction.

Air polluters (coal power plants, chemical factories, vehicles, etc.) should pay tax, as in some European countries, which would be used to finance raising new forests as assimilators of harmful gases which cause global pollution.

Given all the above, we recommend establishing a foundation that would be financed by payments of all users of forest resources and by the forestry management companies based on extended reproduction. Such funds would be distributed based on actual needs and in accordance with the established long-term development objectives. In this was the discrepancy of the natural conditions in which forests are managed in different parts of the country would be alleviated. At the same time better results could be achieved in using the production capacities of forests in the Federation of Bosnia and Herzegovina and countrywide.

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The impact of establishing High Conservation Value Forest (HCVF) on forest policy in Bosnia and Herzegovina

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Abstract

This paper looks at how adaptation of High Conservation Value Forest (HCVF) manual to Bosnian particular forest and social conditions has allowed national practitioners to implement better the national law on forest by being able to clearly identify protection forests. It reflects on the benefits this manual brought to civil society participation in decision making process of identifying protection forests which could have an impact on their livelihood.

1. Introduction

Despite its value to humanity, over 50 per cent of the world's original forest cover has disappeared and forests continue to be lost at a rate of 9-16 million ha/year (FAO, 2002). At the same time, the quality of much of the remaining forest is declining rapidly. Without significant changes in policy and practice, the process of forest conversion and forest degradation will continue at an alarming rate and pose a major threat. This will have serious socio-economic consequences for the livelihoods of forest dependant peoples, fauna and flora, it will affect security through disruption of water balances and soil degradation, and it will also have impacts at a global scale, through climate change, loss of potential medicinal products, and loss of options for future generations.

Protection of forest in Bosnia and Herzegovina was done according to the national law on protected areas and the law on forests. These laws had two versions, one for each entity. The division in entities was done following the Dayton agreement. For the Republic of Srpska the protection of forest is done at entity level but for the Federation of Bosnia the protection has been devolved to canton level which makes it more difficult to control. During 2006-07 a World Bank project has sponsored Bosnia and Herzegovina to adapt the generic manual of High Conservation Value Forest developed by ProForest to national conditions.

2. Bosnian forests

More than 45 per cent of the surface of Bosnia and Herzegovina (BiH) is covered by forest, and in some areas the share is over 90 per cent. BiH covers three globally significant ecosystems identified by WWF's Global 2000 programme: the European - Mediterranean Montane Mixed Forests; Mediterranean Forests, Woodlands and Scrubs; and Balkan Rivers and Streams. BiH hosts globally important sites identified under different programmes: Ramsar sites (e.g. Hutovo Blato which is also an important bird area); relatively undisturbed virgin forests like Perucica (an UNESCO site), and the forest preserves of Janj and Lom. Its rich biodiversity includes over 5,000 confirmed taxa of vascular flora, 450 of which are only endemic to BiH. BiH's forest resources are among the richest in Europe, with a wide variety of coniferous and deciduous species in largely intact and undisturbed ecosystems. Its large blocks of forests maintain ecological integrity; river dynamics; large carnivore dispersion between Central and South-East Europe.

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The forestry and timber industries have been important economic factors in the region for many years. But much of the unique biodiversity value of the BiH forest resource is in danger of being lost due to improper management practices. This loss would inevitably result in a reduction in livelihood options, particularly for the rural population. A number of endemic species important for European biodiversity (such as *Picea omorica* Panc, or fauna such as *Felis sylvestris*) are found in the Federation and Republic of Srpcka (RS) forests and are not officially protected despite their presence in the IUCN Red List of endangered species or their mention in the European Biodiversity Act.

The forest resources are perceived mainly as a source of firewood and income (primarily through higher value forest products). At state level wood, along with electricity, is the main export commodity. BiH has developed a reputation over the last decade of rampant illegal logging, owing to the post-conflict situation. This is now largely reduced, but due to the prevailing social conditions it is equally important to look at economic information covering forest dependency, and creating tangible biodiversity value awareness with the purpose of influencing owner decision criteria.

3. The HCVF concept

High Conservation Value Forests (HCVFs) are defined by the Forest Stewardship Council (Judd et al, 2003) as forests of outstanding and critical importance due to their high environmental, socio-economic, biodiversity or landscape values. HCVFs comprise crucial forest areas and values that need to be maintained or enhanced in a landscape. Although originally designed as a tool to help certification, the HCVF concept is being extended to more general conservation planning including the design of representative networks of protected areas and buffer zones.

The identification of HCVFs requires a multi-scale approach. First a rapid assessment and mapping of potential HCVF areas is made at a global or continental scale, based on indicators of biologically or environmentally important forest values that can be mapped at this broad scale. Next, these areas are further refined within eco-regions and a more detailed investigation within a given landscape delineates actual HCVFs, including local stakeholder consultation to identify forests meeting community needs and maintaining cultural identity, and scientific research identifying biologically important forest stands and those critical for maintaining ecosystem functions and populations of endangered species.

HCVFs are those that possess one or more of the following attributes:

- Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia);
- Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, in which viable populations of most, if not all, naturally occurring species exist in natural patterns of distribution or abundance;
- Forest areas that are in or contain rare, threatened or endangered ecosystems;
- Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control);
- Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health);
- Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

A practical way of beginning to assess whether a forest may or may not be of high conservation value is to use the Protected Areas categories developed by IUCN (The World Conservation Union). Whilst not exclusively developed for forest assessment, the key headings indicate the type of conditions likely to qualify as HCVF and therefore worthy of further investigation. If the category headings below describe a forest sources, this may be an HCVF.

IUCN defines a protected area as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means. Under the IUCN definitions, the objective of protection must be the maintenance of biodiversity and natural resources, and there must be an explicit legal or social basis for protection activities. Protected Area Categories according to IUCN (Anon, 1994) are as follows:

- CATEGORY Ia: Strict Nature Reserve: protected area managed mainly for science;
- CATEGORY Ib: Wilderness Area: protected area managed mainly for wilderness protection;
- CATEGORY II: National Park: protected area managed mainly for ecosystem protection and recreation;
- CATEGORY III: Natural Monument: protected area managed mainly for conservation of specific natural features;
- CATEGORY IV: Habitat/Species Management Area: protected area managed mainly for conservation through management intervention;
- CATEGORY V: Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation;
- CATEGORY VI: Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems.

Stakeholders' awareness about the HCVF concept was generally low. The limited knowledge about the concept was compounded by stakeholder-specific interpretations of the definition of HCVF and associated forest management requirements and practices. Local forest enterprises tended to see HCVF as a new name for an old practice. The Law on Forest has long required that they set aside portions of their forest for conservation purposes, though they have often not done so. They claimed they have long been protecting environmentally sensitive areas in their areas and they say these areas are HCVF.

Among those who know least about HCVF were local government agencies and NGOs. The lack of understanding of this issue results in unnecessarily suspicious responses. Many government officials felt somewhat excluded or bypassed by activities pertaining to establishing HCVF. It was important to explain and demonstrate that HCVF initiatives do not compromise equity issues.

4. High Conservation Value Forest in the context of Bosnia and Herzegovina

As is has been developed by the FSC, the HCVF concept included values and perspectives that are not incorporated into the definition of "old growth" or "endangered" forests that have been used by conservation organizations until today. Accordingly with the FSC definition, HCVFs occur in all types of forest (boreal, temperate and tropical) and eco-regions. They are also present in all social settings, not just in relation to indigenous peoples. Following this approach a forest could be defined HCVF on social grounds; this could become a powerful tool for promoting public participation in forest and land use planning and natural resources management.

As developed by the FSC, the definition gives emphasis to local knowledge, local needs and local values to be assessed with the involvement of local communities in the consultation process through the use of local languages. There are several interesting elements that, individually or together, characterize the process of identification of an HCVF. Among them some deserve to be outlined because of particular circumstances met in Bosnia and Herzegovina:

- The presence of communities that practice traditional subsistence;
- The lack of mechanisms for conflict resolution;
- The presence of shrines, sacred sites or visible archaeological ruins.

At first reading, the HCVF concept is very welcome because it embraces social, ecological and biodiversity considerations. However, actually applying this concept as a safeguard, as opposed to a Good Practice objective, had the potential to be very problematic because:

- It is a novel concept which has not yet gained widespread international endorsement.
- Workable methodologies, acceptable to all interest groups, for determining which areas are HCVFs have not yet been tried out in the field.
- It implies a very expensive and time-consuming process.
- It is not a concept that will be readily understood by non-experts.

The concept of HCVF has been elaborated principally by those with a forestry project perspective, without due consideration of the difficulties of applying the concept to operations affecting forests, which is what the safeguard approach requires if it is to be effective.

What Bosnia and Herzegovina has done was to further adjust the national manual to local conditions. The HCVF was used to commonly nominate and define protected areas within the forest. The concept was not imposed on Local Forest Enterprises (LFEs), was down to them to decide if they had a need for it and to really assess which forests have such values. By proceeding in this way the LFEs made sure that no serious social and environmental damage occur. Because the HCVF definitions were agreed nationally and at entity level the implementation policy was easy to apply.

The notion of HCVF has become a powerful tool for promoting public participation in land use planning and natural resource management. It gave emphasis to local knowledge, local needs and local values to be assessed through the involvement of local people in local consultations using local languages. As such, it promoted socially appropriate forest management at the level of the landscape or forest management unit. The concept was well adapted to macro level decision-making about forests, by employment of a great deal of local consultation on zoning and mapping. The concept of HCVF has helped the country with the certification process by going a step forward towards certifiers assessing forest management at the level of the individual Forest Management Unit (FMU).

5. Srebrenica region case study

In the frame of the UNDP project for the Srebrenica Regional Recovery Programme Activity entitled ‘Provision of Forestry and Wood-Processing Technical Assistance’ HCVFs were identified. This area is host of the endemic species Picea omorica Panc. Historic and current development rates in the region raise questions, however, about the future conservation value of these forest ecosystems. Thus, this project looked at mapping those sites as high conservation value forests (HCVF) to aid conservation strategies and to update information on these species habitat.

In mapping HCVF in the Srebrenica Region the focus was put on identifying forests important for the preservation of biodiversity, and water and soil sources. To a large extent, animal biodiversity would also be represented within these forest communities. Although this assumption might not hold true in each case, especially for large, mobile animal species, the survival of many animals depends on preserving natural vegetation and vegetation habitats. It was considered of importance for the region watershed protection and erosion control as well as cultural and social values.

The total area of HCVF identified comprised 3,600 hectares, or 5.1 % of the region's area. The total area of forest communities with Picea omorica was found to be almost 20 hectares. The following categories/subcategories of HCVF were identified as relevant for the investigated region:

- HCV 1.3. Endemic species – This sub-category includes areas covered by endemic species. (Picea omorica Panc).
- HCV 3 Forest areas that are in or contain rare, threatened or endangered ecosystems – especially in the poorly accessible areas (Kanjon Crnog Potoka and Kanjon Gorni Jadar) - and (Fagus moesiaca, Picea abies).
- HCV 4.1. Forest important for water supply (Grni Guber).
- HCV 4.2. Forest critical to erosion control – This sub-category includes areas covered by forest and steeper than 40 degrees (Kanjon Cpnog Potoka and Kanjon Gorni Jadar).
- HCV 6. Forest areas critical for the traditional cultural identity of local communities – This category might include some forests in the vicinity of a couple of monasteries and fortresses.

Map of Bosnia and Herzegovina (*Srebrenica Region)

The results of this analysis were converted in recommendations for policy decisions on deciding areas for protection. Areas identified here required additional measures to activity on them, and the work results were integrated into forest inventory and planning materials.

6. HCVF impact on the Law of Forest of Bosnia and Herzegovina:

The main benefit was a clear national understanding of what was meant by protected forests. Also the policy addressed to following aspects

- It identified negative impacts in forests defined as HCVF.
- Protected forests as defined by the HCVF principle were established with demonstrable public acceptance, through inclusive and open processes of participation.
- Policy wins (adoption by key players) lead to management and maintenance of HCVF.
- Explicit public commitment from the local authorities to good management of HCVF will result in better management of HCVF.
- Harvesting companies and processing companies that maintain HCVFs were able to continue their operation on those sites.

In Bosnia and Herzegovina the HCVF has not been applied mostly to protected areas, but to all forest sites. HCVF has enforced the demarcation and documentation of high conservation values through recommendation in management and clear a demarcation of sites on management maps.

7. Conclusion

Forest policy has imbedded the HCVF concept in defining through a common denomination the meaning of protected forests as potential HCVF forests. Bosnia and Herzegovina has a new forest policy in each entity which uniquely provides better safeguards both for the environment and for companies who use it. Potential investors in the forest sector, as well as existing international players who own companies here will benefit from this new policy and legislation because it provides important safeguards and a series of guidelines for ensuring that their operations do not provide risks both to their reputation or their bottom line.

Consensus on the definition of HCVF is expanding among civil society and business. Next regulations are needed to incorporate the concept of HCVF into regional spatial planning. A challenge to the establishment of HCVF in existing forest areas are the financial costs incurred by forestry companies as a result of reduced timber harvest from the HCVF area. This presents a significant challenge to the establishment of HCVFs.

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Law on Hunting 2006 in the Federation of Bosnia and Herzegovina

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Abstract

The new Federal Law on Hunting has been passed in the beginning of 2006. and is being implemented in the Federation of B&H. The Law on Hunting of SR B&H from 1977 was effective before the new legislation came into the force. So far, the responsible authority at the Federal level (the Ministry of Agriculture, Water Management and Forestry) passed seven decrees (so called Rulebooks) that have been published in the Official Gazette of FB&H. With the new Law and the Rulebooks the Federal hunting legislation offers a new approach in game management introducing concessions for hunting districts, more strict rules considering potential game managers, protection measures, management plans, education of hunters, and use of firearms.

Keywords**:** law on hunting, hunting districts, rulebooks, hunting associations, concessions, management plans.

1. Introduction

Bosnia and Herzegovina is well known for a wide range of natural diversity caused by geographical location, various parent rocks, altitudes ranging from sea level to 2386 m, and different climate and soil processes. Forests cover roughly 50% of the territory and create favourable conditions for the development of many different plant communities. They provide space for survival, reproduction and successful development of numerous animal species, even in very small areas. They represent diversified habitats for many game species which, besides long-term anthropogenic impacts, the primordial living conditions have not changed much and are favourable for the autochthonous game species. The fact that current conditions of their populations are not at the level of the actual biotic possibilities is a consequence of unplanned human interventions during the past decades.

The key instrument of hunting policy at the national level is the hunting law which needs to be harmonized with changing demands of the society towards hunting and appropriate game management and nature conservation practices. Legislative changes should focus on improving mutual interactions between society and nature, and creating better understanding of biodiversity conservation importance in B&H. Besides, it is necessary to determine which activities and measures can prevent extinction of species and their habitats.

2. Law on Hunting

The Law on Hunting of the Federation of Bosnia-Herzegovina went to procedure in 2002. Due to numerous political difficulties, disagreements and obstacles it finally has been passed in the beginning of 2006. According to the new Law hunting represents a public activity and includes the following measures: protection and growing of game, hunting area planning, admitted hunting practices, and rational utilization of game and hunting areas. The law contributes to biodiversity conservation, ecosystem management, and maintaining an ecological balance in natural game habitats. Although similar to the previous legislation in

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several aspects, the Federal Law on Hunting 2006 has introduced some significant changes in its main provisions.

The structure and content of the new law is as follows:

- Article 2 – This Article defines the main terms used in hunting respectively in the law (game, hunting rights, hunting district, hunting management plans, trophies, hunting, etc.);
- Article 3 regulates ownership rights and rights of game utilization;
- Articles 4 and 5 regulate the purpose of classification of hunting districts and define the term of game hunting;
- Articles 6 and 7 regulate the classification of land that is not considered as the hunting district and the obligation of people to protect game in such areas;
- Articles 8 to 10 regulate the conditions for hunting district management, the rights of game utilization, and hunting practices rights;
- Articles 11 and 12 regulate the organization and activities of hunting associations;
- Article 13 classifies game by a scientific classification;
- Article 14 regulates measures for raising and protection of game;
- Articles 15 to 18 list and categorize game by type of protection status;
- Articles 19 to 24 determine protection measures against game and at game in outstanding circumstances;
- Article 26 regulates the conditions for the introduction of new game species;
- Article 31 determines conditions and jurisdictions for the establishment of certain types of hunting districts;
- Article 33 provides a classification of different categories of hunting districts (lowland, hilly and mountainous);
- Article 34 regulates types of hunting districts (open and enclosed hunting districts and game farms);
- Articles 36 to 43 regulate the conditions, rights and procedures for awarding hunting districts for utilization;
- Articles 45 to 51 specify the types and manner of planning in hunting districts, regulate the jurisdiction for approval of plans, and the obligation and annual records to be kept in hunting districts;
- Articles 52 to 63 determine the manner and conditions of game hunting;
- Articles 64 to 67 regulate the term, manner and procedure for registration and valuation of game trophies;
- Articles 68 to 74 provide for preventive measures for protection, the responsibility for preventing damage against game and to game, and for procedures and responsibilities for compensation of damage;
- Articles 75 to 78 regulate the establishment of a game warden service, and conditions, duties and rights of game wardens;

- Articles 79 to 81 determine duties and rights of inspection with regard to implementation of the Law;
- Articles 82 to 86 regulate the type and amount of penal provisions in case of law violation;
- Articles 87 to 90 determine the procedure and time of harmonization of the existing conditions with the current Law. Game managers in Federation of Bosnia-Herzegovina are obligated to adjust all their activities to new legislation within one year from the publishing of the new law.

3. Rule Books

After passing and publishing the Law on Hunting 2006, the general conclusion was that there is a transitional legal period in the Federation of Bosnia and Herzegovina. A group of rulebooks needs to be passed that are necessary for a complete understanding and implementation of the law. These rulebooks are defined in Article 90 saying that the Federal Minister will regulate the following subjects:

- Temporary ban of hunting, Article 18 (3);
- Closed hunting seasons, Article 24 (1);
- Conditions of game management in hunting districts, Article 38 (2);
- Methods of establishing hunting districts, defining and marking their borders, Article 41 (2);
- Content and documentation of the hunting district cadastre, Article 44 (4);
- Activity records in hunting districts, Article 50 (4);
- Use of firearms and ammunitions, Article 54 (6);
- Program, admission conditions and ways for making hunting examination, training of enrolling hunters, and permanent education obligations, Article 55 (3);
- Program of falconry examination and ways of game hunting with birds of prey, Article 57 (8);
- Race and necessary number of hunting dogs for hunting certain game species in specified hunting districts, Article 58 (3);
- Pricelist for delivering game and other services, Article 62 (6):
- Forms and licences for marking game origin and utilization of game meat and other parts Article 63 (3);
- Trophy categories and ways of issuing certified forms, Article 66;
- Compensation pricelist in case of poaching and other illegal activities in hunting districts, Article 72 (2):
- Form and content of official documents(notebook, confirmation, etc) for game wardens, their uniform and legitimating external signs, conditions for carrying firearms and size of districts for game wardens, Article 75 (6) and Article 77 (1):
- Form and content of management plans (yearly and for 10 years), responsible persons for their preparation, approval and implementation;

- Conditions for potential game managers obtaining and using hunting district.

So far at the Federal level the Ministry of Agriculture, Water Management and Forestry has passed *ten Rulebooks* published in the Official Gazette of FB&H which cover the following subjects:

Closed season: A significant change in the rulebook determining closed seasons is that for first time in the history of Bosnia-Herzegovina wolf is not treated anymore as a "pest". Now the wolf has the status of a game species which is protected by a closed season. Wild boars changed status from unprotected game species to game now protected by closed season. The rulebook defines as well strictly protected animal species for which no hunting season exists.

Methods of establishing hunting districts, and defining and marking their borders: This completely new rulebook puts cantonal ministries in charge of forming a Commission for establishing hunting districts within the cantonal territory. Members of the commission are experts for wildlife preservation and hunting (with at least B.Sc. of Forestry) and the stakeholders. The commission is obligated to consider habitat conditions, nutrition and water conditions, cover and space for determined game species, previous positive experiences, and the prevailing stakeholder interests. The commission makes proposals to the Cantonal Parliament for approving of proposals and establishing of hunting districts.

Content and evidence in hunting district cadastre: Hunting district cadastres are now adjusted to the CORINE Land use classification, considering types of land in certain hunting districts. Second part of cadastre is predicted for evidence of numbers and carrying capacity for main game species in hunting districts, and hunting infrastructure as well.

Use of firearms and ammunition: This new rulebook, for which no legal provision had existed previously, defines types of firearms and ammunition to be used for hunting certain game species. For the first time the use of buckshot for hunting wild boars is forbidden. The only allowed use of shotguns in hunting wild boars is with single bullet ammunition.

Program and conditions for making hunting examination and education of hunters: Based on terms defined in Law on Hunting the rulebook determines that the responsible authorities for organising hunting examinations are not anymore hunting councils but the Federal Ministry. The Minister forms a Commission for making hunting examinations and delivers a certificate according to unique form for the whole of the Federation of Bosnia-Herzegovina. The rulebook prescribes obligatory and permanent education of enrolling hunters and already confirmed hunters as well. The educational program is divided into theoretical and practical parts comprising most important issues about wildlife preservation and hunting. All hunting councils and associations in the Federation of Bosnia and Herzegovina are obligated to implement this program on a yearly basis.

Race and number of hunting dogs for hunting certain game species in defined hunting districts: New in this rulebook in relation to previous ones is the prohibition of using dogs for driven hunt after 05 January till 01 October in any current year. This decision is a significant measure in order to protect roe deer especially, because dogs disturb game in the very hard winter conditions. This leads to exhaustion, abortion, and death in many cases resulting in huge loses in roe deer populations. The Rulebook prescribes that all dogs must have pedigree and certificate of passed working trials in their category.

Forms and licenses marking game origin and for utilization of game meat and other parts: This again is a completely new rulebook created in order to control and reduce poaching and black market. It provides that every game manager has to issue a hunting license for every hunter or group of hunters and valid permit or bill for hunted or purchased game or its parts.

Accordingly, restaurants, stores, butchers, taxidermists, etc have to show a permit or bill to guests or to the authority in charge of inspection before distribution.

Trophy certificates and ways of issuing them: The Rulebook prescribes that every game manager has to issue trophy certificate for game species defined in Article 64 of the hunting law. Trophy forms are adjusted to the CIC Redbook and international rules for game trophies evaluation. Game managers form a commission for trophy evaluation and keep evidence of every issued trophy certificate.

Form and content of official documents (notebook, confirmations, etc) of game wardens, their uniforms and identification card, conditions for carrying firearms and size of region for game warden: This rulebook deals with the game warden. Its first part determines the necessary level of education for game wardens (high school in forestry, agriculture or veterinary), conditions for carrying firearms, obligations and duties of game wardens, as well as the maximal size of game warden districts (7.000 hectares). The second part of the rulebook prescribes the form of an identification card for game wardens, their uniform, the content and format of official documents, and the ways of how they are to be issued.

Protected Areas: In accordance with Article 17, paragraphs 2, 3 and 4, the Federal Ministry passed two decisions considering protected or so called „breeding areas"for Brown Bear and Chamois. Within such breeding areas game managers are obligated to manage those species according to specified criteria, including mutual inventory, harvest plans and other measures favouring these two game species. The Federal ministry is in charge of approval of yearly management plans in these protected areas.

4. Discussion and conclusion

New hunting legislation in Federation of B&H brings a new approach in game management, with significant changes in comparison to the previous legislation. The first change is minimal sufficient area for establishing and declaring some land as an "open" hunting district. Now, that area is at least 1000 hectares (2000 hectares in previous Law). This goes in favor of private landowners because at the same time the Law regulates that hunting districts can be established on private land property. It also provides for a possibility for two or more small landowners to join and establish a common hunting district.

The second important term is the change of the responsible authority for establishing hunting districts. Previously municipalities were in charge of establishing hunting districts and they gave them, in most cases, by contract to local hunting associations. In the former system, the municipalities were in charge of control and approval of all activities of local game manager activities. This lead in the past quite often to over exploitation of habitats and game favoured illegal activities. According to new Hunting Law the cantons took over this responsibility and the Cantonal Parliaments are in charge for establishing hunting districts within the canton territory, as well as they are competent for allocating them to game managers after public tender for certain hunting districts. The Cantonal ministries are in charge of approval of the yearly hunting management plans

Law regulates that in exceptional cases, considering especially valuable habitats with rare and endangered game species, the Federal government has the right establishing State or Special Hunting districts in these habitats without taking cantonal borders into account. This measure requires the previous agreement of the Cantonal Ministers for Agriculture, Water management and Forestry, of those cantons in which Special Hunting districts are to be established. In this case, the Federal government decides directly who will be the manager of a Special Hunting district.

The new Law provides that the user of a hunting district can be a hunting association, a Forestry enterprise and other subjects registered for Hunting. It prescribes that membership in hunting councils are not obligatory for game managers -previously this was main condition to have a right to get some hunting district for all hunting associations. In addition the Law leaves a possibility for establishing more hunting councils in Federation instead of only one; there are at present three hunting councils in Federation. In this way the law abolishes the post war monopoly held by only two councils that had existed in Sarajevo and Mostar.

Placing the Federal Ministry in charge for hunting exams, education, controlling and approving management plans, as well as for determining the conditions for potential game managers and unique pricelist (in procedure) for whole Federation, the new Law on Hunting shows greater care of the State authorities for the demands of society, and at the same time increased efforts to ensure the compatibility of the new legislation with international standards and conventions.

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Implementation of the law on forests of the Federation of Bosnia-Herzegovina - Experiences in forest protection through the Forest Guard Service

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Abstract

The Law on forest on the territory of the Federation of Bosnia-Herzegovina was adopted in 2002. The actual state regarding implementation shows that the law is not yet fully implemented on the whole territory. Omissions of implementation mainly refer to the aspect of forest protection through the Forest Guard Services within the cantonal administrations for forestry. Because of the specificity of the given subject, four cantons of the Federation have been chosen in which the degree of law implementation varies and the forest protection is accomplished in a particular manner. An analysis of the qualitative and quantitative form of forest protection during the period between 2003 and 2007 has been undertaken. It is based on a comparison of general indicators for the work of Forest Guard Services taking into account organizational aspects of the administration for forestry or the forest companies in each canton.

After the analysis has been carried out it can be stated that in cantons in which protection services were not conform with the cantonal administration for forestry, there were no significant differences in the work of forest guards. In cantons in which conformation of the protection service within the canton administration for forestry could be observed, particular results have been identified. The results reflect a constant decrease of the degree of unlawful logging, enforcement of the procedure of temporary confiscation of wood, and solving of problems of integral protection of forests and forest land with more purposefulness. The research results show that it is possible to fully implement the law, but it also shows that there is demand for some statutory corrective provisions, particularly with regard to defining the organizational aspects in the forestry sector. Based on the critical analysis and the insight of the existing degree of law implementation of the protection service, new modalities of organization in forestry at the Federal level are suggested.

Keywords**:** law on forests, protection of forests, Forest Guard Service, qualitative valorisation of Forest Guard Service, quantitative valorisation of Forest Guard Service.

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1. Introduction

The Law on forests 2002 of the Federation of Bosnia-Herzegovina (hereinafter B-H) provides the regulatory framework for preservation and protection of forest acknowledging its ecological and economic functions, and financing the renewal and enhancement of the forest resources. Beside this law, cantonal laws have been enacted which additionally regulate and define the domain of forestry depending on the prevailing specificities of the cantons. It can certainly be stated that the legal provisions of current forest legislation determining ownership of forests and forest land, as well as organizational aspects of forestry are the result of the current conformation of B-H at the entity and canton levels. With the Law 2002 new forestry institutions have been created i.e. the Federal Forestry Office and Cantonal Forestry Offices.

The Federal Forestry Office and Cantonal Forestry Offices are controlling public forests and forest land in accordance with current statutory provisions. The Federal ministry transmits management responsibilities over forests and forest land to cantonal administrations by contractual arrangements. The Cantonal ministries transmit management responsibilities over public forests and forest land by contract to cantonal forest companies, determining that only one company can be formed within the administrative boundaries of the canton. The Cantonal forestry administration is in charge of forest protection and conservation such as protective measures to be taken by the organized Forest Guard Service.

Analysing the implementation of the current Law on forest of the Federation of B-H, in particular regarding the sector of immediate forest protection, it can be affirmed that, even six years after the passing of the law, the law is not fully implemented on the whole territory of this entity. Considering this long period in which the implementation has not been accomplished it is only logical to ask two essential questions:

- Is it possible to implement the current Law in practical terms at all?
- If there is a possibility for implementation of the Law, why isn't it fully implemented on the whole territory of the Federation of B-H?

2. Research goal, research area and methodology

The goal of the work is an analysis of implementation of the Federal Law on forests stressing the realization of statutory provisions referring to immediate forest protection via the Forest Guard Service. To carry out the analysis those elements which directly or indirectly affect the complete perception of the given issue are taken into account based on qualitative and quantitative indicators referring to:

- Practical experiences with the implementation of statutory provisions related to immediate forest protection via an organized Forest Guard Service;
- The present situation and the causes for different levels of Law implementation;
- Substantial differences in forestry sectors at cantonal level caused by different levels of Law implementation;
- An analytical comment of the results with a suggestion about measures and modalities aiming at solving of the research issue.

As the research territory four cantons of the Federation of B-H are chosen: the Central-Bosnia Canton, Tuzla Canton, Zenica-Doboj Canton and Sarajevo Canton which differ in forest surface, demographic structure as well as To the perceptions of the population towards the forest. This approach is of a considerable interest for research activities addressing different levels of forest law implementation.

Some facts point out that in some cantons the Law on forests was fully implemented and the immediate forest protection via a Forest Guard Service was organized within the Cantonal Forestry Office (e.g. the Central-Bosnia Canton), while in other cantons this activity is on a different level of implementation or has different forms of work of the Forest Guard Service (e. g. Zenica-Doboj Canton and the Sarajevo Canton), or the Forest Guard Service is organised within cantonal forest companies (e.g. Tuzla Canton). The base indicators of the researched cantons regarding the surface of forests and forest land, stocking volume, increment and available annual cuts are shown in *Table 1 of the Annex.*

The methodological access to the problem is based on evaluating the positive and negative experience with law implementation combined with a critical analysis of activities of immediate forest protection. The perception of specific aspects is realized through work valorisation of the Forest Guard Service justifying its role and activities either within the cantonal administration for forestry or as part of cantonal forest companies. We find it indispensable to affirm that work valorisation of the Forest Guard Service, depending on its organizational status, needs to be done in the same or nearly the same work conditions for the forest guards. In practical terms this means considering identical relevant factors and objective circumstances which directly or indirectly affect and define the work conditions for the Forest Guard Service.

Factors that directly affect effectiveness and efficiency in the work of forest protection are the social-economic system, the functionality of the laws on public institutions and services, and the perception of society and its demands towards forests. It appears under the presently prevailing conditions in B-H that the perception of forests, from an economic, political and social point of view, is based on the acquisition of as many benefits as possible from the forest resources, mainly by using the wood biomass, irrespectively of a longer term sustainable management strategy for using this renewable natural resource.

3. Results

The 2002 Law on forests has defined a new organization in the field of forestry and in conformation of the Forest Guard Service within the cantonal forestry administrations the forest guards received the status of public employees. During the period between 2003 to 2007 identical work conditions for forest guards were represented objectively, regarding the social-economic circumstances, as well as the perception of the community towards forests, but this is also the period when implementation of the law took place. During the same period of time immediate forest protection existed through the Forest Guard Service, either within cantonal forest companies, or as part of the cantonal administration for forestry, or through other transitional forms and modalities of the conformation. It would have been objectless to make a comparison of the work of the Forest Guard Service under different socio-economic circumstances that influence efficiency in the work of other authorities that directly affect the conduct of immediate forest protection activities.

The *qualitative form of work valorisation* of immediate forest protection via an organized Forest Guard Service within cantonal forestry administration or within cantonal forest companies inter alia, can be documented by:

- the structure of accomplished activities and applied measures against illegalities in forestry;
- the accomplished activities and applied measures against illegalities in the wood industry;
- the realization of other activities in accordance with own competences.

Regarding the structure of activities and the taken measures for protection of forests it can be stated that a greater efficiency has been achieved in the work of the Forest Guard Service in case that it has been part of the cantonal forestry administration. This statement is based on the following two arguments:

- There is a purposeful identification of all illegalities that are currently present in forestry and the undertaken measures.
- As forest guards are public employees, the State as an owner can undertake the overall monitoring of all forests activities and conduct immediate protection of the natural resources.

The activities carried out in order to prevent illegalities in the wood industries are more purposefully realized under the conformation of the Forest Guard Service within the canton administration for forestry, considering the following arguments:

- Controls of the sawmill repositories and capacities, as well as activation of other authority institutions regarding the prevention of illegalities and the reporting of the ones responsible for the illegalities are possible.
- A more complex realization of the Action plan to combat illegal activities in the field of forestry and wood industry is possible.

In general, the higher level of realization of forest protection activities is achieved in cantons where the Forest Guard Service is part of the cantonal forestry administration. The given statement is based on the perception of the structure of reports on illegalities which have been submitted by the forest guards.

For the quantitative form of work valorisation of the Forest Guard Service there are several activity indicators for immediate forest protection and valorisation of the service. They can, inter alia, be documented by the amount of unlawful logged wood, the number of submitted reports on illegal activities, and the amount of temporary confiscated wood volume. It is possible to use the Central-Bosnia Canton as representative for work valorisation of the Forest Guard Service in quantitative form. In this Canton the Law on forestry has been implemented, and during the period for which the analysis has been carried out (2003-2007), the Forest Guard Service was conformed in both, the cantonal forest company (2003-2004) and the Cantonal Forest Office (since 2005).

The following statements can be made:

- The amount of unlawfully logged wood is constantly decreasing which is the result of the work of the Forest Guard Service organized within the canton administration for forestry and the engagement of other authority institutions and services (inspection, police etc.).
- The number of submitted reports is constantly decreasing since the Forest Guard Service is conformed within the canton administration for forestry. This points out on less amount of illegally logged wood.
- A significant indicator in the structure of the submitted reports is the increased number of contraventions which points to the fact that purposeful measures are undertaken with the goal of suppressing unlawful logging and organised crime.
- With the conformation of the Forest Guard Service within the canton administration for forestry, the amount of temporary confiscated wood has considerably increased indicating better monitoring and control of actions carried out by the Forest Guard Service.

The numeric indicators of realization of the indicated activities, according to available information in the Cantons of the research area, are show in *Table 2 of the Annex.*

4. Conclusive contemplation

The possibility for implementation of the current Law on forest exists because the same law is completely and in all segments implemented in the Central-Bosnia Canton. In the field of immediate forest protection this law proved to be efficient through the conformation of the Forest Guard Service within the cantonal administration for forestry. The results of different levels of implementation in other cantons of the Federation of B-H indicate that it is possible to implement the law, too.

Reasons for the absence of implementation of the law can be identified as follows:

- Lack of enough political will and expert knowledge about forestry ownership, administration, management and protection of this specific natural resource on the side of the authorities for the implementation;
- Conformation of cantonal administration for forestry within the cantonal ministries that attempt to decrease the number of the " budget customers" at any rate, as the conformation of Forest Guard Service within the cantonal administration for forestry appears to represent "a serious strain for the budget";
- Lack of interest among skilled forest staff for the engagement in cantonal administrations for forestry because the material income is a lot smaller in the cantonal administrations for forestry than in the cantonal forest companies.

Partial law implementation, depending on the territory (canton), exists because of the following reasons:

- The heterogeneous social-political conformation of federal and cantonal government institutions and their political willingness to change the present situation;
- Different internal and external influences of individuals and institutions disputing the competence of the canton administration for forestry and persisting on keeping the Forest Guard Service within cantonal forest companies, aiming at "a purposeful and better" forest protection which is analogous to the functioning of the previous social-political system.

Based on the analysis of qualitative and quantitative indicators of work valorisation of the Forest Guard Services the following points can be affirmed:

- In the canton in which the Forest Guard Services is not a unit within the canton administration for forestry (Tuzla Canton) there are no significant improvements in the work of the Forest Guard Service as it does its work according to the usual manner.
- In the canton in which the Forest Guard Service is part of the canton administration for forestry (Central-Bosnia Canton) there are numerous differences in approaching the issue of immediate forest protection as well as in the achieved results obtained with a far smaller number of forest guards. The number of unlawful logging has been constantly decreasing, and activities of temporary confiscation of illegal wood are undertaken. The procedure of confiscating unlawful wood is only partially realized during the period of integrating the Forest

Guard Service within the cantonal forest company; it is not carried out systematically as an obligatory activity.

According to the aforesaid, there are some particular deficiencies with the current law provisions when it comes to law implementation in the segment of immediate forest protection. They consist of inefficient and incomplete coordination of the cantonal administration for forestry with the federal institutions that are somehow in a particular way disabled in the realization of rights on the basis of ownership and in the complete insight of the activities carried out in the forests.

To overcome the aforesaid deficiencies we find it necessary to undertake the following actions:

- In the legislative procedure an approach should be made for the correction of current organizational structures of forest sector.
- Immediate forest protection via the Forest Guard Service is to be organized along the same or nearly the same principals as is the organizational conformation of conducting forest inspection activities on the territory of the Federation of B-H. By the suggested modality of organizing the Forest Guard Services, the owner of the forest (the State) will be actively involved in monitoring of the state of forestry, implementation of contracted duties and registration of all activities carried out in the forests, including forest damages.

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Table 1: Surface, stocking volume, increment and available annual cutting (AAC)

Canton / Elements of comparison	Central-Bosnia Canton	Zenica-Doboj Canton	Tuzla Canton	Sarajevo Canton	Total
Surface (ha)	185.949	195.901	72.435	70.747	525.032
Stock volume (m^3)	28.730.582	34.074.098	14.626.600	10.558.931	87.990.211
Increment (m^3)	- 702.427	- 1.025.111	- 386.600	- 263.592	- 2.377.730
AAC (m^3)	502.179	747.869	286.700	199.678	1.736.426

Table 2: Submitted reports (V-violations, C-contraventions), amount of unlawful logging (C-conifers, B-broadleaves) and temporary confiscated wood (C-conifers, B-broadleaves)

Elements of comparasion		Central-Bosnia Canton			Zenica-Doboj Canton			Tuzla Canton			Sarajevo Canton			Total		
Reports submitted	year	V	C	Total	V	C	Total	V	C	Total	V	C	Total	V	C	Total
	2003	651	1.268	1.919	764	486	1.250	715	153	868	132	106	238	2.262	2.013	4.275
	2004	425	895	1.320	582	400	982	709	126	835	90	114	204	1.806	1.535	3.341
	20005	638	693	1.331	694	587	1.281	847	165	1.021	213	117	330	2.392	1.562	3.954
	2006	810	191	1.001	873	627	1.500	1.036	275	1.311	311	130	441	3.030	1.223	4.253
	2007	956	211	1.167	1.088	459	1.547	714	172	886	119	95	214	2.877	937	3.814
	Total	3.840	3.258	6.738	4.001	2.559	6.560	4.021	891	4.912	865	562	1.427	12.367	7.270	19.637
Unlawful logging (m^3)	year	C	B	Total	C	B	Total	C	B	Total	C	B	Total	C	B	Total
	2003	19.870	17.509	37.379			7.307			1.952	548	431	979			47.617
	2004	14.849	21.939	36.787			3.087			1.614	196	555	751			42239
	20005	10.807	20.137	30.944			4.303			1.846	144	739	883			37.976
	2006	7.967	14.121	22.088			3.596			2.647	238	670	908			29.239
	2007	6.848	9.478	16.326			6.373			1.707	253	199	452			24.858
	Total	60.341	83.183	143.524			24.666			9.766	1.379	2.594	3.973			181.929
Temporary confiscated wood (m^3)	year	C	B	Total	C	B	Total	C	B	Total	C	B	Total	C	B	Total
	2003	149	84	233			-			-	50	41	91			
	2004	169	171	340			-			-	22	8	30			
	20005	340	733	1.073			-			-	18	36	54			
	2006	658	1.589	2.247			239			-	60	68	128			
	2007	1.311	1.616	2.927			1.148			-	24	5	29			
	Total	2.627	4.193	6.820			1.387			-	174	158	332			

Non state forests in Bulgaria – Status and problems

Nickola Stoyanov[*] and Maria Stoyanova[**]

Abstract

After restoration of property on forests (1997 - 2006), the ownership distribution is the following one: state 75,9 %, private 9,7 %, municipalities 11,7 %, religious communities 0,6 %, others 2,1 %. The changes of non state forests in Bulgaria are presented followed by questions concerning legislation and normative organization, processes of restoration, and status and forms of management. The problems of non-state forest owners and the possibilities for assisting them trough measures of the program for rural development are discussed. In conclusion suggestions are made for improving the management of non state forests in Bulgaria.

1. Forestry of Bulgaria today

The total forest area in Bulgaria is 4 076 million ha or 34% of the country's territory. Of this area 3 674 million ha or 33 % are afforested lands. Deciduous forests cover 2 572 260 ha (70,4 %) and coniferous forests (excluding mountain pine) 1.078 983 ha (29,6 %). Natural stands are 73.4% of afforested area (2 679 130 ha), of which conifers cover 399 522 ha (14.9%). Growing stock of Bulgarian forests towards the end of 2005 exceeds 590 million m^3 of timber at an average annual increment of 3.9 m^3/ha; the total annual increment is 14,5 million m^3. All forests in Bulgaria are utilised according to forest management plans.

Three-levels organizational structures for management of state forests are offered:

- The State Agency of Forests manages state forests and controls all forests in the country. At the department "Forestry and nature protection activities" is organized in the section "Non state forests" with the task to participate in development programs for stimulating participation of non state forests owners in the renovation, management and protection of their forests and providing consulting and administrative services in forest management.
- Regional Directorates on Forests (16 in number) are structures of the State Agency of Forests. They implement state forest policy at regional level. In their structure there are specialists which help owners of non state forests.
- The local organs of the state authority are the 164 State Forest Enterprises and 37 State Hunting Enterprises (SHE). They control, in cooperation with the Regional Directorates on Forests , state, private, municipal, and other public forests according to the Forest Law.

2. Historical overview

Table 1 and Figure 1 show the share of different categories of forest ownership before nationalization according to the official statistical data from 1947. The area of non state forests in Bulgaria before nationalization was about 682 thousand ha or 18,7 %. The forests which were state property, but given by the state according to the prevailing legislation to municipalities for satisfying the need of citizens amounted to 54,7 %. This was a very specific kind of property and

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management status which implied that such forests could not be sold to the physical persons or acquired as a private property in accordance with the forest laws that had been adopted during the period from establishing the first forest administration in Bulgaria until the time when the law on nationalization of forests became in force. After nationalisation, all forests in Bulgaria during the period 1950–1997 were state-owned.

Table 1: Distribution of the forests by property in Bulgaria before nationalisation

Type of property	Number of owners	Afforested area in thousand ha				Unforested area in thousand ha	Total thou-sand ha	%	Average area of one owner or holding ha
		Coni-ferous	Deciduous		Total				
			High-stem	Low-stem					
State	1	166.5	267.3	329.9	763.7	197.0	961.7	26.6	-
State, given to the communities to manage it	6.059	112.6	368.4	1178.0	1659.2	327.0	1978.2	54.7	328
School	563	1.0	2.0	12.2	15.2	10.0	28.2	0.7	45
Monasteries and churches	500	3.8	9.7	10.3	23.8	12.5	36.3	1.0	73
Co-operative	71	16.4	2.1	0.7	19.2	7.5	26.7	0.7	376
Private over 50 ha	153	12.6	8.5	30.3	51.4	12.0	63.4	1.7	415
Private under 50 ha	472.500	42.2	53.7	406.4	502.3	25.2	527.5	14.6	1.12
Total	-	355.3	711.7	1967.8	3054.8	592.2	3627.0	100.0	-

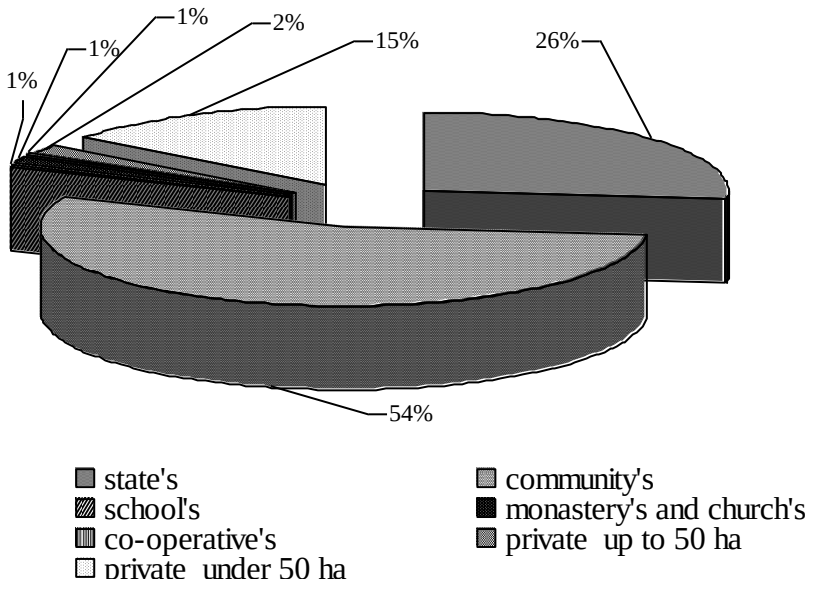

Fig.1. Distribution of forest lands before the nationalization by ownership

3. Restoration of forests and forest lands in Bulgaria

Since the Law for restitution of forests and lands of the forest fund was adopted in 1997 a long process of restoration of property in forests began. Besides the state-owned forests, big and small private property was established and the share of municipal forests became considerable. Restoration of ownership in forest fund is already completed, but as a whole the trend is towards increasing small private ownership and municipal forests. Although officially brought to an end, the process for restoration of ownership on forests and lands in forest fund continues – lawsuits for recognition of the right of ownership are conducted by municipalities, as well as by other owners, who have missed to declare their own or inherited forests in the term provided for by the law.

Real restoration of property on the forests in Bulgaria begun in 2001; 4 years after accepting the Law for restoration of property on the forests and forest lands of forest fund. *Figure 2* shows the process of restoration of property on the forests in the period 2001 – 2007. During the period 2001 -2006 the share of municipality's forests increased and the share of private forests (forests of physical persons) decreased *(Figure3).* Areas of different kinds of forest property restored in the period 2001- 2007 are shown in *Figure 4 and 5*.

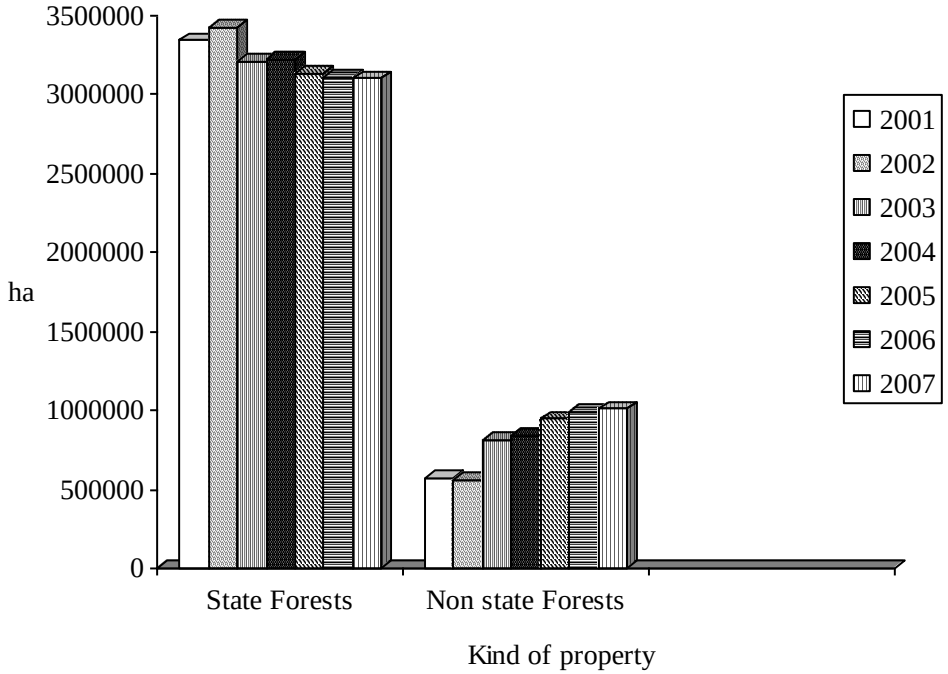

Fig 2. Changes in area of state and non state forests in the period 2001 - 2007

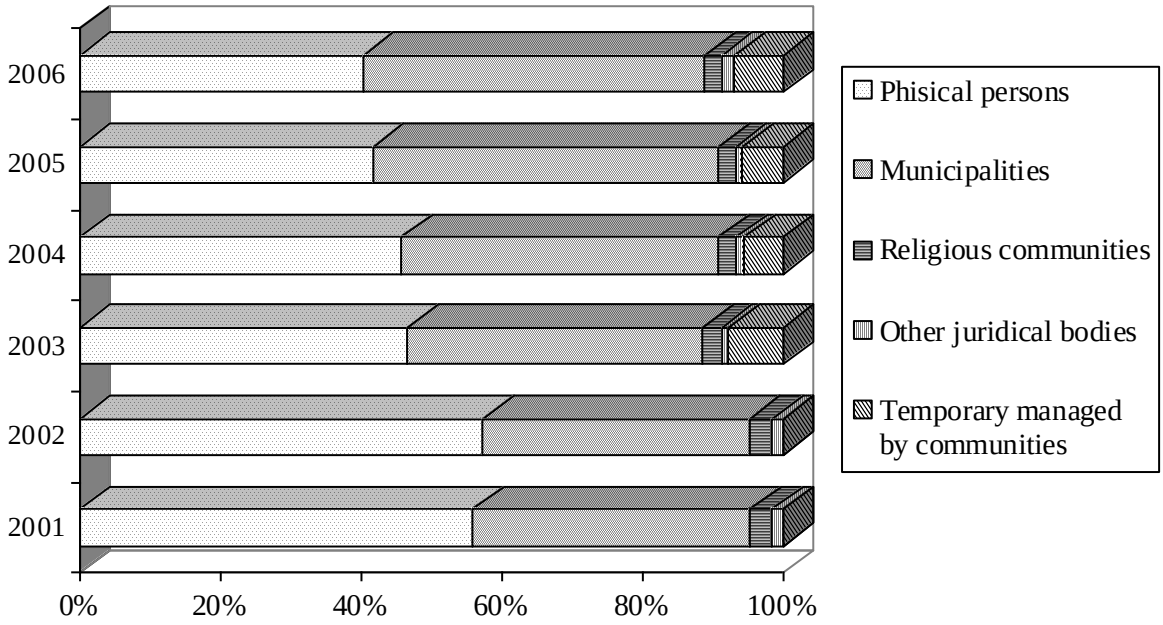

Fig. 3. Changes in structure of non state forests in Bulgaria in the period 2001 - 2006

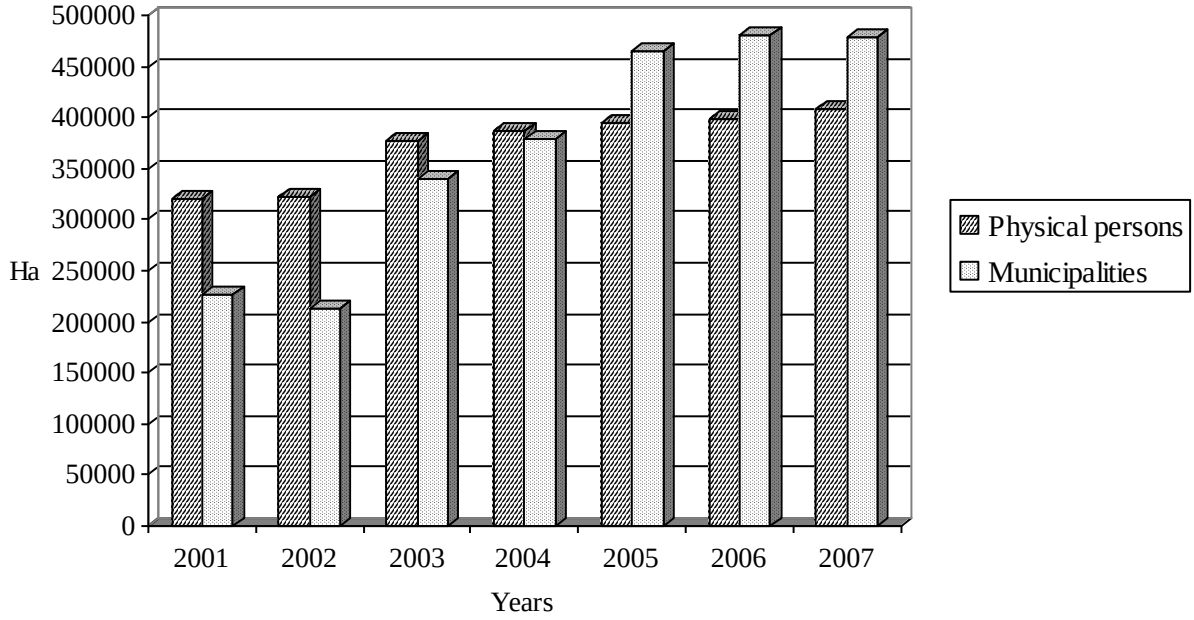

Fig. 4. Restorated area of forests of municipalities and phisical persons in the period 2001 - 2007.

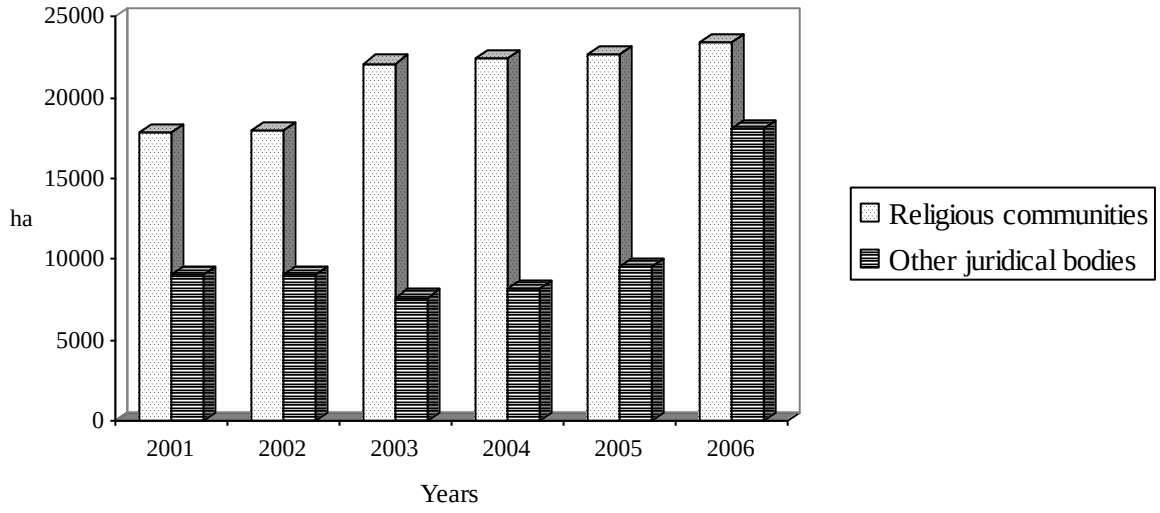

Fig. 5. Restorated area of forests of religious communities and juridical persons

4. Ownership of forests after restoration and characteristics of non-state forests

The share of total forest area according to types of ownership as of December 2006 is shown in *Table 2 and Figure 6*. The total forest area is 4 089 762 ha. State-owned forests cover 75.9% of this area. The structure of non-state forests (24,1%) is as follows: private physical and juridical persons 10.2 %, municipalities 11.7%, religious communities – 0,6%. The total restored property towards 31.12 .2006 is 987 075 ha or 24.1% of the total forest area in the country.

The share of non-state forests has increased if ccompared with the one before nationalization (18,7 %). It amounts now it to 987 100 ha against 682 100 ha before the nationalization. The increase is the result of restoration of about 480,000. ha to municipalities which were not owned by them before nationalization. The extension of non-state forests with 96 292 ha compared to 2005 is at the expense of forests in the state forest fund as a result from cases to ascertain the right of property which have been brought to end. There are 539449 properties, which have been reinstated against 473 787 properties before nationalization. The average area of one estate in non-state forests is 1,83 ha against 1,44 ha. Most fragmented are estates of physical persons with an average of 0,78 ha per estate against 1,25 ha. An increase of fragmentation results from restoration of forests to the inheritors of private owners before nationalization.

Non-state forests are very unevenly spread among the 16 regional forestry boards of Bulgaria (*Table 3 and Figure 7*). Most of them (forests of physical persons) are in the regions Berkovitsa, Lovech, V. Tarnovo, Smolyan, and Sofia. The largest areas of municipal forests are in Burgas, Sofia, Kardzhali, Ruse, Pazardzhik and Sliven. The data in *Table 4 and Figure 8* show that 19,47 % of coniferous forests, 21,16% of deciduous high-stem forests, 34.6 % of coppice for transformation forests, and 38,7 % from low-stem forests are situated in non-state forest areas. Small and fragmented private forest property has more and more importance for owners as a source of additional income and timber use. In 2005, about 1.6 million m^3 have been harvested from non-state forests, which is 28 % of the total quantity of harvested timber.

Table 2: Distribution of forests and woodlands in Bulgaria by type of property 2006

Type of property	Area (ha)	Area (%)
1. State-owned	3102687	75.87
From them:		
National Forest Board	2932372	71.70
Ministry of Environment and Waters	159008	3.89
Experimental Training Forestry Centres	11307	0.28
2. Non-state:	987075	24.13
From them:		
Physical person	397850	9.73
Forest of juridical persons	18112	0.45
Municipalities	480062	11.74
Religious institutions	23365	0.56
Forest on agricultural lands	67686	1.65
Total	4089762	100.00

Source: Statistic of NFB

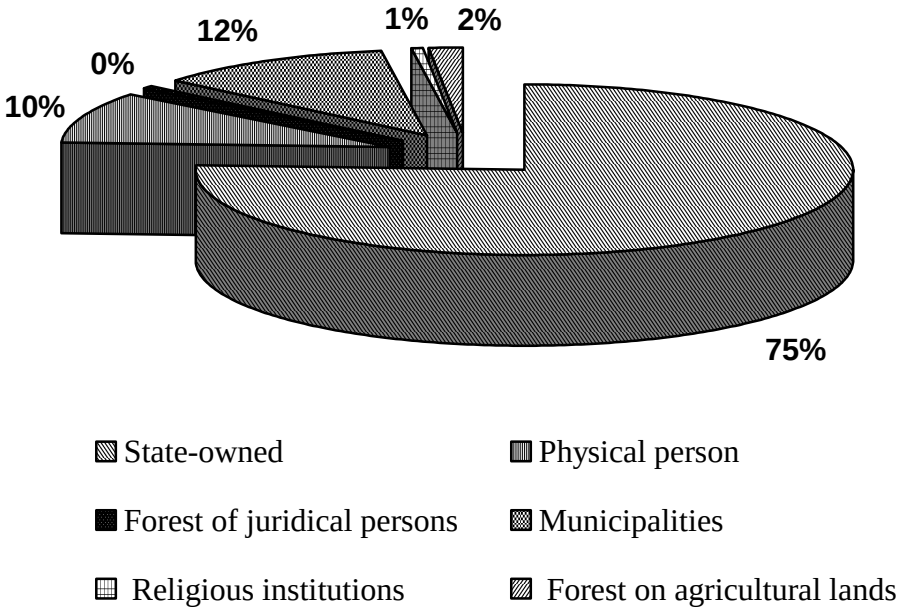

Fig.6. Distribution of forests by type of property as of year-end 2006

Table 3: Share of the total forest area according to type of property in regional forestry boards and total for the country towards 31.12.2005

Regional forestry board	Total forest fund - ha	According to type of property - ha			
		State forest fund	Municipal	Private	Religious
Berkovitsa	235050	142216	15349	75753	1732
Blagoevgrad	397350	388630	436	8281	3
Burgas	331665	211358	97933	11950	424
Varna	184462	172908	6667	4870	17
V. Tarnovo	207346	138273	17332	53547	865
Kardzhali	357065	290702	58711	7243	409
Kyustendil	240217	198288	4698	28373	13168
Lovech	221207	146176	29329	63685	1671
Pazardzhik	261186	224225	33728	5575	903
Plovdiv	210683	186952	19823	16965	901
Ruse	174051	126443	41569	5805	234
Sliven	235433	187199	33990	13188	1056
Smolyan	242124	189987	7019	44478	640
Sofia	421033	331455	78699	41383	555
St. Zagora	175548	163384	5274	13147	3
Shumen	182044	158642	14372	8945	85
Total for BG	4076464	3256838	464929	403188	22666

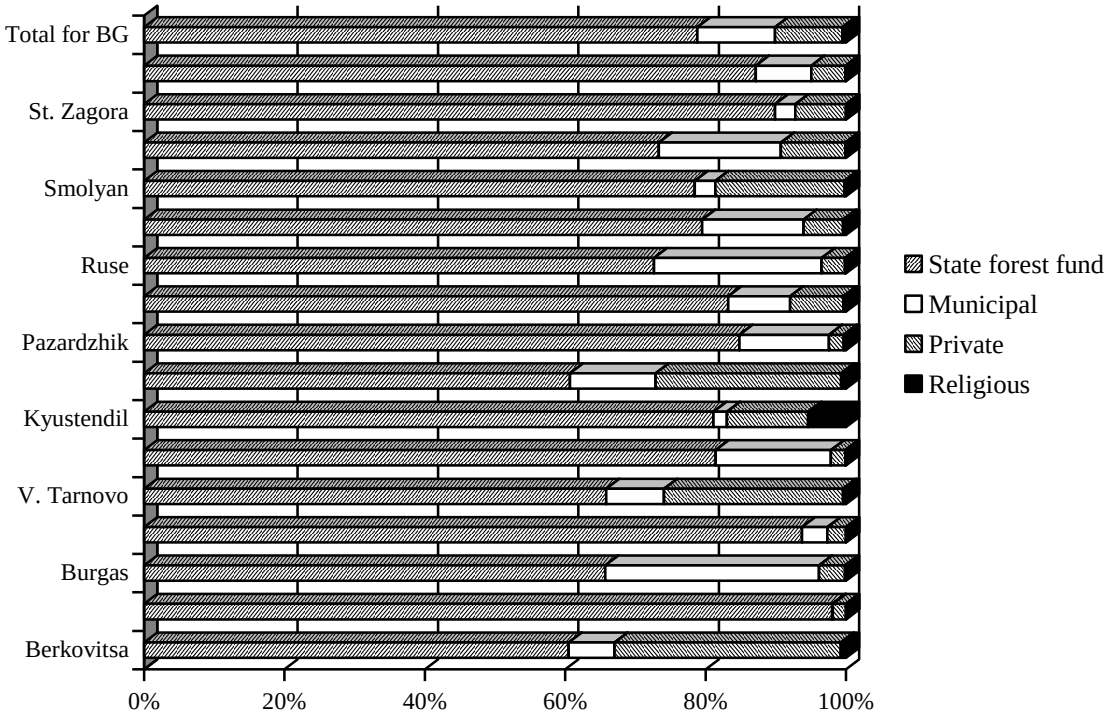

Fig.7. Share of the total forest area according to type of property in regional forestry boards and total for the country towards 31.12.2005

Table 4: Area of forests according to type of property and forests towards 31.12.2005

Type of property	Coniferous ha	Deciduous High-stem ha	For reconstruction ha	Coppice for transformation ha	Deciduous Low-stem ha	Total ha
Agricultural fund	26024	6130	5525	7386	8791	53856
Educational-and-training forest enterprises, schools, cultural centres	5812	4853	316	333	4	11318
Municipal forest fund	93566	105007	61748	175949	28659	464929
Physical persons	110032	54135	39262	156695	33556	393680
Juridical persons	1895	1750	1086	3876	901	9508
Religious	11535	4804	2185	3742	400	22666
Total non-state forests	248864	176679	110122	347981	72311	955957
%	19.47	21.16	17.61	30.24	38.70	23.45
State forests	932047	613770	502393	798696	114166	2961072
Forests MOEW	97603	44451	12956	4030	395	159435
Total state forests	1029650	658221	515349	802726	114561	3120507
%	80.53	78.84	82.39	69.76	61.30	76.55
Total	1278514	834900	625471	1150707	186872	4076464

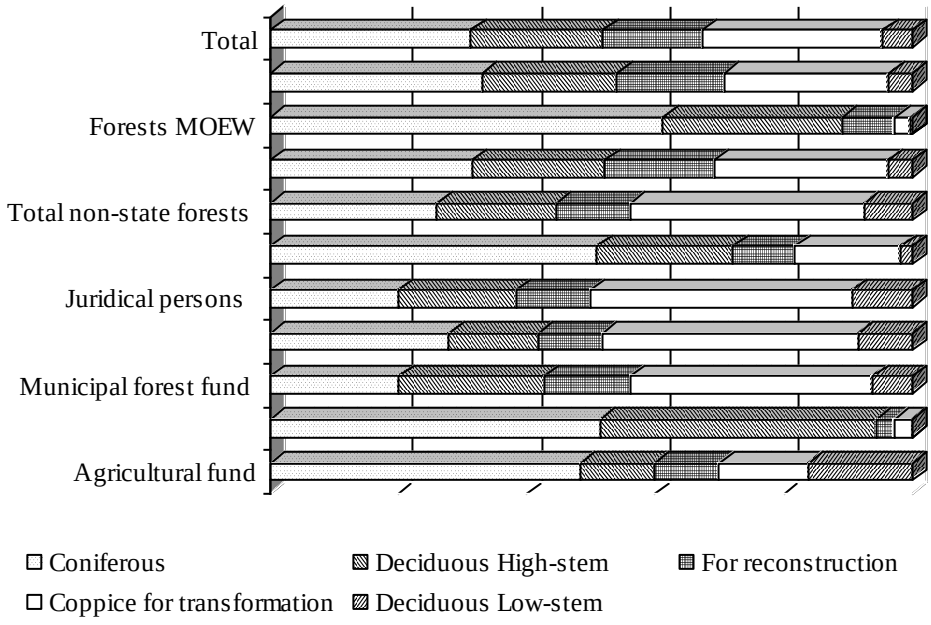

Fig.8. Distribution of forests by type of property and type of forests

5. Management and maintenance of non-state forests

The management of non-state forests in Bulgaria is carried out in different ways:

- A big part of forests and forestlands of physical persons is managed by the owners. Mainly the private owners with forests bigger than 10 ha manage their property alone.
- Forest owners, possessing small pieces of forests, have difficulties to manage them. The biggest part of them possesses very small parcels (mostly less than 1 ha) and this is the cause for difficulties.
- Religious communities manage their forests alone. There are several monasteries in Bulgaria which have big own forest area. They use forest specialists as consultants or as managers for their forests.
- The communities in Bulgaria are the biggest non-state forest owners. There are 10–15 community forest enterprises established so far, with forest specialists carrying out all forest operations.
- In the region of Smolyan (the region of the mountain Rhodopes) we had traditions in the past in management of private forests by co-operatives. About 25-30 co-operatives for management of private forests were established again in this region. The co-operatives implement harvesting, wood processing, selling of timber, wood and non-wood products, forestry operations, etc.

In order to begin to manage properly their forests, new forest owners can receive help from the state and from trained foresters. The State Agency of Forests, in collaboration with NGOs, works for improving knowledge and training of private forest owners.

New private forest owners have insufficient experience, as well as lack of knowledge and skills for forest management. They also have insufficient knowledge about their rights and duties. For the moment, the bigger part of forest owners prefer to manage their property by themselves. Taking into consideration the small area of single ownerships this type of management is ineffective. One part of forest owners has begun to establish their organisations for mutual forest management. About 30 private forest co-operatives have already been established in the country, most of them being in Smolyan district, where this kind of management has been widely popular before forests nationalisation.

Municipalities which are forest owners are in the beginning of a process to establish special structures for forests management. This process should be encouraged. Although the presence of forest co-operatives and some guilds of private forest owners, the level of association of non-state forest owners is still low. However, the role and responsibility in forest management on the side of non-state forest owners grows more and more.

In spite of the efforts made by state forest administration and the presence of private forester's practice, owners still face difficulties in the access to investments and advice, which shows that the assistance in this direction remains insufficient. Measures undertaken by the National Forestry Board to assist economic activities in private forests are as follows:

- Normative regulation was accepted for management and maintenance of private forests.
- There are specialists in the State Agency of Forests and its structures who assist and consult forest owners.

- Private forest owners can obtain financial support from the state, for instance, for gratuitous inventory of forest resources, consulting, and carrying out of forest protection activities. .
- Private forest owners can obtain financial support trough measures of Programme for rural development by implementing special projects.
- The State Agency of Forests carries out conservation, protection and control of private forests, as well as sanctions of infringers according to the Law of Forests.
- Rules have been introduced and updated for maintenance and management of forests which don't limit the owners' rights and protect utilities from forests of general use.
- Legal guarantees have been established for sustainable development of private forests through regulation of private foresters' practices.
- Upright relations were established between the State Agency of Forests and private practicing foresters for information exchange, carrying out of seminars, participation in mutual commissions, suggestions for improvement of normative regulations, etc.

In spite of measures undertaken by the State Agency of Forests considerable problems have appeared in the management of private forests, i.e.:

- absence of interest and experience by owners for management of private forests;
- considerable scale of utilisation of private forests;
- insufficient and constantly changing normative regulations;
- increasing requirements of society to the owners for maintaining an ecological balance in forests and their sustainable management;
- poor infrastructure for normal carrying out of necessary activities;
- insufficient resource support of small owners for establishing of guilds.

The problems mentioned above have significant influence on small private forestry. In this case there is no interest to forestry activities because they require large investments and the fragmentary character of this forestry makes it unprofitable. There is absence of experience in Bulgaria in forests management in conditions of various types of property. That's why encouraging the management of private forests is especially important with view of sustainable management of forests.

The main ways to overcome the weak points in management of fragmented small private forest estates are:

- Consolidation of small private forest property;
- Co-operation of private forest owners for mutual management of forests;
- Commitment of private forests management to state forestry structures.

Accumulated experience and the way of management of non state forests, as well as and the effectiveness of the control on the activities in them lay to the conclusion that the operated legislative documents can't arrange the public relations and in many cases it's application isn't of interest for the forest owners and for the state and the society. Bear in mind the diversity of the property on the forests and the presence of many different owners now it is necessary to change the Low for forests, which can to regulate trough new way the activities in the non state forests, as well as the role of the state forest administration in the processes of consulting, administration and control different forest owners.

6. Conclusions

Arising of different forms of property in Bulgaria requires solving many problems concerning management and utilisation of non-state forests. It is essential:

- To develop mechanisms for protection of interests of forest owners. This includes legislative and normative guarantees for implementing a balanced strategy for the development of forestry which is accepted by the whole society.
- To improve management of small-sized forest possessions. There is need for hard efforts for finding suitable forms and stimuli for co-operation of owners for joint management and planning of their forests.
- To motivate forest owners for protection and sustainable management of their forests. It is necessary to popularise modern multifunctional forms of utilisation of resources aiming at sustainable and close-to-nature management for the interest of different owners and for the whole society.
- To provide support to the owners.This refers to activities concerning afforestation, regeneration and tending of the forests, management planning and certification, as well as establishment of a system for administrative servicing and a network of centres for education and consulting of private forest owners.
- To establish a mechanism for compensation of lost benefits from limited economic activity in forests and commercialisation of their environmental functions.
- To support the establishment of a market for forest holdings, products and services related to the forests.

The process of establishing a new property relationship in Bulgarian forestry is not finished with restoration of forests and forestland to former owners and their inheritors. In order to begin work properly, new forest owners can receive help in the form of free consultations, education, compensations and financing help from the state. This will give the possibility to preserve private forests as a national wealth and to help private forest owners to obtain financial returns from managing their forest resource.

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Time of intensive changes in environmental and forest legislation for Croatian forestry

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Summary

In Croatia, the period from 2000 to 2007 was marked with very intensive changes in the field of legislation and strengthening the institutional framework of the forestry sector. The following was accomplished: a new Forest Act was passed, the national inventory of forest resources was made for the first time, the Forest Counselling Service was established as a public service intended to promote private forest management in the Republic of Croatia, a professional chamber of forestry engineers was founded, and certification and licensing of specialist forest operations contractors and forest work contractors were initiated.

In the fields that are strongly interacting with forestry a number of regulations and strategic documents were passed. Most important were the Nature Protection Act, the Environment Protection Act, the Water Management Plan of the Republic of Croatia, and the Ecological Network Regulation of the Republic of Croatia. Intensive activities are under way related to selecting forest areas/localities to be proposed for the insertion into the NATURA 2000 network. Within the accession programs there are possibilities of using financial resources from the EU pre-accession funds SAPARD and PHARE. Forestry and all other highly important related fields have proposed significant expert arguments for developing multiple mutual relations concerning multifunctional resource use. At this stage of new orientation, forestry has modest opportunities, primarily due to the absence of a communication strategy, while certain compromises require thorough preparations, broad support and a strong lobbying.

Keywords: forest policy, regulation, institutional framework

1. Introduction

Forests are one of the basic natural resources of Croatia. They are characterized by well preserved natural features. Forestland in Croatia includes several vegetation zones that abound in various natural conditions and biodiversity. By signing the Rio Declaration, six Strasbourg and four Helsinki ministerial resolutions, the Republic of Croatia has committed itself to sustainable management with special regard to the protection and conservation of forests. Forestland in Croatia covers 43.5 % of the State territory. With 0.51 hectare of forest per capita, Croatia may be considered a European country with significant forest areas. Forests in Croatia are predominantly state owned. The State owns 82 % and private owners 18 % of the forests.

The Croatian forest policy is based on ecosystem forest management integrated with the preservation of natural diversity of forests and continuous maintenance of the stability and quality of commercial and non-wood forest functions. Sustainable forest management in Croatia has resulted in an FSC accredited certificate for the entire state owned forest area of two million hectares. According to the Forest Act, all companies are required to pay a fixed tax of 0.07 % of their turnover to finance the improvement of forest environmental services, the restoration of degraded forests in karst areas, and forest research. As a compensation for the use of natural resources, the State Forestry Enterprise must pay to the local authorities

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2.5% of the income realized through the sale of wood from its territory. The international declaration on forest protection states the obligation to provide national and international support to private forest owners, organize the Forest Extension Service with advisory functions, and to ensure joint protection and use of forests.

2. Relevant legislation addressing forests and forestry

Forestry and other activities related to forests and forest land are at present regulated by the:

- Law on Nature Protection (2005, rev. 2008)
- Forest Law (2005, rev. 2006)
- Law on Forest Planting Material (1992, revised in 1993 and 2005)
- Law on Environmental Protection (1994, revised 2007)
- Law on Water (1995, rev. 2005)
- Law on Hunting (1994, revised in 2005)
- Law on Fire Protection (1993)
- Law on Physical Planning and Building (1994, revised 2007)

The first regulations related to sustainable management and the conservation of biological diversity in Croatia appeared as early as the 18th century. The principles of sustainability and conservation of biological diversity are a constituent part of every legal act in forestry, while regulations on environmental protection contain guidelines for the conservation of biological diversity. Croatia has a long and rich legislative tradition in the field of forest management and natural forest regeneration. Since its independence in 1991, the Croatian government has been making great efforts to develop/implement functional and efficient ways of nature conservation. Thus, forests and forestlands as resources of general importance have the privilege of special protection and are utilized in the manner regulated by the Forest Law. The intent of the Forest Law and the Nature Protection Law is to conserve nature in forestland. The Croatian government specified the provisions in the 1990 Forest Law (last revised in 2006), stating that forest owners are obliged to conserve and utilize forest resources in a sustainable manner in regular forest management. According to the Law, they must perform all the necessary activities in order to regenerate forests. This includes seeding or planting, reforestation, conversion into high forests and improvement of conditions, clearing, forest guarding, etc. This ensures forestry practices based on ecological principles.

The state bodies which regulate environmental legislation in Croatia are:

- Department of Nature Protection at the Ministry of Culture, the objective of which is to "...identify the protected areas and keep the central registry, monitor the financing of various nature protection programs and establish and supervise nature protection institutions"
- State Institute for Nature Protection, whose purpose is to "… ensure long-term maintenance and enhancement of nature conservation in Croatia by high quality expertise work"
- Agency for Environmental Protection, whose task is to "...collect, unify and process nature protection data".

Nature preservation in Croatia is gradually taking a leading role among European countries. As much as 7.31 % of the area is protected within the network of national parks or some other form of environmental protection. The plan is to double this area in the near future. The levels of protection and the number of protected areas include 8 national parks, 2 strict nature reserves, 11 nature parks, 69 special reserves, 23 park forests, 28 important landscapes, 72 natural sights, 114 horticultural sights, 44 protected plant species, and 380 protected animal species.

The Environmental Protection Act, ratified on October 3rd, 2007, is a modern law that follows international trends in environmental protection. In addition to putting forth different goals of environmental protection, it stipulates the importance of protecting the ozone layer, reducing the consequences of climate changes, and encouraging the usage of renewable resources. Although the "polluter pays" principle is contained in many articles of the Law, no penal obligations are imposed on the polluters. However, the Law lists the categories of expenses which the polluter must cover if his activities violate the Law. Another interesting article (Article 27) concerns the use of Genetically Modified Foods (GMO´s) and restricts their transportation and use.

Two new institutions have been established by the Law:

- The Council for Sustainable Development and Environmental Protection, a nine-member counselling body which gives opinions and proposals concerning environmental protection-related documentation issued by the government or the Parliament.
- The Fund for Nature Protection and Efficient Use of Energy, a state body established with fines paid for violating the principles of environmental protection and with a special tax on motor vehicles. The activities of the Fund include financing, developing and implementing programs and projects relating to environmental protection and to the improvement and efficient use of energy.

3. Ministerial competence and implementing agencies in the forestry sector

When the Forest Law was passed in 1990, private forests received little attention. Under this Law, in order to harvest timber private forest owners had to go through the same complicated procedures as state forest owners. This eventually led to illegal logging and the non-application of forest management. The Law made no distinction in the treatment of forests regardless of ownership. Several improvements with regard to private forests were made in the Forest Law of 2005, rev. 2006.

Under the new organization, the Forest Administration was transferred from the Ministry of Agriculture, Forestry and Water Management to the newly established *Ministry of Regional Development, Forestry and Water Management*. The Forest Extension Service is an independent agency established by the Government of the Republic of Croatia for the purpose of improving the situation and management of private forests. It is modelled on some European countries with a similar condition and structure of private forests. For the first time, financial instruments were introduced in forestry as a support to private forest owners. These include assistance in drawing up management plans, securing means of biological reproduction, and constructing forest roads.

The company *Croatian Forests Ltd.* is responsible for the protection of all forests regardless of ownership and does not charge private forest owners for this activity. There are few forest roads in private forests. Some funds are collected from taxes paid by private forest owners on

the sale of timber products. More substantial financial resources come from the EU pre-accession funds. The *Forest Extension Service* is a specialized public institution established by the Government of the Republic of Croatia for the purpose of improving private forest management. The *Croatian Chamber of Forest and Wood Technology Engineers* was established in 2007. The Chamber has introduced minimal professional and technical-organizational criteria for the performance of forest operations. Members of the Chamber are engineers and graduate engineers of forestry and wood technology who perform specialist jobs in the field of forestry, hunting management and wood technology.

4. Current and future processes in regulating the forestry sector

The implementation of the national forest policy will require adjustments of legislation clearly determining the bearers and their interdependence and defining the role and the tasks of the forestry sector. Accordingly, this entails some new, changed, or added regulations a number of legal acts: Forest Law, Environment Protection Law, Nature Protection Law; regulations related to spatial planning; Law on Waters, Law on Hunting. The process of forest and forestland restitution (forest denationalization) in Croatia has started only recently. Estimates indicate that this process will include not more than 10% of the currently state-owned forests. According to the legislation in force, non-residents are not allowed to own forests and forestland in Croatia.

In 2003, the Government of the Republic of Croatia adopted a key document for strategic development of the forestry sector in Croatia - the National Policy and Strategy for Forestry. National forest policy strategy (2003) contains priorities which are placed in three groups and attributed to the following areas:

- Forest Ecosystem Management;
- Forest Administration and Legislation;
- Non Timber Products – Tourism, Hunting and Other Forest and Forestland Products;
- Timber Industry;
- Environment and Physical Planning;
- Education Research and International Co-operation; and
- Public Relations and Promotion.

For each of these areas there is a general introduction followed by policy considerations elaborating the relevant objectives and the specific strategic actions towards reaching the objectives. Each action identifies an organization or institution responsible for implementation. Possible partner organizations are identified which can play an important collaborative role despite not being primarily responsible for implementation.

The actions are assigned one of three priority classes:

- Priority I: Immediate priorities to be implemented during the period 2003-2006;
- Priority II: Medium term priorities to be implemented during the period 2006-2008;
- Priority III: Longer term priorities to be implemented from 2008 onwards.

It is important to point out that implementation documentation, with terms of reference and specified costs, is elaborated for the given priority classes respectively the various activities that have been defined in the strategic document. The overall policy aim is to increase the

contribution to the national economy through sustainable management, use and comprehensive protection of forest resources, and biodiversity protection by applying available or forthcoming research results. At the same time international trends in environmental protection and local community rights have to be respected. Although all the priorities were well set and planned, they have so far been implemented only partially. Long-term commitment should be made to achieve the set goals and control their realization on an annual basis. A National Forest Program should be initiated and completed in the shortest possible period, since other EU member states already possess such a fundamental forestry document.

5. Conclusions

In general, the three most important policy areas dealing with forestry and environmental concerns at the top level include nature protection (Department for Nature Conservation at the Ministry of Culture), forest and water protection sector (Ministry of Regional Development, Forestry and Water Management), and protection of the sea as the third separate issue.

An analysis of the priorities set down in the National Forest Policy and Strategy confirms that a considerable number of activities have been successfully completed. These include measures encouraging private entrepreneurship in the forest sector and simplifying forest management plans for private forests, as well as ensuring sources of financing through the establishment of the Forestry Chamber, and providing criteria for licensing forest contractors. As part of mid-term priorities, a forest inventory (GIS) has been launched and so have considerations for large-scale biomass use. The Forest Extension Service has been founded in 2007, while a model of forest contractor licensing is in the preparatory stage.

In the light of the new mode of governance firmly advocated by the European Union, especially after the 4th and 5th Ministerial Conferences on the Protection of Forests in Europe, MCPFE, in Vienna (2003) respectively Warsaw (2007), it is evident that the conservation approach to forest management has to be altered. Cross-sectoral cooperation and involvement of all interested stakeholders in the future preparation of forest and environment legislation is necessary. This will help to improve the current approach and raise public awareness of the position of forestry in rural development and environment protection.

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Croatian forestry policy and strategy – Process or static document

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Abstract

The National Forestry Policy and Strategy (NFPS) has been adopted by the Government of the Republic of Croatia in the year 2003 and stresses economic, environmental and social functions of forests in Croatia and their major impact on the quality of life. This paper analyses major activities determined by National Forestry Policy and Strategy setting different priorities and levels of fulfilment. The analysis shows that according to given priorities most of the strategic actions took place in time. For example in case of priority I, to be fulfilled during the period 2003 to 2006, almost 50% of the listed strategic actions have been completed, 30% are to be finished soon, and only 20% of the listed strategic actions are in serious delay. At the same time there is number of strategic actions under priority II (2006-2008) and even some under priority III (after 2008) that have already been fulfilled.

Key words: National Forestry Policy and Strategy (NFPS), strategic actions, Forest Law.

1. Introduction

Forests in Croatia have economic, environmental and social functions with a major impact on the quality of life. Croatia's forests are acclaimed internationally for their natural composition on 95% of the forest area and for their great diversity of plant and animal communities. According to data from the new Management Plan (2006 to 2015) forests in the Republic of Croatia amount to 2.7 million hectares or approximately 47% of total country area (Croatian forests, 2006). The State owns 2.1 mil ha (78%) of forests and forest land, while 0.6 mil ha (22%) are privately owned. "Croatian forests", Ltd Zagreb is responsible for the management of the majority of state forests for which they received a certificate from the Forest Stewardship Council (FSC), while some smaller areas are managed by other legal entities (Martinić & Dekanić, 2003).

The National Forestry Policy and Strategy, NFPS, adopted by Government of the Republic of Croatia in 2003 stresses the importance of the economic, environmental and social functions of forests in Croatia and their major impacts on the quality of life. The overall policy aims are (NFPS 2003): "Through sustainable management, use and comprehensive protection of forest resources and biodiversity increase the contribution to the national economy, applying research results, while respecting international trends and local community rights." The document is divided into seven main areas with a general introduction for each one, followed by policy considerations, specific policy aims and strategic actions to reach the aims. Each action identifies the organisation or institution responsible for implementation. Where possible, partner organisations that can play a collaborative role despite not being primarily responsible for implementation are identified. For each action one of three priorities are assigned:

- Priority I: Immediate priority - to be implemented during the period 2003-2006;
- Priority II: Medium term priority - to be implemented during the period 2006-2008;

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- Priority III: Longer term priority - to be implemented by 2008 onwards.

After a period of four years there is a clear need for an analysis of fulfilment based on specified strategic actions set in NFPS.

2. Materials and methods

Materials used for the analysis of this paper are basic and strategic documents from the forestry sector in Croatia (Posavec & Vuletić, 2004). The most important document is the National Forestry Policy and Strategy itself, supplemented by other documents like the Strategy of Wood Processing and Paper Industry Development, the Forest Law (NN, 140/2005), the Bylaw on Establishment of the Extension Service (NN, 64/2006), the Rulebook of private forest owners register (NN, 69/2006) and the Strategy of physical planning (MEPPP, 1997). The method of analysis consists of comparing of strategic actions according to priority levels set by NFPS with the existing documents and marking of evaluating them according to its degree of fulfilment.

A second source for evaluating the degree of fulfilment is derived from information collected during interviews with several high positioned policy makers in the forestry sector. Six experts from relevant Ministries, Croatian forests ltd.co, Forestry Faculty and Croatian Forestry Society have been interviewed. All of them are familiar with NFPS and the follow-up processes. They were asked about their understanding of NFPS and then they were asked to mark each strategic action with three different marks: (1) stands for completely accomplished actions; (2) was for partially implemented actions; and (3) indicates seriously delayed activities. At the end the two sets of information were compiled based on the best assessment of accomplishments. We made this assessment with the assumption that a professional opinion of a high positioned policy maker can be taken as a proven source of information.

3. Findings and Results

The findings of the study have been presented originally in tables taken from NFPS and marked with numbers expressing level of fulfilment. Due to the comprehensiveness of these tables and space limitation we present in the following the overall results as a ratio of total numbers of strategic actions among specific areas within the same priority level. According to the given division into main areas the level of fulfilment is expressed by areas and number of accomplished specific strategic activities. The results are reported in two parts. The first part presents activities with priority I (Table 1), and the second part the aggregate of activities with priorities II and III (Table 2). The reason for this approach is the small number of strategic activities within priority III. In fact, there is only one activity in this category which concerns measures for supporting better management of private forests that has been marked as fulfilled (Posavec et al., 2005).

3.1 Analysis according to priority I (2003-2006)

Cumulative results from Table 1 show a number of fulfilled activities for priority I (2003 – 2006). The degree of accomplishment has been identified for the number of activities in evaluation category. Looking at the activities within each strategic area the main fostering or influencing factors can be recognized. A more detailed analysis has been done for the category of seriously delayed activities.

Generally speaking the most successful strategic area is under B *"Forest Administration and Legislation"* with more than 80% of fulfilled activities. The activities within priority I were

concentrating on improving co-operation between state administrations and their effectiveness in undertaking the national forest inventory; supporting measures for private entrepreneurship in the forestry sector with defined requirements and providing criteria for licensing forestry contractors. The legal framework for facilitating efficient implementation of the strategy was determined and the existing laws were revised and harmonised with other related sectors. The only activity in priority I with serious delay is connected to the implementation of the Restructuring Study of Croatian forests Ltd.co. The restructuring of this company is really needed and the sector will have to cope with this task in near future.

The next most successful area is indicated under D *"Timber Industry"* with almost 80% of fulfilled and with no seriously delayed activities. This area addresses huge development changes related to establishing a new administrative pattern in dealing with Timber Industry. Previously the competent ministry was the Ministry for Agriculture, Forestry and Water management, and now it is Ministry for Regional Development, Forestry and Water Management. That new administration in cooperation with Ministry of Economy has drafted Timber Industry Strategy as a follow up document which makes all other activities easier to be accomplished. Some smaller delay has been noted in areas referring to the support timber and timber product markets, their development and monitoring, as well as supporting measures for development of permanent training and educational programs in technology, markets and use of raw materials. Those activities are not yet fulfilled completely but there are number of positive movements in the sector. It is to be expected that the problems connected to a free market regime will have to be solved during the accession process to the EU.

A less successful area with around 40% fulfilled activities is F *"Education Research and International Co-operation"*. This is area shows a number of improvements concerning co-operation in scientific-research projects among technical schools, universities and research institutions, as well as implementation of international commitments, conventions and resolutions. Some improvements in technical and human resources capacity of research institutions and new curricula development according to Bologna process at the Forestry Faculty were done. It is important to stress that some activities have been partially fulfilled meaning that plans are drafted but financing is not yet secured. In addition here are seriously delayed activities which are crucial for further improvement of education and research co-operation at national and international levels. Establishment of an inter-departmental body within the Ministry (previously MAFWM, now MRDFWM) responsible for the co-ordination of priority research needs and findings is one of them, followed with evaluation of the cost and securing the funds for the implementation of international commitments. Another one is computerisation and linking of libraries among the university and the research institute. Forestry companies and other relevant institutions should foster harmonisation and exchange of information among institutions. This will improve quality of information. All those activities are connected to a significant financial overtake from budget which was the main obstacle for fulfilment.

The same level of fulfilment rate (40%) shows area A *"Management of Forest Ecosystems"* with number of fulfilled and partially fulfilled activities. Sustainable management in forestry is a tradition in Croatia, so the management aspects focus mainly on shifting the prevailing management goals towards environment and nature protection by preserving and promoting habitat stability, forest health and productive capacity of stands. Other areas of concern are the implantation of the 4E principle (ecological, ergonomic, economic and energy); advancement in the use of favourable technologies; improvement of the management system in the karst region including bringing mined forest areas into regular management; and

utilization of biomass for energy. Seriously delayed activities in this area are connected to functional forest categorisation which was priority at that time. However, it seams that is very difficult to find justification of doing such a comprehensive task with no financial support. Those two activities are needed to be reconsidered and probably erased from future strategic activities. Last comes the establishment of appropriate evaluation of 4-E technologies in forestry and this will find its place in the future development of the sector.

Table 1: Results of analysis according to priority I (2003-2006)

Strategic area	Number of activities	Fulfilment rate in points assessed and in percent		
		Completed	Partially	Seriously delayed
A- Management	15	6	6	3
Percentage	100	40,00	40,00	20,00
B- Forest Administration	15	13	1	1
Percentage	100	86,67	6,67	6,67
C- Non Timber Products	10	3	5	2
Percentage	100	30,00	50,00	20,00
D- Timber industry	13	10	3	0
Percentage	100	76,92	23,08	0,00
E- Environment	10	2	4	4
Percentage	100	20,00	40,00	40,00
F- Education & Research	12	5	4	3
Percentage	100	41,67	33,33	25,00
G- Public Relations	4		1	3
Percentage	100	0,00	25,00	75,00
Total sum	79	39	24	16
Percentage	100	49,37	30,38	20,25

A somehow less successful area is C *"Non Timber Products – Tourism, Hunting and Other Forest and Forest Lands Products"* with 30% fulfilled, 50% partially fulfilled and 20% seriously delayed activities. This area related to the creation and promotion of specific touristic products from forest and its contribution to rural development was less successful than improving hunting on the principles of balanced development with enhancing of hunting touristic development. Sustainable utilisation of other forest and forest land products was not

successful and the reasons for under development of forest tourism lay in delay of undertaking a study to identify and evaluate the tourism potential of forest ecosystems which should serve as a basis for such a development. Also there is a lack of understanding of its importance and potentials for rural development, and for addressing the growing demand for recreation in forest and natural areas coming from urbanised centres. Another set of delayed activities are identifying, evaluating and defining the management principles for all non timber forest and forest land products; and undertaking a national inventory of non-timber forest and forest land products. These activities appear to be in the same situation as tourism suffering from a lack of understanding of its potential and responsible administration in the respective ministries in order to foster development and to take some actions towards fulfilments of strategic activities in the future.

A rather unsuccessful area has been E *"Environment and Physical Planning"* with 40% seriously delayed and partially fulfilled activities and only 20% fulfilled activities. That means that this area is difficult to be dealt with by the MRDFWM or that the needed co-operation with other Ministries did not take place. It is important to stress that for most of activities the Ministry for Environment Protection and Physical Planning was the main responsible together with other partners. It is time to reconsider this position to invite other Ministries for defining joint strategic activities and priorities for working together. Here we list only the unfulfilled activities referring to a review of a water charges model for forests and forest land; to establishing a new relationship and protocol between forestry and water authorities; to introducing regulations to ensure involvement of forestry professionals in the elaboration of physical plans; and to expanding the scope of the Forest Law in order to include provisions for regulating forestry matters in physical plans. It is clear that it is not possible without an inter-ministerial body coordinating work among relevant Ministries, providing for better co-operation, and defining common goals and strategic activities.

Least successful was area G *"Public Relations and Promotion"* with 75% seriously delayed, 25% partially fulfilled and none completely fulfilled activities. Establishing a PR / Communication Plan to meet all sector interests was one strategic activity that has been partially fulfilled meaning that some new staff was employed with PR tasks but unfortunately without serious concept for the forest sector as a whole. Other activities indicated in this area were the implementation the PR plan combined with program to increase public awareness; implementation of a training program in PR/PA (Protected Areas) and communication across the sector; and establishing continuous communication with local authorities. Looking at the activities within priority I one can assume that there is understanding of the importance of public presentation of the sector, but there is still not enough support and power to implement the necessary measures. It appears that it seems to be clear what should be done in the future if the sector wants to improve the existing not so good image presented to the public. But it appears not clear how to deal with the problem or better said who should take over the responsibility involving real professionals in order to implement this demanding but extremely important task.

The overall analysis shows that according to given priority I most of strategic actions took place in time meaning in period 2003 to 2006. Precisely 49.37% of listed strategic actions are completed; additional 30.38% is partially fulfilled or in good way to be finished soon and only 20.25% of listed strategic actions are in serious delay. Some of those seriously delayed activities lost its importance over the time and need to be reconsidered, and some of them just need to be rescheduled.

3.2 Analysis according to priorities II and III

Table 2 shows a number of fulfilled strategic activities within priorities II and III according to strategic areas. The overall result is somewhat similar to the results given for priority I a part from that there are no seriously delayed activities. The most successful area is again B *"Forest Administration and Legislation"* with 70% of completed activities relating to development of legislation, fostering work of an extension service, improvement of private forestry, establishing of a forestry chamber, follow-up legislation and monitoring of habitats preservation, as well as seed husbandry development.

Table 2: Results of analysis according to priorities II and III

Strategic area	Number of activities	Degree of Fulfilment	
		Completed	Partially
A- Management	10	5	5
Percentage	100	50,00	50,00
B- Forest Administration	10	7	3
Percentage	100	70,00	30,00
C- Non Timber Products	7	0	7
Percentage	100	0,00	100,00
D- Timber industry	7	2	5
Percentage	100	28,57	71,43
E- Environment	5	0	5
Percentage	100	0,00	100,00
F- Education & Research	6	1	5
Percentage	100	16,67	83,33
Total sum	45	15	30
Percentage	100	33,33	66,66

The second most successful area is A *"Management of forest ecosystems"* with 50% completed and 50% partially completed activities. Here we are looking at national forest inventory, habitats monitoring, GIS use, developing financial incentives to support environmentally friendly technologies, and promoting utilization of biomass for energy as relevant to Kyoto protocol implementation. Area D *"Timber Industry"* has less than 30% fulfilled activities and others are partially fulfilled. They focus on promotion of quality that is recognisable on national and international markets and on improving the level of final products production. Another concern is improved utilisation of raw materials by addressing inefficiencies in the timber supply chain. It is followed by the need to address activities

related to education and to environment and non timber products which have been evaluated mostly as only partially fulfilled activities. Public relations did not have any activity within priorities II and III.

4. Discussion

Following the trends in the developed world, the forestry sector is one of the high priorities in mitigation of the effects of greenhouse gases due to a growing utilisation of biomass as an energy source; sustainable and productive management and utilisation of higher volumes of wood from the forests through primary processing are essential (Martinić & Dekanić, 2004). The degree of implementation of measures defined in the National Forestry Policy and Strategy (NFPS) document from 2003 has been evaluated by assessing the performance level of strategic activities by specific areas and in accordance with priority classes. The assessment thus relates to the inventory that had been made in examining the critical conditions in areas directly or indirectly linked to forestry and to the forestry sector. Such an analysis is important for obtaining the realistic status and defining the significance of future steps and measures in forest policy and strategy. Conservation of forest resources through the use of ecologically, economically and ergonomically acceptable technologies and through utilisation of other, non-timber products have been defined as being of utmost priority. These issues set out in the National Forestry Policy and Strategy 2003 show that it has an important role to play for further development of the sector.

This analysis of the performance in implementing the stipulated activities made in this paper shows that considerable progress has been made in certain areas, however, that the growing role of a number of areas respectively activities have not yet been recognised as important for forestry development of the country. This refers, for instance, to tourism development showing an obvious lack of understanding of its potential and responsible administration in respective ministries. It is thus necessary to foster its development and to take more consistent actions towards fulfilments of strategic activities in the future. Implementation of resolutions and conventions being primarily concerned with forest protection and the protection of plant and animal life, as well as harmonisation of regulations and institutions with the corresponding ones in the European Union and in other developed countries, remain a high priority task.

5. Conclusions

The overall results of the analysis show that in the case of priority I most of the strategic actions took place in time that means during the period 2003 to 2006. Precisely 50% of the listed strategic actions have been completed, 30% are partially fulfilled or in good way to be finished soon, and only 20% have been evaluated as in serious delay. Some of the seriously delayed activities lost importance over the time and need to be reconsidered, and some of them just need to be rescheduled.

The most successful areas in which implementation of forest policy and strategy has made progress are relate to forest administration and legislation, timber industry development, education and research, and management of forest ecosystems. Main results of such activities can be documented, for instance, in the following manner: preparation of a wood processing and paper industry strategy; establishment of an extension service for private forest owners; establishment the Croatian Chamber of Forestry and Wood Technology Engineers; and by a new course of the Forest Law.

A final remark refers to the NFPS 2003 as an important policy and strategic document. It has been conceived in a rather static way but it was able to initiate in 2003 a number of activities and processes which enabled the forest sector to become more active and capable to adequately follow a shift to more environmentally friendly management. On the other hand it is obvious that some updating and revision of the general content of this document as well as rescheduling of seriously delayed strategic activities are needed.

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The status of transposition of forestry and nature protection EU Directives and Regulations into legislation of the Czech Republic

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The Czech Republic facing to join the European Union (May 1, 2004), implemented all relevant regulations related to forestry with the precondition that after entrance to the EU all Community binding legislative regulations automatically become binding for the Czech republic as for all member countries. The EU bodies have adopted ca. 170 legislative acts relevant for forestry up to the end of 2007.

This paper takes account how and in which way EU legal acts have been implemented in the Czech law order. The presentation is thematically divided into 16 subject groups for easier reference.

1. Forestry provisions in agriculture (1 Council Directive, 2 Commission Directives)

Forestry provisions in agriculture texts are destined to EU member states and address above all alternative utilization of agricultural soil and development of forestry activities in agricultural land management. States which were not full members of the EU were not concerned with such Council and Commission Directives and that is why they did not need to implement them in their own legislation.

2. Forest statistics (3 Council Directives)

Council Directive No. 1615/1989 which establishes the EFICS system (European forestry informative and communications system) determines the development of the EU statistics forestry section. Performance of this programme has been operational since 1989 and was undertaken in two stages.

Stage I 1989-1997: The aim of the 1st stage was the development and implementation of the information system, broken up into a preparatory (1989-1992) and realization period (1993-1997). During the preparatory period an inquiry was made about state information systems in forestry in member states – particularly on the inventory base. Further a study for evaluation making and comparability of statistical data was fulfilled, which was processed by EFI.

Stage II 1992-2002: Further work on EFICS development was based on a layout on a layout for several years. Topics remained the same but a step up to substantially more intense cooperation was engaged. This referred to the production of new Information System in the frame of an international working group with the aim of better co-ordination and abolition of duplications; new definitions of observed indicator content – especially as related to biodiversity and non-wood-producing functions of forests; and improvement of communication connections. Presumably, the continuation of the work in nomenclature (indicator definitions) and harmonization of existing data will be required.

Status of ensuring connection with the work of the Czech Republic: Pursuant to accessible information it is possible to state that the demand on data incident to forestry is still ensured in our country at this time. It means that the current information systems operating in our forestry offer information in such a way that international commitments cam be ensured. On the other hand the data administration is solved unsystematically. Currently there is no uniform survey, which would, within this relatively narrow circle of transfer information,

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describe the basic parameters. It will be desirable to create a more connected set of information on transfer data requirements, their definitions and sources, and the inclusive gesture for these data. Data transfer is not solved in a suitable way - pursuant to their transfer only in written form. For an improvement hereof the state will have to discuss bilaterally appropriate digital forms of required data transfer to the recipient.

3. Structural provisions in forestry (5 Commission Directives, 4 Council Directives)

The Czech Republic responded to the EC structural measures destined to reduce agricultural land for foodstuffs production. Two programmes have been applied in Czech legislation. Above all, a Horizontal Plan of Rural Development (HRDP in Czech) has been prepared implementing such measures into the Czech legal order by Government Decree 308/2004 Coll. The second programme was a Sector Operational Programme (SOP) which was realized by means of the Ministry of Agriculture. Using these programmes the area of afforested land amounts to:

Year	Area of afforested agricultural land (ha)
2004	570
2005	658
2006	884

4. Protection of Community forests against fires (4 Commission Regulations, 4 Council Regulations)

Since the 1980ies the European Union supports member states applying measures of combating forest fires such as prevention, fire extinguishing and renewal measures. Forest fires deteriorate forests and their economic, ecological and social functions, and common activities against fires may function more effectively and efficiently.

Community Regulation (EEC) No. 2158/92 on protection of forests of Community against forest fires – with a view to prevention – is important and completes measures on forest fire fighting established with Regulation EC No. 2157/1999 of May 17, 1999 on Rural Development. Database on forest fires is included in EFFIS and offers data about forest fires in the Czech Republic.

The Council and the European Parliament (EC) Regulation No. 2152/2003 of November 17, 2003 on Forest Monitoring and Environment Interactions in the Community (so-called Forest Focus) represents one of the relatively new legislative measures. Unfortunately it is in fact already obsolete (with the promise that this activity will be supported in the framework of Life+).

5. Protection of Community forests against the air pollution (13 Commission Regulations, 9 Council Regulations)

The unfavourable development of the health of forest-tree species in the majority of European countries in the 80ties evoked the need of thorough and coordinated monitoring and evaluation of environmental changes that lead to the destabilization of forest ecosystems. The International Cooperative Programme on the Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests) was adopted at the third session of the executive body of the Convention on Long Range Trans-boundary Air Pollution (CLRTAP) in July 1985. A task of this programme is to co-ordinate at the European level the collection of comparable data on

changes in forest stands incidental with actual environment condition (air pollution, acidic depositions etc.), to contribute to the classification of damage trends, and to a platform for better understanding causes and effects relations.

The task of the ICP Forests is to collect information on spatial and time pattern of forest condition development in a European scale on the one hand, and on the other hand to contribute to the improvement of knowledge on contemporary forest damage causes with special emphasis on critical load and air pollution degree. Realisation is provided through the monitoring system of different scales and measuring intensities (Level I and II). investigations are carried out on monitoring plots at regular intervals at the levels I and/or II according to an agreed classification of crown status (defoliation, colour changes etc.), recognition of social position of trees, mensuration data from forest parameters, phytocoenological observations, soil and foliar analyses, annual ring analyses, and measurement of deposition and atmosphere parameters. Almost all European countries have joined step by step the ICP Forests programme. The Czech Republic did so in 1986 with 61 monitoring plots in a grid 16x16 kilometres.

The number of plots (circular surface 40 m) rose to 106 in the next year. The original conception used in the Czech Republic since 50ties when the first monitoring plots on SO_2 emissions on forest stands had been established was adopted for this supra-national grid. Another grid at the scale of 8x8 kilometres with further 334 plots was created in 1991. In addition, within the framework of regional studies additional plots in grids of 1x1 kilometres have been established in Forest Regions Bohemian Forest, Brdy and Krkonose (Giant) Mts. Information of these monitoring plots made possible to obtain a detailed and representative picture about the situation in the respective forest regions comparing forest stands health condition with their soil and nutrition status. From 1997 to 1998 there was general reconstruction of the national and supra-national nets with a view to optimise species and age composition on the monitoring plots. The aim was to obtain a better characterization of the real tree species composition in the Czech Republic forests.

Currently a regular classification is provided at Level I on plots of a basic network 16x16 kilometres combined with chosen plots of the 8x8 kilometres grid. Altogether, 306 plots are regularly dislocated according to the forest cover throughout the Czech Republic territory. Level I of the programme, ensuring spatial monitoring of forest condition in a systematic grid of nets, has been broadened since 1994 with so-called Level II plots for comprehensive, intensive monitoring of forest ecosystems on chosen monitoring plots (16 plots at present).

Since 2004 the ICP Forest programme ties together a new project of European cooperation „Forest Focus" based upon regulation No. 2152/2003 the European Parliament and the Council of December 17, 2003 concerning monitoring of forests and environmental impacts on Community forests. But it seemed to me that FOCUS already had gone in relation to LIFE+. Both overlaying programmes cover the whole Czech territory and offer information on the status of forests conform to the accurate European methodology which considers the long-term character of tracking problems at a Pan European range. Of the equal importance is this information in working out of air or satellite photos for the purpose of forest condition development assessment. Because of problems in financing the programme there is designed a connection between monitoring plots and plots of national forest inventories. Monitoring results have been published in a Czech and English version in 2005.

6. Processing and sale of forest products (1 Commission Regulation, 1 Commission Decision, 1 Council Recommendation)

Support to processing and better negotiability of forest products was adopted in the EU before the Czech Republic accession to the Community. The support was oriented toward purchasing investment goods and consisted of subsidies on loan interests for acquisition of investments and sponsoring for credits. There was a relatively high inflation in the Czech Republic in 90ties with double-digit inflation, and subsidies of interest rates represented an important help of the state on purchasing, for example, machines and other equipment by forest owners and entrepreneurs in forestry.

7. Protective measures against bootstrap of organisms harmful to plants or vegetable produce (19 Commission Decision, 8 Commission Directives, and 4 Council Directives)

The basic legal document creating the institutional basis for activities of the State Phytosanitary Service is Law No. 326/2004 Coll., as amended by the Act No. 131/2006 Coll. The State Phytosanitary Service is an administration office, which functions particularly in the area of plant and vegetable product protection against harmful organisms, registration of preparations on plant protection, as well on plant protection mechanisation means. The law was amended with reference to the Czech Republic accession to the European Union, considering that there were specific regulations of the Community in the area phytosanitary care. Fundamental executing public notices of the Act 326/2004 Coll. related above all to problems which are necessary in the light of the law observance. A number of public notices providing for more detailed procedures and manners of appropriate provision for observance have been made:

- Public notice No. 327/2004 Coll., on protection of bees, animals, aquatic life and other non-specific organisms in using preparations of plant protection.
- Public notice No. 328/2004 Coll., on recording of occurrence and destroying of harmful organisms in vegetable product stores and on the way of recognition and regulation of their occurrence in agricultural public stores and stores of State agricultural interventional fund.
- Public notice No. 329/2004 Coll., on preparation and further agents on plant protection.
- Public notice No. 330/2004 Coll., on taking precautions against bootstrap and dissemination of organisms harmful to plants and vegetable products.
- Public notice No. 331/2004 Coll., on measurements to safeguard protection against bootstrap and diffusion author of bacterial girdling of potatoes and author of bacterial brown rot.
- Public notice No. 332/2004 Coll., on measurements to safeguard protection against bootstrap and diffusion author of potatoes cancer, potatoes nematode worm and yellowish nematode.
- Public notice No. 333/2004 Coll., on skilled qualification on the phytosanitary cares section.
- Public notice No. 334/2004 Coll., on mechanisation means on plant protection.
- Public notice No. 175/2005 Coll., on expenses compensation for expert acts fulfilled by the State Phytosanitary Service.

After the accession of the Czech Republic to the European Union changes of phytoquarantine demands on trading with plants and vegetable produces became necessary. There is no requirement for plant goods from EU member states to have a so-called phytosanitary certificate at its shift among member states. This obligation henceforth stays only for imports of goods native from third countries (outside of the EC). Current protective measures against bootstrap or harmful organism dangerous to plants or vegetable products within the Czech Republic are governed by the following process. The European Commission sets up phytosanitary requirements for transporting plants and vegetable products on the domestic EU market. A risk is largely represented by plants of definite botanical genus or determined to further prosecution, then the reproduction material (seed for sowing and seedlings), young plants for further cultivation and grown plants in flower-pots, containers or shipped with package.

At introduction of these hazard plants and vegetable products to circulation it is, however, necessary to investigate their origin by return trace up, i.e. to search for their grower, importer or producer. The aim is that enable the phytosanitary service as soon as possibilities to disclose pertinent sources of pests and plants agent occurrence in order to take in time the necessary measures to prevent their further diffusion. The so-called phytosanitary passport is the main measure for identifying the plant origin on domestic markets of the EC. Primary data on the passport is the registry number of importers, growers or producers, which has put the respective plant part on the market.

8. Forest reproductive material (24 Commission Decisions, 5 Commission Regulations, 1 Commission Directive)

Directives determining rules for dealing with the reproductive material are included in Czech legislation through the Act No. 149/2003 Coll. and the following Public Notices No. 29/2004 Coll. on marketing of forest-tree species reproductive material and Public Notice No. 139/2004 Coll. determining peculiarities on seeds and seedlings of forest-tree species transmission, on record keeping of this material origin, and on forest stands regeneration and afforestation of lots to fulfil the role of forest. Municipal and regional authorities are the auditing bodies of the state concerning activities with reproductive material. Entrusted legal person by the course of the Act 149/2003 Coll. became the Forest Management Institute (UHUL). This institution covers all activities dealing with forest-tree species material.

9. Classification of timber in rough (1 Council Directive, 1 European Parliament and Council Decision)

Directives and Decisions of the Council were implemented to the Czech legislation in the frame of the Public notice No. 391/2003 Coll. Classification of rough timber isn't virtually used, because agreements among suppliers and customers proceed in the whole Europe on the basis of other given rules. Old fashionable appropriate Council direction was cancelled in 2007.

10. Boards with forestry and timber themes (3 Commission Decisions, 1 Council decision)

Since 1998 the Czech Republic was represented in the Standing Forestry Committee by an observer; after EU accession our country has a regular representation in this Committee.

11. European Union forestry policy (1 Council decision, 2 Commission Communications, 1 Council Regulation, 1 European Parliament and Council Regulation)

The Czech Republic government adopted state forestry policy in 1994 in response to political changes in 1989. In 1995 the Parliament adopted the Forest Act No. 289/1995 Coll., which laid the fundament of a newly conceived forestry legislation reflecting the new political situation and responding to the Pan-European process on forest protection. Fundamental principles of the law are indicated in §1 stating that the object of the law is determining the framework for forest protection, forest tending and forest reproduction as a national wealth, forging irretrievability components environment, ensuring the fulfilment of all forest functions, and supporting sustainable forest management.

The Czech Republic has responded to EU forestry policy by adopting the National Forestry Programme in 2003 (NFP I), which reacts to up-to-date directions and stimuli in the area of forestry policy and includes measures for impletion. It has been broadly discussed on expert level in 2007 and pursuant to the EU Forest Action Plan a new wording was made. Using the "bottom up" approach it has implemented the action plan under Czech Republic conditions. The government will discuss proposal of the new version of the National Forestry Plan for the period up to 2013 (NFP II) in 2008.

A comparison between key actions of the Action Plan for Forests and Forestry of the EU and those of the National Forest Programme of the Czech Republic shows the following:

Economic Pillar: Improving long-term competitiveness

- Objective FAP EU: To improve the long-term competitiveness of the forest sector and to enhance the sustainable use of forest products and services.
- Objective NFP CZ: To improve the long-term competitiveness of the forest sector and to enhance the sustainable use of forest products and services.

Key actions FAP EU	Key actions NFP Czech Republic
1. Examine the effects of globalisation on the economic viability and competitiveness of EU forestry	1. To improve economic vitality and competitiveness of sustainable forest management.
2. Encourage research and technological development to enhance competitiveness of the forest sector	2. To support research a technological development with the aim to improve competitiveness of forestry sector
3. Exchange and assess experiences on the valuation and marketing of non-wood forest goods and services	3. To improve assessing a marketing of non-wood benefits and services.
4. Promote the use of forest biomass for energy generation	4. To advertise and support usage of forest biomass for energy generation.
5. Foster the cooperation between forest owners and enhance education and training in forestry	5. To support the cooperation of forest owners.

Ecological Pillar: Improving and protecting the environment

- Objective FAP EU: To maintain and appropriately enhance biodiversity, carbon sequestration, integrity, health and resilience of forest ecosystems at multiple geographical scales.
- Objective NFP CZ: Improving and protecting the environment.

Key actions FAP EU	Key actions NFP Czech Republic
6. Facilitate EU compliance with the obligations on climate change mitigation of the UNFCCC[10] and its Kyoto Protocol and encourage adaptation to the effects of climate change	6. To reduce the impact of prospective global climate change and extreme meteorological phenomena.
7. Contribute towards achieving the revised Community biodiversity objectives for 2010 and beyond 14	7. Preservation and improvement of biological diversity in forests.
8. Work towards a European Forest Monitoring System	8. To evolve forest monitoring.
9. Enhance the protection of EU forests	9. To improve forest health condition and forest protection.
	10. To reduce the impact of previous and current ecological stresses.
	11. Achievement of balanced relationship between the forest and high (ungulate) deer.

Social Pillar: Contributing to the quality of life

- Objective FAP EU: To contribute to the quality of life by preserving and improving the social and cultural dimensions of forests.
- Objective NFP CZ: Contributing to the quality of life.

Key actions FAP EU	Key actions NFP Czech Republic
10. Encourage environmental education and information	12. To support improvement of forestry workers social situation.
11. Maintain and enhance the protective functions of forests	13. To improve income form forests and forestry (forest goods, services) for rural development.
12. Explore the potential of urban and peri-urban forests.	

Communication and Co-ordination Pillar: Fostering coordination and communication

- Objective AP EU: To improve coherence and cross-sectoral cooperation in order to balance economic, environmental and socio-cultural objectives at multiple organisational and institutional levels.

- Objective AFP CZ: Fostering coordination and communication.

Key actions FAP EU	Key actions NFP Czech Republic
13. Strengthen the role of the Standing Forestry Committee	14. To improve forestry weak position in the frame of public administration.
To improve general public information on real status of forests and needs of forestry.	15. To improve general public information on real status of forests and needs of forestry.
Forests in the state ownership.	16. To solve institutional relation between state and forest (forestry).
16. Strengthen the EU profile in international forest-related processes	17.Forests in the state ownership
17. Encourage the use of wood and other forest products from sustainably managed forests	
18. Improve information exchange and communication	

12. Financial matters and structural funds (9 Commission Directives, 21 Council Directives, 3 Commission Decisions)

The EU financial matter legislation concerns particularly direct back payments for farmers and regulates the use of financial means of the European Agricultural Guarantee and Guidance Fund (EAGGF), of the Cohesion Fund and of the European Regional Development Fund. The Czech Republic reacted during the preparation period to accession into the EU and is ready for using the available EU financial means. EU regulations concerning financial matters of the agrarian sector are only marginally related directly to forestry.

13. Environment (3 Council Directives)

Council directives were implemented in the Czech legal order through Act No. 114/1992 Coll. on Nature and Landscape protection and by Law No. 123/1998 Coll. on the right of access to environmental information. Parts of forests are placed in specially protected areas (SPAs). They are classified in accordance with provisions of the Law No. 114/1992 Coll. Forests in specially protected areas with various degrees of protection amount to approximately 750,000 ha presenting 28,4 % of total forested area of the country. The surface of protected area related to the territory of the state and the number of protected tree species and birds exceeds slightly the European average. The grid of small-scale and large-scale protected territories has been created thanks to the long-termed tradition. Introduction of the NATURA 2000 programme led to a multiplication of protective regimes in some locations which does not contribute to the lucidity and unambiguous care on these naturally valuable localities. The principle of contracting protection is not used in spite of the fact that legislation allows it.

From analysed results of the spatial division of forests permanent units it is perceptible that in forests stands (strictly speaking sections) on the Czech territory forest mixed species composition prevails. Their area share exceeds 80 % of total forested land. The share of mostly open stands (with disseminated tree species up to 10 %) is less than 20 %, of which

one half is coniferous and the second half broadleaved. The share of broadleaved tree species has practically doubled within the past 50 years (1950 – 12,5 %, 2006 – 23,9 %). In spite of the fact that the share of broadleaved species and fir increased in forest regeneration (41,5 % in 2005) the share of autochthonous timber tree species and European silver fir under Czech Republic conditions is still inadequate. Specification is shown in the following table.

Coniferous and broadleaved forest stands

Clean forest stands (interspersed tree species up to 10%)	18,36 %
Admixture stands (admixture 10 – 30 %)	31,52 %
Mixture stands (admixture higher than 30 %)	50,12 %

Survey of the protected areas extent and number of protected objects in the Czech Republic on December 31, 2007

	Number	Area (1000 ha)	Share of the whole Czech Republic territory (%)
Bird areas	38	694	8,79
European important localities	879	725	9,19
Memorable trees – objects	4 963		

Category	Number	Area (1000 ha)	Share on the Czech Republic territory (%)	Forest cover percentage (%)	Area of natural forests (1000 ha)	Area of forests in long period left to self 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 natural monuments	105	3	0,03	57	0,3	0,1
National natural preserves	112	29	0,36	82	7,1	2,5
Natural monuments	1 198	28	0,34	70	0,5	0,1
Natural preserves	784	37	0,46	44	6	0,8
Total SPAs	2 228	1 249	15,83			
Memorable trees – individually		24 483				

14. Domestic market (4 Council Directives, 1 Council Decision, 1 Council Regulation)

Adopted Directions, Regulations and Decisions solved problems of the movement of persons and services in the agrarian sector of member states. These law acts from sixtieth till eightieth flight already was not topical in the time of the Czech Republic accession, because for

agrarian sector inclusive forestry common regulations started to be valid and movement of persons and services wasn't controlled in a diverse way from common adjustment.

15. Expert consultancy and education (2 Council Decisions)

Operating activities of the agricultural advisory system are set up in article 13 to 16 of Council Decision No 1782/2003. It represents a binding rule of law and to all EU member states (from May 1, 2004 onward also for the Czech Republic) with the following obligations:

- Up to the 1st January 2007 set up a complex consultancy system;
- Ensure consultancy minimally for the area of lawful demand on economy and respectively of agro-environmental conditions (Art. 13),
- Operate „an agricultural advisory system by one or more designated authorities or private subjects" (Art. 13),
- Under the voluntary joining in of farmers to the system, to preferred those ones, who get more than 15 000 € direct back payments annually;
- Ensure security of data received during counselling activities (Art. 15)

Some rules are till this time fixed only by the Regulation NR 1783/2003 (supplement c. 2), which is an amendment of NR 1257/1999. It sets up, among other things, the height of designated adjustment of charges for agricultural consultancy. Following Art 16 the European Commission should prepare the report on system functioning up to December 2010 with eventual suggestions how to make it obligatory.

The Forest Management Institute (UHUL Brandys) covers the economic-law consultancy in the forestry area. The Institute created a specialized group of experts for this activity providing forestry consultancy services. Main areas of the UHUL Brandys advisory services include:

1. European standards influencing forest management

- Protection of birds and natural habitats, free-living animals (wildlife) and wild plants - NATURA 2000
- Water protection in face of some dangerous material and nitrate pollution
- Principles of right usage and disposing of chemical preparations in forestry.

2. Optimisation of procedures setting up forest management with emphasis on environment protection

- Lawful demands on forest management connected with forestry legislation;
- Analysis of procedures leading to the management optimisation.

3. Measurements oriented to improvement economic viability of forest estates

- Forest management on principles of sustainability and equanimity;
- Certification systems in forestry;
- Associating of forest owners;
- Usage of nature friendly technologies at forest management;
- Incorporation of non-wood functions to the economy on forest estate and their pertinent improvement.

4. Use of forest-tree species biomass for further processing.

16. Research and technological development (2 Council decisions, 1 Council regulation)

In the frame of the Lisbon strategy adopted by the EU in 2000 there a national policy on Research and Development (R and D) has been elaborated in the Czech Republic for the period 2004 – 2008. It formulates relation of our state to research in a medium term perspective. According to the law No. 130/2002 Coll. on R and D support the priorities are to be realised by means of the National research programme. Its aims are the following ones:

- To ensure efficiency and effectiveness of research in the Czech Republic:
- To concentrate support sources and experimental capacities on a smaller number of problems;
- To ensure dynamic renewal and development of research capacities in the Czech Republic using all possibilities of international cooperation in research;
- To improve and develop public relations in order in view of public apprehensions from undesirable incidence of R and D;
- To increase the expert level of experimental work and the use of research results in practice.

The concept of R and D elaborated under the Ministry of Agriculture starts from two basic programme principles; the National policy of R and D for the period 2004-2008 adopted by the Czech Governmental Decree of January 7, 2004 No. 5; and the Concept of agrarian policy for the period after accession to EU for the period 2004-2013. In the area of forestry it is based also on the National Forest Programme, agreed by the governmental with Decree of January 13, 2003 No. 53. Among many topics of agricultural research the following thematic priorities of forest research are included:

- Sustainable forest management;
- Forests and forest management;
- Forest tree specie breeding and preservation of genetic resources of valuable and endangered populations;
- Stabilisation of the functions of forests.

In addition to the state Forest and Game Management Research Institute at Jiloviste-Strnady several private organisations operate in the field of forest research. Forest Focus is implemented by means of national programmes submitted by the EU member state in 2003-2004 and 2005-2006. The European Commission adjusted these programmes and approved its decision for years 2003-2004, 2005 and 2006 according to EU financial rules. Countries that have already realise previous project (France, Germany, Greece, Italy, Portugal and Spain), Finland, and one new member states that have accessed the EU and join to the project in the year 2004 (Cyprus, Estonia, Hungary, Poland, Slovakia and Slovenia) gear to the realisation of measurements for forest fire prevention.

The Regulation Forest Focus is oriented mostly on forest monitoring and on coherent data collection. As to fires, it offers the same extent of measurements against forest fires, already co-financed according to previous project, providing, that they are not included to the rural development programmes submitted by member countries. The EU financial frame for realisation of the whole project in the phase 2003-2006 was 65 mils. EUR. Approximately 9 mils of this sum were used for prevention of forest fires prevention. Regarding those limited sum it is clear that support granted to those project was almost symbolical.

The most considerable success of the regulation presents probably the continuous performance, improvement and dissemination of the forest fires database as a comprehensive and unique set of information on fires in the EU for the last decennium, and its connection to the European Forest Fires Information System (EFFIS), for further utilisation of its potential.

The Forest Focus measurement concerning forest fires relates to monitoring and data collection on forest fires in the EU countries. This database covers information sent by the EU member states according to common format. Their existence is presuming the continuity, improvement and dissemination of this uniform size database system according to previous project and known "common core database". At present the Joint Research Centre (JRC), a common research centre of the EU, manages the database.

Forest fires

Year	2001	2002	2003	2004	2005	2006	2007
Forest fire damages (mill. of CZK)	6,8	9,1	33,5	19,1	9,3	8,2	24
Number of forest fires	483	604	1754	873	619	693	847
Area damaged by forest fires in ha	87	179	1236	335	227	405	316

In closing

From the results presented in this paper one may conclude that the Czech Republic has well taken care of the implementation of the EU legislation in the field of forestry. EU regulations together with national legislation have a direct impact on forestry practices in the Czech Republic. Of importance were mostly those regulations that adjusted the forest-tree species reproductive material to the market, then the Forest Action Plan, the afforestation programmes of agricultural lands, NATURA 2000, and the financial regulations on implementation and forest monitoring.

In 2008 the Czech Government decided to prepare a new forestry strategy and conception with a view that this will lead to the preparation of the new forest legislation. This decision should support a development toward multifunctional forestry, stabilisation of state forests administration, improvement of forest health conditions, and to economic of the forest resources with a positive impact on employment in rural areas. The strategy should have three chapters addressing I Ecological aspects of forestry, II Economic viability and social aspects of forestry, and III Institutional aspects.

There was made a preliminary agreement and decision between Ministry of Agriculture and Ministry of Environment providing that the preparation of such a strategy will be based on the National Forest Programme II, which has just been submitted to the government. A completed documentation with strategic goals of forestry up to 2020 and operative realisation of concrete legislative, economic and other measurements in forest sector up to 2013 should be available in the second half of 2009.

Forest eco-compensation in the context of pipeline constructions in Georgia: Economic and legal aspects

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Abstract

Disagreement between the Government of Georgia and international oil corporations on eco-compensation measures required to off-set environmental damages caused by large scale oil and gas pipelines resulted in the application of the habitat-hectare methodology to define the necessary scope of eco-compensation measures for environmental damages related to the construction of the pipelines. The habitat-hectare scoring method is a common approach to determine the value of vegetation in non-monetary units. The environmental proxy used i.e. the "currency" in which the value of vegetation is expressed is the "habitat-hectare". The habitat score is derived by assessing a number of site-based habitat and landscape components against a pre-determined 'benchmark'. Benchmarks have to be defined for different ecological vegetation classes (EVCs).

Habitat area [ha] x habitat score = habitat-hectares

Since little information is available on the development of habitat quality of various forest communities (EVCs) in Georgia and since the data available for this ex-post assessment did not allow for a thorough assessment of biodiversity, the development of the dominant species in each EVC (as expressed in yield tables) was used as a proxy for the development of the habitat quality/value in each EVC. In total, 262 plots with a total area of 141.82 ha of land classified as forests were assessed using the habitat-hectare methodology. The total value of these forest areas amounts to 80.51 habitat-hectares.

The scope of the eco-compensation measures (i.e. the compensation ratio) required to assure that no net loss in forest habitats occurs depends on the period of time the party causing the deforestation can be committed to look after the afforestation, The compensation ratio required to assure that no net loss in forest habitats occurs was calculated for the totality of the forest areas in Georgia affected by the construction of BTC/SCP pipelines in decennial steps for care taking periods of 20, 30 and 40 years. Depending on the EVC and the condition of the forest at the moment of clearing the compensation ratio for the care taking period varied from 1:2,5 up to 1:6,8 ha.

1. Introduction - BTC/SCP-Pipelines in Georgia

The BTC/SCP pipeline projects cross the territory of Georgia on a length of 248 km with an average width of the right of way of 53 m. The route is characterized by very diverse ecological conditions and abundantly highly specific biodiversity which has been assessed only partially, so far - one of the reasons why e.g. the Environmental and Social Impact Assessment (ESIA) for the pipelines could be approved on a conditional basis only. Consequently, detrimental impacts to the protection of biodiversity, protected areas and forestry must be reduced to the absolute minimum and unavoidable residual environmental damages have to be offset by an appropriate eco-compensation scheme. This in particular

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applies to all impacts on forest ecosystems, which need to be evaluated and offset by adequate mitigation and eco-compensation measures with the goal to restore equivalent forest habitats[1].

BTC Co., the consortium unifying 11 national and international oil companies under the leadership of British Petrol, which has built and is operating the pipelines, has committed to restore equivalent forest habitats, to make sure that the Republic of Georgia, as the owner of the forests affected by the construction of the pipelines and at the same time representative of the people of Georgia who benefit from the extra-commercial functions of these forests, would not face any loss with respect to environmental goods and services.

Info-Box:
BTC and SCP Pipelines
The BTS/SCP pipeline projects linking oil and natural gas fields in the Caspian Sea region with European markets are of considerable strategic global importance and of particular economic importance for Georgia. The pipelines cross Azerbaijan, Georgia and Turkey and allow to annually transport up to 50 million tons crude oil (= 1 million barrel per day) and up to 50 20 billion cubic meter of gas to Europe. Since the pipelines do neither cross into Russian nor Iranian territory they are of considerable importance for Europe's energy supply security and are thus being attributed a very high geopolitical importance.

[2]

Negotiations on necessary eco-compensation measures began in 2005, *after* the formal inauguration of the pipelines. Up till now, the Government of Georgia did not find a basis to agree with BTC Co upon the scope of the required eco-compensation measures. Given BTC's initial offer to plant 150 trees per each 100 trees felled on the pipeline's right of way, this is hardly surprising. Given the dead-lock in negotiations and given the project's dimensions (see info-box), the Georgian Ministry of Environmental Protection and Natural Resources

[1] Draft "Memorandum of Understanding between BTC Co. and the Ministry of Environment Protection and Natural Resources of Georgia for Forest Eco-Compensation" (Version BTC Co. of 12 November, 2004; Revised by EA, MoE, GIOC)
[2] BTC Corporation

requested support from the World Bank in terms of international expertise and mediation with regards to:

- calculation of damages to forest ecosystems by the BTC/SCP pipelines construction activities according to the "net gain principle" "habitat-hectare" approach, and
- recommendations on the exact ratio for forest eco-compensation based upon modern methodologies and international best practice.

This assignment was contracted to Peter Herbst and Christian Susan.

2. Material and Methods

2.1. 'No net loss', 'Net gain principle'

The 'no net-loss' as well as the 'net gain' principles originate from discussions about sustainable development, and how to best achieve it. Sustainable development requires that 'development today must meet the needs of the present generation without compromising the ability of future generations to meet their own needs[3]'. Sustainable development provides for protection of healthy environments while at the same time healthy economies and thriving societies develop.

Strict application of the 'no net-loss principle' can lead towards a sustainable development path in countries which are richly endowed with natural resources and where economic development processes have not (yet) led to a critical reduction of the quality of the environment. In countries where past economic development processes have been carried out to the detriment of the environment, the application of the 'net gain principle' should help to 're-balance' the accounts. Simply put from a purely environmental point of view, net gain in this context means achieving a net environmental benefit[4]. From an economic point of view (i.e. from the point of view of the society as a whole as opposed to the financial point of view of a single investor) net gain means achieving economic development without causing negative impacts on the natural environment.

The legal framework is a crucial aspect: A precondition to apply the "net gain principle" is its inclusion into the regulatory framework and the provision of *legally binding* and *transparent* rules and regulations for calculation of offset ratios, there. In Georgia, however, neither the application of the 'net gain principle' nor the 'no net-loss principle' is explicitly found in the legal and regulatory framework.

Georgia is a country still generously endowed with forest resources, which have a rich and varied ecology. Nonetheless, maintenance of such forests as valuable stores for biodiversity and habitats for fauna and flora is not only a part of the National Biodiversity Strategy and Action Plan but also recognized to be of international importance[5]. Thus no net-loss must be allowed to occur in this domain. On the other hand Georgia tries to attract direct foreign investment to curb economic development. The construction of the BTC/SCP pipelines has brought much-needed direct foreign investments and job opportunities and thus contributed to stability and economic growth in Georgia. In order to ensure overall sustainability of Georgia's future development it had to be assured that further economic development occurs - but not to the detriment of the country's environment.

[3] World Commission on Environment and Development (Brundtland Commission), 1987
[4] Pollution probe, exploring applications of the net gain principle, 2004
[5] Caucasus mixed forests (PA0408), WWF

It is understood that BTC Co - in accordance with their formal commitments - will restore equivalent forest habitat to the necessary extent, where environmental damages and losses in habitat caused by the construction of the pipelines will be offset by an eco-compensation programme and no net-loss will occur in the environmental domain. Taking into consideration that the Government of Georgia (GoG) has already been compensated by BTC Co for the commercial value of the timber felled in the construction process of BTC/SCP pipelines (all forests in Georgia are state owned), restoration of the equivalent habitats necessarily will result in a net gain for Georgia from an strictly economic point of view: GoG has been compensated financially for the commercial loss of standing timber, and on top of that equivalent habitats will be restored.

It goes without saying that achieving such a net-gain from an economic perspective while assuring the occurrence of no net-loss from an environmental point of view, cannot be achieved by a mere replacement of the loss of standing timber at a planting ratio of 1.5:1 (i.e. 150 trees to be replanted for each 100 trees felled) as initially proposed in the ESIA[6]. If - and only if - the forest eco-compensation programme to be carried out by BTC Co will result in the restoration of the equivalent forest habitats it can be assured that no net-loss in *environmental* quality occurs and at the same time from an *economic* point of view a net gain is achieved.

2.2. Habitat-Hectare Assessment

The habitat-hectare scoring method is a common approach to determine the value of native vegetation in *non-monetary* units. The environmental proxy used (i.e. the "currency" in which the value of vegetation is expressed) is the "*habitat-hectare*".

Habitat area [ha] x habitat score = habitat-hectares

This method is applied to assess a number of site-based habitat and landscape components against a pre-determined 'benchmark'. Benchmarks have to be defined for different ecological vegetation classes (EVC). The benchmark for each EVC describes the average characteristics of mature and apparently long undisturbed biodiversity and native vegetation occurring in the bioregions in which habitats shall be assessed. The habitat-hectare exercise foresees an in-situ assessment of natural vegetation to collect a range of visually assessed information of several vegetation components across the habitat zone. The closer a certain forest society comes to the benchmark, the higher its habitat score will be. The highest score a forest society can achieve is 100%, i.e. the forest society has the characteristics of apparently long undisturbed biodiversity and native vegetation.

The habitat-hectare method has been developed in Australia. The Australian State Government of Victoria, Department of Sustainability and Environment[7], uses the following components and weights presented in Table 1.

Since at the time of this study the pipelines had already been built no pre-assessment of the then undisturbed right of way could be undertaken to support these calculations; only an *ex-post assessment* of the quality of the ecosystems affected by the pipeline construction could be carried out - however, based on existing data[8] availed to the consultants. It is obvious that based on this limited set of available data (which had been collected for totally different

6 Table 1-2 proposed mitigation measures, ESIA executive summary page 14

7 Vegetation Quality Assessment Manual – Guidelines for applying the habitat-hectares scoring method; Department of Sustainability and Environment; Government of Victoria; 2004

8 Saktkyproekti (Georgian Forestry Project) detailed forest inventory on the State Forest Fund inside the 44 m right of way for the Baku-Tbilisi-Ceyhan Pipeline, 2003 and secondary containment project and EDDF etc. 2005

reasons and under different approaches, but had to be used for this study due to the irreversibility of the original vegetation after clearing the right of way), a pragmatic approach had to be followed to allow the adoption of the habitat-hectare methodology to the - only available set of vegetation data.

	Component	Max. value (%)
Site condition	Large trees	10
	Tree (canopy) cover	5
	Understorey (non-tree) strata	25
	Lack of weeds	15
	Recruitment	10
	Organic litter	5
	Logs	5
Landscape context	Patch size*	10
	Neighbourhood*	10
	Distance to core area*	5
	Total	**100**

*Components may be derived with assistance from maps and other (e.g. GIS) information sources. [9]

Tab. 1: Components and weights used in habitat-hectare assessment in Victoria, Australia

These data-sets availed on the forest areas affected by the construction of the pipelines did mainly contain information on the dominant and co-dominant tree species and timber production related data, only. Since the data-set did contain only limited information with regards to biodiversity, the habitat-hectare assessment had to be focused on timber production related data, mainly. It is understood that this is a shortcoming of the actual approach but still the most reliable and objective methodology which possibly can be applied in such *ex-post assessment* data environment.

2.3. Applicability of the Habitat-Hectare Methodology

Any vegetation data required to assess the various site conditions are usually collected visually during in situ inspections of the areas under assessment. Any information required to assess the landscape context is usually derived from aerial picture interpretation or geographical information systems.

In the concrete context of this study, all relevant vegetation in the areas under assessment had already been removed and the areas been cleared and dug, several years ago. Thus only an ex-post assessment of the quality of the ecosystems affected by the pipeline construction could be carried out, based upon the data which were collected for the determination of classical financial compensation measures (detailed forestry inventory to identify premature utilisation of standing stock), GIS data and information contained in the environmental and social impact assessment (ESIA).

2.4. Identification of Ecological Vegetation Classes

The habitat-hectare approach so far has not been applied systematically in Georgia. Therefore, as a necessary first step, forests affected by pipeline clearings had to be sorted by Ecological Vegetation Classes (EVCs). Such EVCs had to be identified according to dominant and,

9 Vegetation Quality Assessment Manual – Guidelines for applying the habitat-hectare scoring method Version 1.3

where applicable, co-dominant tree species[10] (forest societies) and consequently benchmarks had to be defined for each EVC. In total 18 EVCs affected by the construction of the BTC and SCP pipelines could be identified during this study. The respective benchmarks could be derived from the descriptions of representative sample plots contained in the ESIA.

2.5. Components Used to Assess the Habitat-Hectare Score

Based on that information, all necessary components for local application of the habitat-hectare methodology could be identified; available data were cross-checked for reliability and weighed, as follows (Tab. 2):

	component	score
site condition	average DBH	15
	average height	15
	canopy cover	10
	no of trees per ha	10
	growing stock	10
	basal area	15
	vegetation/coppice	10
landscape context	neigbourhood	10
	distance to core area	5

Tab. 2: Components and weights used in habitat-hectare assessment in Georgia

2.5.1. Site Condition Indices

The relative high importance of tree growth factors (site condition indices) is a specific issue of this specific evaluation, which had to be done *ex post*, based on the detailed forest inventory by Saktkeproekti, where the design obviously was focused on collecting information on the commercial value of timber standing in areas to be cleared. Based on that, indicators on site condition components were assessed by comparing data collected in the field during forestry inventory with the relevant benchmarks.

component average DBH	
10-<20% of benchmark DBH	2
20-<40% of benchmark DBH	4
40-<60% of benchmark DBH	8
60-<80% of benchmark DBH	10
80-<90% of benchmark DBH	13
≥90% of benchmark DBH	15

Tab. 3: Component: "Diameter at breast height (DBH)"

If e.g. the average DBH of an area to be assessed reached 10-19% of the benchmark DBH, the score for this component is 2 points, 60-70% result in a score of 10 points, more than 90 % yield the maximum number of 15 points (cf. Tab. 3). Under this component, the average height of the dominant tree species in habitats/stands (estimated on the level of sub-compartment) cleared for the construction of BTC/SCP pipelines is compared with the average height of the dominant species for each of the applicable EVC benchmarks.

[10] The vegetation of Georgia (Caucasus); Gorgi Nakhutsrishvili; 1999

component average height	
10-<20% of benchmark height	2
20-<40% of benchmark height	4
40-<60% of benchmark height	8
60-<80% of benchmark height	10
80-<90% of benchmark height	13
≥90% of benchmark height	15

Tab. 4: Component "Average height"

The closer the average height corresponds to the benchmark value, the closer the habitat is expected to correspond to the criteria of mature and apparently long undisturbed vegetation (cf. Tab. 4).

component canopy cover	
10-<20% of benchmark cover	2
20-<40% of benchmark cover	4
40-<60% of benchmark cover	6
60-<80% of benchmark cover	8
80-<90% of benchmark cover	9
≥90% of benchmark cover	10

Tab. 5: Component "Canopy cover"

Under this component, the tree canopy cover of the trees in habitats/stands cleared for the construction of BTC/SCP pipelines is compared with the average canopy cover for each EVC benchmark (cf. Tab. 5).

no of trees per ha	
10-<20% of no in benchmark	2
20-<40% of no in benchmark	4
40-<60% of no in benchmark	6
60-<80% of no in benchmark	8
80-<90% of no in benchmark	9
≥90% of no in benchmark	10

Tab. 6: Component "Number of trees per ha"

Under this component, the number of trees per hectare in habitats/stands cleared for the construction of BTC/SCP pipelines is compared with the number of trees for each EVC benchmark (cf. Tab. 6).

component growing stock	
10-<20% of benchmark stock	2
20-<40% of benchmark stock	4
40-<60% of benchmark stock	6
60<-80% of benchmark stock	8
80-<90% of benchmark stock	9
≥90% of benchmark stock	10

Tab. 7: Component "Growing stock"

Under this component the growing stock of the dominant tree species in habitats/stands cleared for the construction of BTC/SCP pipelines is compared with the criteria of mature vegetation in each EVC class (cf. Tab. 7).

basal area	
10-<20% of benchmark	2
20-<40% of benchmark	4
40-<60% of benchmark	8
60-<80% of benchmark	10
80-<90% of benchmark	13
≥90% of benchmark	15

Tab. 8: Component "Basal area"

Under this component, the basal area i.e. the area in square meter per hectare occupied by trees in habitats/stands cleared for the construction of BTC/SCP pipelines is compared with the basal area occupied by trees in the benchmark for each EVC (cf. Table 8).

component coppice/regeneration/understorey	
no coppice/regeneration/understorey	0
single species coppice/regeneration/understorey	5
multiple species coppice/regeneration/understorey	10

Tab. 9: Component "Coppice/regeneration/under-storey"

This component assesses the existence and quality of coppice, natural regeneration and under-storey, and the habitat quality of the herbs-/grass-layer which are crucial components to determine the quality of a forest habitat.

As mentioned before, the underlying detailed forest inventory by Saktkeproekti was obviously carried out with the main purpose to collect information on the commercial value of timber standing in areas that had to be cleared for the construction of BTC/SCP pipelines. Not surprisingly, therefore, information on *coppice composition, quantity and height (+/- 5%)*; *composition, quantity and height of under-storey* (+/-10%) and *types of vegetation cover, % of coverage (+/- 10%)*, which following the inventory design should have been collected by the field crews at each sample plot, in many cases turned out to be not available in the quality which would have been necessary for that study, i.e., to compare such components with the respective EVC benchmarks. Consequently, these components could not be assessed

comprehensibly in the desirable level of detail. However, since these data are important indicators of forest habitat quality, which should not be left out in any habitat-hectare assessment, they were taken into account albeit in a less detailed distinction (cf. Tab. 9).

2.5.2. Landscape Indices

The assessment of landscape related components was based upon the interpretation of aerial photographs and surveyed GIS data.

neighbourhood component	
>0-≤20% of neighbourhood forested	2
>20-≤40% of neighbourhood forested	4
>40-≤60% of neighbourhood forested	6
>60-≤80% of neighbouhood forested	8
>80-≤100% of neighbouhoud forested	10

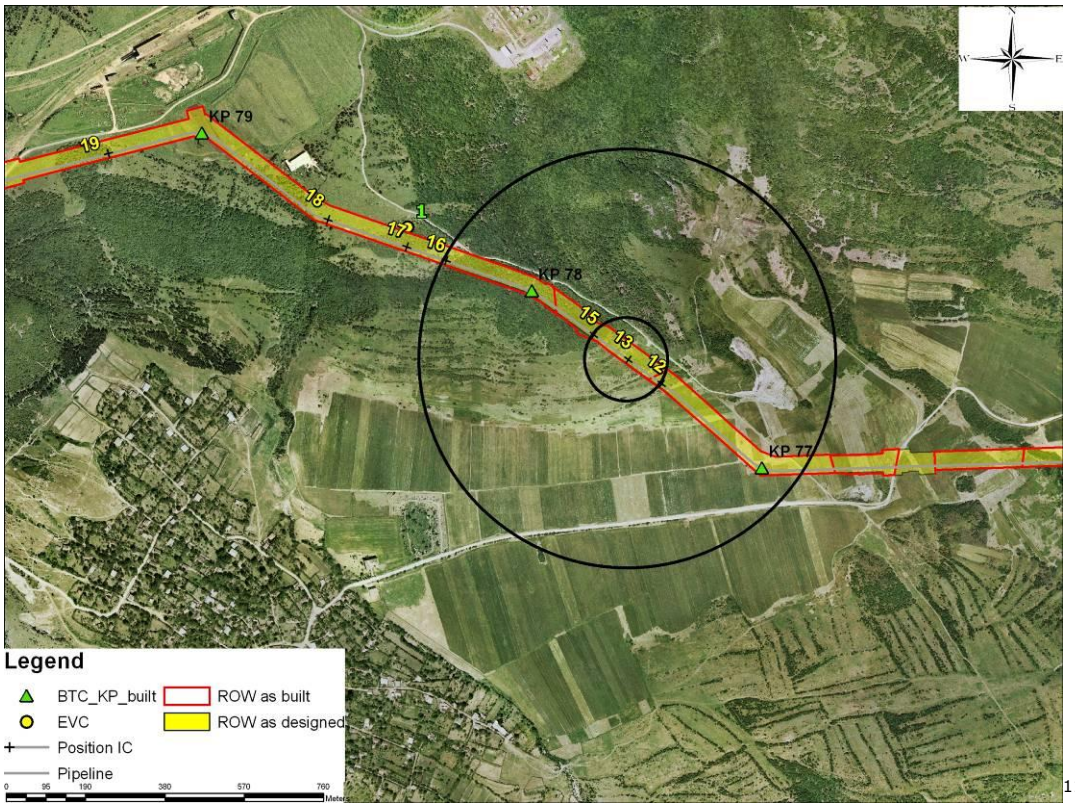
Tab. 10: Component "Neighbourhood"

The neighbourhood score indicates whether or not the patch of forest habitat under assessment is part of a larger forested area. This component reflects the importance of habitats to be interlinked with or in close distance from each other and the significance of the size of a forested area for its habitat quality. In our case, this component indicates the percentage of the total area within a radius of 1 km around the sample plot which is occupied by forested habitats (see Table 10).

distance to core area	
>1 km	0
>0,2 to ≤1 km	2
≤0,2 km	4
contiguous	5

Tab. 11: Component "Distance to core area"

The "distance to core area"-component of the landscape context assessment is an estimation of the distance to the next ‘core area’. For habitat-hectare assessments of forest habitats a ‘core area’ is defined as any singular patch of forest vegetation larger than 10 ha regardless of type and quality of this forest. Whereas a distance of more than 1 km does not result in any score points, a distance in between 0,2 km – 1 km results in 2 points, and a distance of less than 0,2 km results in 4 points and - if the area under assessment is part of a forest area larger than 10 ha, "distance to core area" would be considered "contiguous" and consequently be allocated 5 points (cf. Tab. 11 and Fig. 2).



[11]

Fig. 2: Component "Distance to core area"

3. Results

3.1. Calculation of Damages, in Habitat-Hectares

Calculation in habitat-hectares of damages to forests caused by construction of the BTC/SCP pipelines followed a *six-step* approach:

1. Based upon the dominant species indicated in the detailed forest inventory cards (regularly on sub-compartment basis), each of these forest areas affected by the construction of BTC/SCP pipelines was allocated to its relevant EVC.
2. To calculate scores for all site condition based components, the relevant indices (average DBH of dominant tree species, average height of dominant tree species, tree canopy cover, number of trees per hectare, growing stock, basal area, coppice/regeneration/under-storey) were compared with their benchmarks, and scores attributed accordingly.
3. Scores based on landscape indices (neighbourhood and distance to core area) were derived using a Geographical Information System (GIS).
4. The area consumption as foreseen in the project (i.e., designed boundaries for the right of way (ROW) and other project components) naturally served as a basis for the ex ante Saktkeproekti forestry assessment. Area related data therefore sometimes turned

[11] BTC Corporation

out to not fully reflect reality, as the area consumption "as built" differs in some locations from the area consumption as per the technical design. Thus, using a GIS, the forest area data were refined to the status of "effectively affected by the construction of BTC/SCP pipelines and other facilities".

5. Using these updated figures on areas as effectively affected, and multiplying them by their habitat score, the value for all the forest/habitat patches affected by the construction of BTC/SCP pipelines was calculated and quoted in habitat-hectares.
6. To determine the overall value of damages to forests/habitats within each EVC, the habitat-hectare values for each patch were classified and added-up according to their affiliation to their relevant EVC.

In total, 262 plots with a total area of 141.82 ha of land classified as forest, with an overall value of 80.51 habitat-hectares, were cleared for the construction of BTC/SCP pipelines. In addition, 37.15 ha of forest lands, representing a total value of additional 5.52 habitat-hectares[12], were found not having been stocked with trees. A summary of the results is presented in Table 12.

Ecological Vegetation Class	area [ha]	habitat score	habitat hectares
forest land with no standing stock	37,15	0,15	5,52
EVC 1 Georgian oak forest	17,41	0,62	10,82
EVC 2 high-mountainous oak forest	6,67	0,69	4,60
EVC 3 Georgian oak with high-mountainous oak forest	4,58	0,75	3,42
EVC 4 Georgian oak with Oriental hornbeam forest	7,70	0,81	6,25
EVC 5 high-mountainous oak Caucasian hornbeam forest	6,64	0,92	6,13
EVC 6 Caucasian hornbeam with oak forest	4,71	0,68	3,21
EVC 7 Caucasian hornbeam with high-mountainous oak forest	1,22	0,95	1,16
EVC 8 beech forest	7,53	0,84	6,31
EVC 9 beech with Caucasian hornbeam forest	1,18	0,88	1,04
EVC 10 beech with pine forest	5,26	0,73	3,85
EVC 11 pine forest	16,41	0,64	10,56
EVC 12 pine with high mountain maple forest	3,08	0,78	2,40
EVC 13 spruce forest	3,06	0,65	1,99
EVC 14 spruce pine forest	0,14	0,57	0,08
EVC 15 spruce fir forest	0,87	0,53	0,46
EVC 16 crook stem birch forest	0,95	0,92	0,87
EVC 17 riparian forest dominated by willow	10,03	0,65	6,51
EVC 18 riparian forest dominated by poplar	7,23	0,74	5,34
Total	**141,82**	**0,57**	**80,51**

Tab.12: Areas affected and damages in habitat-hectares for each Ecological Vegetation Class (data/results displayed rounded to 2 digits after the decimal point)

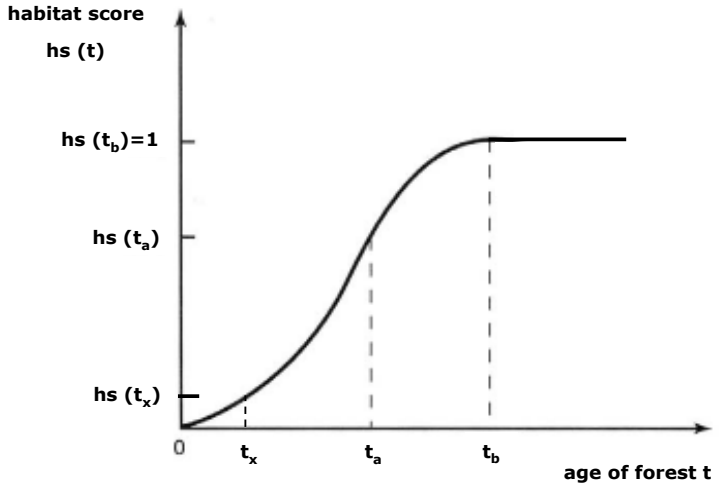
3.2. Determination of Scope for the Required Eco-compensation

The question that remained now was how to determine the scope of the eco-compensation to assure no net loss in forest habitat.

A patch of forest with an area of 0,4 ha and habitat score of 1,0 represents the relative value of (0,4*1=) 0,4 habitat-hectares. A patch of forest in the same ecological vegetation class with an area of 0,8 ha but a habitat score of 0,5 only represents the same value of (0,8*0,5=) 0,4 habitat-hectares; thus, according to the habitat-hectare assessment methodology, these two areas are considered equivalent. In the absence of anthropogenic influences, the habitat

[12] The results were calculated in detail for each plot, hereby only the summarized results of damages to forest habitats in habitat-hectares as per each EVC are being presented, while the results are shown rounded to 2 decimal places only, the calculations were carried without rounding, thus using the figures presented in table in a multiplication exercise might lead to slightly different results

quality of any forest society is assumed to increase over time ((h_s=f(t)) until the forest reaches conditions of maturity and apparently long undisturbed biodiversity and vegetation as presented in Table 13 (below). At that specific moment in time (t_b), the habitat score is "one" ($h_s(t_b)$=1).



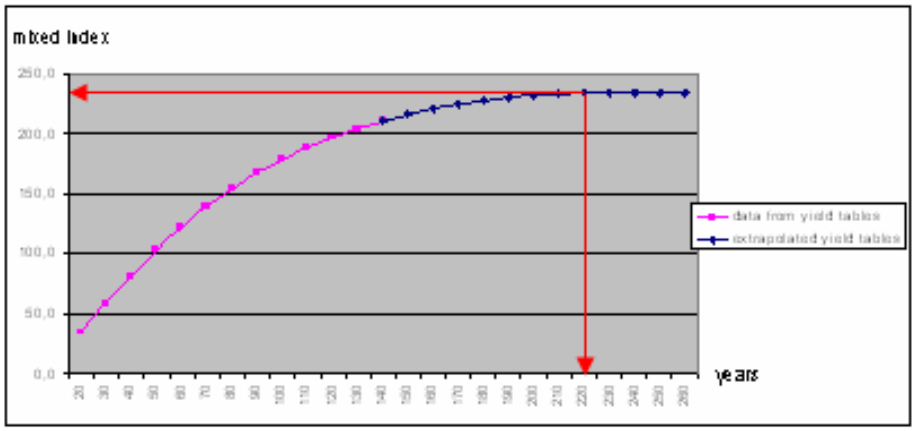
Tab. 13: Development of habitat score over time

Whenever it has to be assured that no let loss in environmental goods will occur, therefore, the factor "time" plays a crucial role for the determination of the scope of eco-compensation measures. E.g., assuming that a reforested/afforested area can achieve a habitat score of 0.2 after 20 years, a compensation ratio of 4:1 (i.e. four times the area to be reforested/afforested **and** looked after for 20 years compared to the original area deforested) would be required to compensate for the loss of a patch of vegetation representing a habitat score of 0.8 if "no net-loss" is to be assured. If the habitat score increases to 0.4 after 40 years, then the compensation ratio guaranteeing "no net-loss" in habitat value would be 2:1 (i.e. two times the area to be reforested/afforested and looked after for 40 years compared to the original deforested area).

That means, the longer the period over which a party causing forest damage to forest habitats by clearing tem, can be committed to look after the afforestation/reforestation activities and to assure growth and protection of the afforestation/reforestation as such, the lower the ratio between areas to be afforested/reforested and areas cleared can be kept, without any net loss in environmental goods occurring. Since little reliable information is available on the development of habitat quality of various forest communities (EVCs) in Georgia, data from standardized yield tables for the dominant and co-dominant tree species had to be used as a proxy for the development of habitat quality of a stand over time.

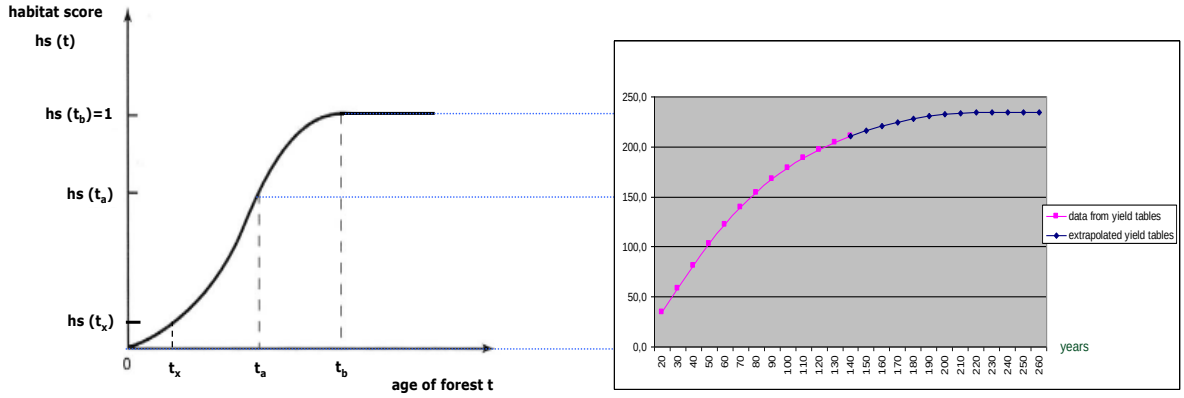
A mixed index was introduced, by calculating the arithmetic average of average BDH, average height, basal area and standing timber volume of the dominant and co-dominant species. This mixed index was extrapolated by specialist of the Georgian Forest Service beyond the periods of time (age classes) as covered by the standardized yield tables (see Table 14, below). In this context, it was specifically crucial to assess the moment in time when the gradient of the mixed index becomes zero. This point in time - where the gradient of the extrapolated curve becomes zero - is used to determine the moment in time (t_b) when the

habitat reaches benchmark conditions and to determine the corresponding absolute mixed index value.



Tab. 14: Determination of t_b and value of mixed index at t_b

The habitat score of an area under assessment ($h_s(t_a)$) indicates, in percent, how close this forest area reaches to the benchmark conditions (mature und undisturbed forest) at the moment of the assessment (t_a). This percentage can be transposed to the mixed index as presented in Table 15.



Tab. 15: Interrelations in between habitat score and value of mixed index

This allows allotting the corresponding value of the mixed index to each habitat score within each EVC and under the assumption of a corresponding landscape context.

The compensation ratio required, i.e. the ratio between area to be afforested / reforested and area cleared can be calculated in this way. This ratio corresponds to the quotient of a) the value of the mixed index at the moment for the equivalent eco-compensation and b) the value of the mixed index at the moment of the assessment.

This principle can be elaborated more plausibly in an example using concrete figures, as following: A forest stand to be assessed had reached benchmark conditions at an age of 220 years. The corresponding mixed index is 234,6. Assuming the habitat score for that area having been calculated to be 0,64, the corresponding value of the mixed index would be 150,1

(=234,6*0,64). If the values of the mixed index for an afforestation in this EVC amount to e.g. 34,9 after 20 years, 58,4 after 30 years and 81,5 after 40 years, the compensation ratio can be calculated using these figures: In case the party causing the deforestation can be committed to look after the afforestation for a period of 20 years, equivalence can be achieved if for each hectare deforested a compensation afforestation of 4,3 ha (150,1/34,9) is realized. In analogy to this example, the compensation ration for a period of 30 years can be calculated to be 2,6 (150,1/58,4) and for a care taking period of 40 years with 1,8 (150,1/81,5) only.

In this way, the scope of the eco-compensation measures required to assure that "no net loss" in forest habitats occurs was calculated for the all forest areas in Georgia which were affected by the construction of BTC/SCP pipelines in decennial steps, for care taking periods of 20, 30 and 40 years, respectively. Depending on the EVCs and the condition of the forests at the moment of clearing, the compensation ratio for the care taking periods varied from 1:2,5 up to 1:6,8 ha.

4. Discussion and Conclusions

One of the core reasons for the development of the habitat-hectare approach was the necessity to make habitat condition and quality accountable in native vegetation planning and investment decision processes. When applied in investment decision making processes, the habitat-hectare assessment of ecosystems, likely to be affected by a planned economic development activity, has normally to be carried out before the on-set of any such development activities. Only an ex-ante assessment allows all parties involved to objectively review the results of the habitat-hectare scoring exercise and to mutually agree upon the habitat-hectare score, which subsequently constitutes the basis for the determination of eco-compensation measures or biodiversity offsets.

Since the BTC and SCP oil and gas pipelines had already been built at the time of this study, at that stage only an ex-post assessment of the quality of the ecosystems affected by the pipeline construction could be carried out. The assessment was based on a set of data collected by the Georgian consulting firm SAKTYPROEKTI[13] previous to the construction activities. This detailed forestry assessment was contracted by BTC Pipeline Company as part of their obligations in the context of the ESIA and handed over to Georgian Ministry of Environment (MoE) for critical review and approval. Since the MoE did not contest the accuracy of these data and since an objective independent verification is no longer possible now, this set of data has to be considered to best possibly reflect the situation of the relevant ecosystems before any disturbances following pipeline construction activities. Even though this forestry assessment was conducted in a very detailed way, requirements of the habitat-hectare scoring exercise were not considered in the survey design to the desirable extent. In particular, classification of the forest associations into Ecological Vegetation Classes (ECVs) - as required by the habitat-hectare approach – was not undertaken by the surveyors in the field. After all, with all established shortcomings regarding accuracy and comprehensiveness, that set of data derived from the SAKTYPROEKTI survey still allows for the application of the habitat-hectare approach with a reasonable accuracy.

The proposed approach assures the restoration of the equivalent forest habitat, thus the approach is considered to be fair and equitable. The methodology takes into due consideration that forest habitats are extremely complex eco-systems, which need centuries before they can provide their full scale of environmental and habitat functions. The condition of forests at the

[13] Forest assessment and detailed forest inventory conducted by Geoforestdesign (Saktyproekti) for BTC Oil Pipeline, SCP Pipeline, 2003, as well as for Secondary Containment Project, Drain Down Reservoir etc, 2005

moment of clearing is taken into consideration in the determination of the eco-compensation ratio required to assure "no net loss" in forest habitat. Similar examples have shown that such times when natural resources could be sacrificed to economic development without any compensation for the associated environmental damages are – or by all means should be – over, today. To assure sustainable development, the true value of natural resources has to be reflected in the cost-benefit analyses of decision makers.

In the light of steadily higher pressures on natural resources which become progressively scarce, the proponents of economic development activities will be increasingly faced with comparable valuations of natural resources. The habitat-hectare approach has been intentionally designed in a way that assessors will not be required to show highly specialised expert knowledge on native vegetation. However, at least an intermediate level working knowledge of native vegetation is required, in order to produce meaningful results. For a systematic and country wide application of the habitat-hectares approach, assessors will need access to reference material developed by local scientific institutions (e.g. country wide Ecological Vegetation Class descriptions, regional benchmarks and maps). If the Government of Georgia intends to systematically apply this approach, relevant reference materials will have to be developed.

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Activities and significance of forest owners' cooperatives in Japan

Ikuo Ota [*]

Abstract

Japan is one of forest rich countries in advanced countries. Two third of the land surface, or 25 million hectares, are covered by dense forests. The majority of the forestland is owned by the private sector, and there are about 2.5 million households having forestland over 0.1 ha in Japan. The average area of individual forest owners is about 2.7 hectares, and most of them are very small in scale. Forest owners' cooperatives were established by the amended Forest Law in 1907. However, creating forest owners' cooperatives was not popular in those days. In 1939, legislation for forest owners' cooperative was changed, and newly designed forest owners' cooperatives were compulsory organizations in order to supply timber for national demand, i.e. military purposes. After World War II, the government reformed the Forest Law under the occupation by the United Nations, and forest owners' cooperatives were also totally reformed.

The present system of forest owners cooperative is determined by the Forest Owners' Cooperative Law of 1978. This law aims to improve the economic and social status of forest owners, to sustain forest inventory and to raise timber productivity by means of facilitating cooperative organization of forest owners, and to contribute to the development of the national economy. Major activities of forest owners' cooperative are as follows:

- Helping forest owners making forest management plans,
- Improving forestry practices such as plantation, weeding, or thinning according to the order of forest owner,
- Logging and sales of timber according to the order of forest owner,
- Pest control in member forests,
- Extension services for forest owners,
- Sales of forestry related tools and materials.

Forest owners' cooperatives are very important for most of small forest owners who cannot manage their forest well themselves. Recently, a consolidation of forest owners' cooperatives is going on by governmental direction. Average size of the organization is becoming bigger so as to strengthen their economic basis. There are 846 forest owners' cooperatives and about 1.62 million members altogether in Japan. The importance of forest owners' cooperatives has been increasing under the difficult situation of domestic forestry sector in Japan.

Keywords: Forest owners' cooperative, forest law, extension, plantation, subsidy, Japan.

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Introduction

Because of its climatic condition and human intervention 2/3 of the total land surface of Japanese islands is covered by forest. Of the 25 million hectares of forest 2/5 or 10 million hectare are artificial plantation forests. Most of them have been established with softwood species such as Japanese Cedar (Cryptomeria japonica), Japanese Cypress (Chamaecyparis obtusa), Japanese Red Pine (Pinus densiflora), and Japanese Larch (Larix leptolepis). The majority of plantations were created as expansive afforestation after the World War II, and are becoming matured now. The forest ownership pattern is as follows; national (31%), municipal (11%), and private (58%). Private forest is dominant but there are no giant forest companies in Japan except a few pulp and paper companies. Most of the private forest holdings are small in scale. There are about 2.5 million households owning forestland over 0.1 ha, and the average forest area of such individual forest owners is about 2.7 hectare.

Although forest resources are growing, forest production is shrinking in Japan. More than 60 million cubic meters of timber were produced annually in the 1960s while only 16 million cubic meters have been produced in recent years. Instead of domestic timber, imported logs, sawn timber, and wood chips satisfy the big demand of wood fiber in this country with 127 million people. Only about 20% of the annual increment of timber is cut and the rest is stocked year by year. Depopulation in rural areas is a severe social problem in Japan. The majority of young people tend to go out from rural towns to the city, so that only aged people are left in the countryside. Quite a few private forests are held by such households. Therefore, forest management as well as timber harvesting is becoming more and more difficult for private forest owners. Forest owners' cooperatives become the key organization in the rural forest sector under such circumstances. This paper describes the system, the activities, and the historical and present status of forest owners' cooperatives in Japan, and analyzes their importance for the country's forest sector.

Brief history of forest owners' cooperative in Japan

During the feudal era, i.e. before the middle of 19th Century, the great majority of Japanese people were farmers living in rural mountainous areas. Land titles of ownerships were not clear and forests belonged either to local landlords or to communities with a few exceptions. There existed rather strict rules for the utilization of forests so that they had been sustained for hundreds of years. After the Meiji Restoration in 1868, the new government introduced a whole new system of politics, economy, military, education, and technology from Western countries such as UK, France and Germany. A new land tenure system was also introduced and modern forest ownership was created. Most of the land which used to belong to feudal lords became governmental possession, so that not many large scale private forest holding were created in that period.

Because of rapid industrialization and militarization of Meiji government forest resources were devastated over the country, and landslides and floods occurred frequently in the late 19th Century. The first Forest Law was created in 1897 under such circumstances. The main purpose of the law was to protect forests from overuse (Ota, 2004). Forest Owners' Cooperatives were legally established in 1907 with an amendment to the Forest Law. Four different kinds of cooperatives were designated: practice cooperatives, silviculture cooperatives, road construction cooperatives, and protection cooperatives. However, not many people were interested in joining such cooperatives and only 3.2% of the private forest land was under the control of cooperatives in 1926, twenty years after the establishment by law. In 1939 the forest cooperative system was totally reorganized in order to come up to the

wartime timber demand. Private forests were obliged to supply timber for military purposes through forest owners' cooperative. Because of this unfortunate experience some people tended to have a negative impression about forest owners' cooperative for many years even after the war.

The present Forest Law was established in 1951 under the occupation by the United Nations. Forest owners' cooperatives also were totally renewed in the law. Two kinds of forestry cooperatives were designated; forest producers' cooperative and forest owners' cooperative. A forest producers' cooperative was an organization of the former communal forest which was collectively owned by village people. It was a special form of private forest and the area of such cooperatives was limited. On the other hand, forest owners' cooperative was a general cooperative for all the non-national forest owners including municipal forest, individual private forest, temple and shrine forest, corporate forest and others.

Basically, the unit of forest owners' cooperative was a natural village, and there were more than 5,800 forest owners' cooperative in early 1950s. In accordance with rapid economic growth in 1960s, activities of forest owners' cooperative especially timber marketing expanded so that merging of cooperatives accelerated with governmental support. In addition, teams of forest workers were created in the cooperatives as to increase harvesting in members' forests. Characteristics of forest owners' cooperatives in Japan today were formulated in such a way. Table-1 shows the trend of the number of forest owners' cooperatives. The number of individual forest owners' cooperatives has been decreasing as this was caused by a consolidation of the cooperatives; the total number of members or the total area has not been decreasing much through the years.

Table 1: Trend of the number of forest owners' cooperatives in Japan (1960-2005)

Year	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005
Number	3,905	3,077	2,524	2,187	1,933	1,790	1,642	1,455	1,174	846

Source: Forestry Agency (Each year) Statistics of Forest Owners' Cooperatives

Forest Owners' Cooperative Law

The system of forest owners' cooperative was designated in the Forest Law of 1951. However, with the growing importance of forest owners' cooperatives in the forest sector independent legislation for forest owners' cooperative was desired. Then in 1978 the Forest Owners' Cooperative Law was established. This law aims to improve the economic and social status of forest owners, to sustain forest inventory and to raise timber productivity by means of facilitating cooperative organization of forest owners, and to contribute to the development of the national economy (Article 1). The law designated the necessary and possible activities of forest owners' cooperatives. Necessary activities are as follows:

- Guidance of forest management to members,
- Forest management with entrustment by members,
- Accepting trust of members for forest management purposes,
- Pest control and other forest protection activities,
- Any activities related to above mentioned matters.

Major possible activities are as follows: Loan for forest owners, supply of forestry equipments, transport of logs, process of logs, sales of timber, process and sales of forest

byproducts, building and running forest recreational facilities, making forest plan, and information service for improvement of forestry techniques (Article 9). A forest owners' cooperative should be non-profit organization. It is prohibited to gain commercial profit for the organization itself. Therefore, in case of having surplus from its activities, the cooperative should give dividends to the members, i.e. forest owners, and the amount of dividends is considered in the accounting statement (Articles 4 and 7).

Forest owners' cooperatives have two different objectives: To sustain forest resources and to improve status of forest owners. This must be a unique feature of forest owners' cooperative in Japan. Forest owners' cooperatives are the organization for pursuing economic utility of forest owners, but are the organization for pursuing public benefit at the same time. Many of the governmental subsidies are provided to forest owners through forest owners' cooperative. To some extent, the government expects forest owners' cooperatives to play a role of branch organization of public office.

Structure and activity of forest owners' cooperative system

Forest owners' cooperatives exist in all of the 47 prefectures and their total number is 846 as of March, 2006. Total number of members participating in forest owners' cooperative is 1,618,386, and the total area of members' forest is 11,148,271 ha or 71% of private forests in the country. The system of forest owners' cooperative is constructed at 3 levels: Individual forest owners' cooperatives, prefectural federation of forest owners' cooperatives, and the national federation of forest owners' cooperatives. Individual cooperatives are located in local areas where the forests exist.

Most of the cooperatives used to be established in towns and villages as a unit but with the continuous efforts of consolidation a cooperative tends to cover more and more broader areas. Prefectural federation of forest owners' cooperatives are established in each prefecture. There are 46 prefectural federations in 2006. There is no federation in Osaka Prefecture because they have only one forest owners' cooperative. The role of a federation is to facilitate cooperation of individual cooperatives, to provide training courses for forest workers, to sell timber, and to financially support individual cooperatives. The national federation of forest owners' cooperatives is located in the capital city, Tokyo. Its role is to coordinate activities of forest owners' cooperatives, to be a window of access to the central government, to deal with national forest insurance, and with other activities such as advertisement and research related to forestry.

Within the 846 forest owners' cooperatives, 787 of them have permanent fulltime employees. The total number of such employees is 8,028, within that 470 are executives, and 7,558 are officers and workers. Breaking down of 7,558 officers and workers, 5,714 are male and 1,844 are female, and the average number in single cooperative is 9.6. In addition, most of the cooperatives employ engaged forest workers. There were 33,871 engaged forest workers in 2005. More than half of forest workers in the country are engaged in forest owners' cooperatives. Accounting of each forest owners' cooperative is independent, so that the financial status depends on activities of individual cooperatives. Even though each individual cooperative is not a big economy, the total amount of 846 cooperatives is rather big in the domestic forest sector. The total amount of subscription by members was 51.6 billion Yen and the total sale of all the activities was 230.8billion Yen in 2005.

Significance of forest owners' cooperatives

In 1964, the Basic Forestry Law was established. This legislation aimed to facilitate domestic forest production in the context of an economic boom of those days. Because of scattered ownership pattern of forest in Japan the law assumed that individual forest owners should play a central role in private forestry, and so do forest owners' cooperatives. Various governmental support programs such as construction of forest roads, creating log auction markets, and purchase of forestry machinery were carried out with the help of local forest owners' cooperatives.

Activities of forest owners' cooperatives have been expanding since then (Ota, 2002). Therefore, local forest owners' cooperatives have become the most important organization for small scale private forest owners who depend on their daily matters about forest management. Especially, silvicultural practices such as plantation, weeding, pruning, and thinning are among the main activities forest owners' cooperatives are providing for members. About 90% of plantation and the majority of pre-commercial thinning on private forestlands are done by forest owners' cooperatives.

The result of the activities of forest owners' cooperatives is shown in Table-2. There are two kinds of sales activities in the table. "Sales only" means an activity of timber sales that are harvested by forest owner and forest owners' cooperatives only selling the timber at their log market or other ways. "Production & Sales" means an activity that forest owners' cooperatives harvest and sell the timber by order from forest owners.

Table 2: Result of selected activities of forest owners' cooperatives in 2005

Activity	Utilization				Sales	
	Plantation (ha)	Weeding (ha)	Pruning (ha)	Thinning (ha)	Sales only (m^3)	Production & Sales (m^3)
Amount	18,722	108,499	24,986	201,286	2,040,499	2,817,707

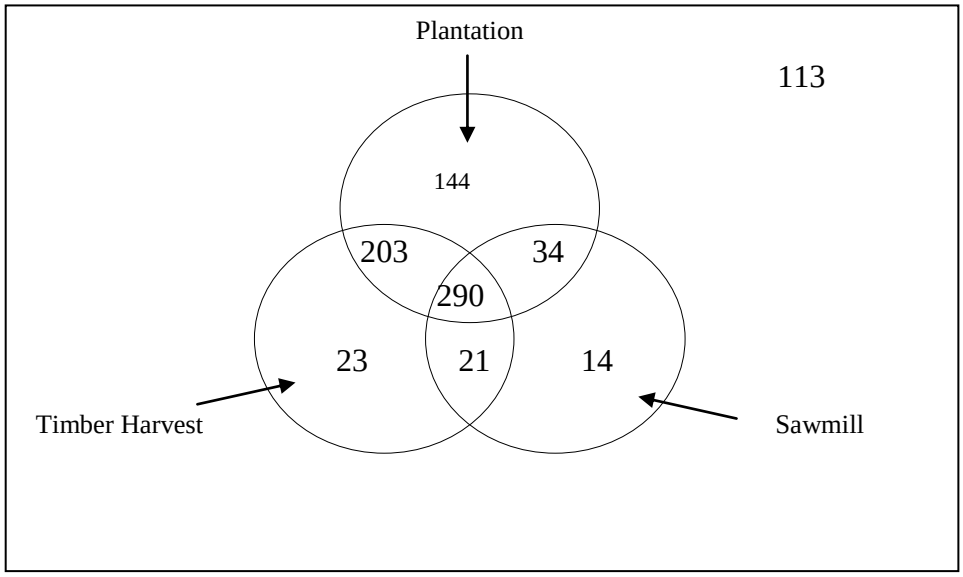
Source: Forestry Agency (2007) Statistics of Forest Owners' Cooperatives

The central government provides subsidies for forest management. The reason of such subsidies is explained as the enhancement of environmental functions of private forests. Therefore, plantation and primary practices after plantation such as weeding and thinning are subjects for governmental subsidy. The amount of a subsidy depends on the location, soil type, tree species and other factors. For example, in case of softwood re-plantation, the maximum amount of subsidy is 68% of the standard cost of the activity. Forest owners' cooperatives are the organizations that the government designated as a commission agent of such subsidies. Therefore, all subsidies from the government to forest owners must go through the forest owners' cooperative. That is why most of the primary forest practices are done by forest owners' cooperatives.

In addition to subsidized activities, forest owners' cooperatives are doing spontaneous activities such as timber production, timber sales, timber processing, and sales of forest by-products. Doing or not doing any of such activities depends on individual cooperatives, so that some cooperatives do many of these activities while others not. Figure-1 shows a number of forest owners' cooperatives of doing three major activities in 2005. Within 842 cooperatives, 671cooperatives or 79.7% did plantation activity, 537 cooperatives or 63.8% did timber production activity, and 359 cooperatives or 42.6% did sawn timber production activity. As shown in the figure, cooperative without these three activities were 113 or 13.4%. Under the severe condition of domestic forestry today, private forestry enterprises such as

lumberjacks or small sawmill owners are going to retire from their business. Therefore, the share of forest owners' cooperative in many fields of forest sector is increasing gradually.

Figure 1: Number of forest owners' cooperatives with doing three major activities in 2005



Source: Forestry Agency (2007) Statistics of Forest Owners' Cooperatives FY2005

Some cooperatives run souvenir shops of woody crafts and local foods, and others manage camping sites or rural tourism facilities. Thus, forest owners' cooperatives are contributing to the local economy in various ways, and they are one of the leading enterprises that provide employment for local people in many cases.

Table-3 shows the turnover of major activities in forest owners' cooperatives. With the downward trend of domestic timber production and prices, turnover of sales & production has been decreasing for decades whereas those of sawmill production and silviculture has not decreased much. This indicates the importance of forest owners' cooperatives for rural society in sustaining forestry.

Table 3: Turnover of major activities in forest owners' cooperatives (1990-2005)

Year	Timber Sales & Production (MM Yen)	Sawmill Production (MM Yen)	Purchase (MM Yen)	Silviculture (MM Yen)	Others (MM Yen)	Total (MM Yen)
1990	124,173	35,430	21,843	143,102	35,836	360,385
1995	102,287	40,709	20,956	186,772	38,246	388,970
2000	77,555	40,441	16,434	167,376	40,325	342,131
2005	57,190	34,290	12,221	111,287	40,685	255,673

Source: Forestry Agency (2007) Forestry White Paper FY2007; Forestry Agency (2007) Statistics of Forest Owners' Cooperatives FY2005

Yusuhara Forest Owners' Cooperative - An example of an excellent cooperative

Yusuhara Town belongs to Kochi Prefecture in Shikoku Island, located in the southwest part of Japan. The area of this municipality is 23,651 ha and 91% of its surface is covered by forest. Population has been steadily decreasing since 1950s; it was 10,651 in 1955, 7,011 in 1970, 5,407 in 1985, and 4,860 in 2000. This kind of depopulation is common in rural area of this country. Population of Yusuhara is 4,098 and the number of households is 1,794 as of March 1, 2008.

Because of large areas of forests and limited farmland, forestry is one of leading economic activities in this small town. Yusuhara Forest Owners' Cooperative (YFOC) was established in 1956 and has been expanding its activities since then. Membership is 1,245 households which means that almost all of the forest owners in the town are the member of YFOC. There were 36 fulltime employees and 33 engaged forest workers in YFOC in 2004. Almost all of employees are from Yusuhara Town. Activities of YFOC are any kind of forest practices and management in members' forest, road building, timber harvesting, timber sales, and sawn timber production as well as extension and information services for members.

Forest road density in Yusuhara is around 50m per hectare which is three times more than the national average. This is because of the continuous efforts by YFOC and Yusuhara Town. YFOC introduced GIS mapping on their members' forests in 1990s and is pursuing efficient forest management which individual small forest owners are not able to do. YFOC got a forest certification from Forest Stewardship Council (FSC) in 2000. It was the second organization that took FSC forest certification in Japan. The area of certified forest was 2,249 ha at the beginning, but it increased year by year and became 11,370 ha in 2007. The great majority of forest owners in Yusuhara are participating FSC forest certification scheme now.

YFOC runs a small sawmill. It was built in 1979 for processing small diameter logs that used to be sold at very low price or discarded formerly. Sawn timber production was not a big business for YFOC until recent years, but after getting FSC certification, things have changed. House builders in urban cities interested in using FSC labeled sawn timber for their house construction, and demand for FSC timber increased drastically since 2003. YFOC added a new line of sawmill and kilns for drying timber, and expanded sawmill production (Ota, 2006b). In 2004, net profit of YFOC was 81 million Yen and 32% of them were from sawmilling production. Regarding the fact that the share of sawmill profit in 1996 was only 0.3%, FSC certainly brought new business to YFOC. Even though timber price is very low and forestry is in bad situation, forest owners' cooperative like YFOC can contribute to forest owners by using its human resources as well as the growing forest resources in their home town.

Conclusion

As described in the paper, forest owners' cooperatives are indispensable for the forest sector in Japan today. The reasons for it are as follows:

- Private forest occupies a majority of land but most of them are small in scale. Therefore, forest owners' cooperatives are necessary for many of the owners to get bargaining power.
- Central government established Forest Owners' Cooperative Law and placed a special status on them. They are not only organizations seeking benefit for members but also organizations conserving forest as an environmental good.
- Organizational structures of national and prefectural federations of forest owners' cooperatives are well established.

- Central and municipal governments provide preferences such as silvicultural subsidies through forest owners' cooperatives because they are the representatives of private forests which have environmental functions.

There are more than 800 forest owners' cooperatives and over 1.6 million forest owners are the member of them. Total area of members' forest covers 71% of private forests in Japan. Considering the situation that no giant forest companies exist in the country, forest owners' cooperatives should be playing major role in domestic forest sector in the near future.

Forest production in Japan has been decreasing for more than 40 years. However, because of the decreasing volume of imported wood fibers in recent years, domestic forest production would increase from now on. In addition, forest resources are getting bigger and bigger because plantation softwood trees which have been planted after the World War II are getting mature nowadays. People's expectation and the importance of forest owners' cooperatives will be higher.

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Development of Lithuanian state forestry sector 1990-2008: New stage of evolution needed?

Imantas Lazdinis and Donatas Dudutis [*]

Abstract

This paper discusses tendencies of forest management examples in the state forests of EU countries. In all the cases forest management is organised on the principles of market economy and equity of all types of forest ownership, creating equal legal conditions both for the state and private forestry sector, and securing continuous supply of ecological, economic and social functions from the forests. This model allows economically effective management, maintaining relatively strong influence of the state over forest resources providing not only for economic but also for environmental and social functions as well.

The main regard of the paper is given to the size of forest enterprise. In several EU countries centralised companies responsible for management of all state forests are established. Similar evolutionary stages of Lithuanian state forestry sector development are proposed. Today the existing 42 state forest enterprises should be centralized in a first stage into 9 regional state forest centres which in a following second stage could remain as regional units of one centralised state forest company. Increase in size and centralisation has pros and cons. Such a forestry company could be attractive to large timber processing industries and increase economic efficiency in the sector. This study analyses, how such a centralisation may create a danger of monopolistic conditions in the round wood market and eliminate principles of fair competition.

Keywords: forest management, resources, forestry, enterprises.

1. Introduction

From 1990, the new European Union member countries have been solving issues of forestry sector reforms using legislative and market instruments. The main goal of such reforms is the restitution of private properties and the reformation of state forest management into a system complying with the requirements of a country enabling the creation of favourable conditions for market economy in the forestry sector. Working together with these countries, there is a need to find a proper management solution for the forests which, after the end of the restitution process, remain as property of the state. Both the forms of organization aimed at, and the whole process of reforms leading to them, depend on formal and informal changes at state institutions and the opportunities of those changes.

The greater share of forests in several European countries is property of the state and managed by big enterprises. The across-the-board saving policies resulted in reforms in the state forestry sector, and these reforms are related to efficiency increase, improvement of public services as well as getting closer to the citizens of the countries. In the area of state forestry management there is a strong tendency towards profit, especially if compared to the context of implementation of public goals. Much less attention is paid to the ecological and social functions provided by forest. That is why the strengthening of these functions shall be considered properly. Moreover, after substantial cut-offs in state sector staff numbers, new people experience vacancy problems and, however, these are the people with a great potential

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of new ideas. The dynamism of reforms both in "old democracies" and "new democracies" is stimulated by internationalization of forestry policies. It is obvious that forestry management policies in all European countries are in demand for a critical evaluation of the know-how of each country in the European context and in demand for innovation feasibility evaluations.

This paper is based on an evaluation of the status and development of organizational capabilities of forest management examples in state forests of EU countries. On the basis of the analysis of the kind of organisational structure, three types of bodies carrying out management/commercial functions in state forests were distinguished. It was designated, that in all cases forest management is organised according to the principles of market economy and equity of all types of forest ownership, creating equal legal conditions both for the state and private forestry sector, and securing continuous supply of ecological, economic and social functions from the forests. The research focuses on adjustment of experience of other countries to development of Lithuanian forest management.

2. Forestry sector management systems in European Union countries

Historically, the following forestry and state forestry management entities can be identified in European Union countries:

- Budget state institutions when revenues from forestry are substantially bigger than costs;
- Budget state institutions, when costs for forestry are substantially bigger than corresponding revenues;
- State enterprises that do not carry out state administration functions;
- State enterprises that carry out state administration functions;
- Stock companies/enterprises.

At the beginning of the last century, state management and economic management of forests was not separated. Forests were under administration and economic activities of state institutions such as ministries and their structural bodies – departments and local institutions. These organizations were called budget-supported entities. Later on, state management was separated from economic management; in the beginning on the highest level, and later at regional and local levels as well.

At present, EU state forests are managed by the following types of organizations: 1) stock companies, like in Austria, Latvia, Sweden, Hungary, and Ireland; 2) state enterprises, like in Czech Republic, Slovakia, Estonia, Finland, Lithuania, Germany, Poland, and France; 3) state enterprises that are supported (credited) from the state budget – United Kingdom, Denmark, Greece, Spain, Italy, Portugal. In countries with intensive forestry activities, the greatest share of state forests is managed by one enterprise. In this zone, Lithuania is the only country the forests of which are managed by 42 forestry structural entities. Hungary has quite a similar situation where forests are managed and supervised by 22 state forestry enterprises. The main principle of forestry management organization in the EU countries is the principle of vendor work in the area of development of integrated forestry activities. However, certain countries use the so called "household" (or economic) principle for ensuring the stability of forestry.

In the area of organizing forest exploitation works, all countries have a principle of timber sales based on assortment and many countries refuse the principle of "uncut timber sales" that still predominated during the last decades in certain countries. Some countries, like Germany, Estonia, Finland, Sweden and Scotland try to maintain the following ratio in timber

preparation: 1/3 of work is done on the "household principle" and 2/3 according to the subcontracting principle. The "household principle" of forestry activity organization predominates in forest seedling, young tree growing, and afforestation. It can be possible that both principles of forestry activity organization will be implemented in the near future. And the possible domination either of the principles will depend on forestry environment factors. Both the "old" EU member countries and the "new" EU member countries organize and control their forestry sectors with the help of information technologies. The development of information technologies creates conditions for a possibility of bigger-size of forestry entities. This can be obviously seen in the organizational patters of the forestry sectors of Estonia or Finland.

Forestry organizations that are responsible for state forestry management carry out the following functions:

- Stock companies carry out all economic management functions.
- State enterprises in the Czech Republic, Slovakia, Estonia, and Finland – also carry out "household type" of functions.
- State enterprises in Germany, Poland, France, United Kingdom (Scotland) – carry out "household functions" as well as forestry state control and other state management functions.
- State enterprises in Lithuania – "household functions" of management and staff of these enterprises where the staffs has the legal rights of forestry officials, also carries out forestry state control functions.
- Budget entities carry out all state and "household" management functions.

In EU countries, both state stock companies, and state enterprises pay the established taxes – social security contributions, income taxes of natural persons, and, in certain countries, also property taxes, value added tax, income tax, and land tax. State stock companies (in Austria, Latvia and Sweden) also pay dividends to the state budget from the profit they make. Specific payments to the state budget that are directly related with the usage of state forests are also paid in those countries where state forests are managed by state enterprises.

3. Comparison of the Lithuanian state forestry sector model with analogous models of other EU countries

After a detailed analysis of data, it is possible to maintain that EU countries have 4 forestry management types:

- A state enterprise working under the principle of profitability (Lithuania, Czech Republic, Estonia, Slovenia, Finland, partially some forestry enterprises of some federal lands of Germany).
- A state enterprise (budget entity) supported by the state (United Kingdom, France, other countries).
- A stock company (Latvia, Hungary, Austria, etc.).
- A forestry entity having no status of a natural person working under the principle of profitability (Poland).

In all of the above mentioned and analyzed countries the state forest sector is managed by a single forestry entity. In unitary countries, there is a single (sole) entity per country, and in

federal countries (Germany, United Kingdom) – a single forestry entity per each federal land or federal unit. The functions of the systems of the Lithuanian state forestry sector are similar to other EU countries. All forestry management forms create strategies, implement strategic and corporate planning, and implement the plans of economic activities. In general, if taken from the functional approach, state forestry management systems in the EU countries do not differ, but, from the formal approach, there is a difference in the legal status of their structural subdivisions.

Areas of forestry activities of the units of the EU countries are similar. These areas cover forest growing and timber production. In addition, forestry entities of all countries implement the functions of public interests and provide services to the public. The greater part of forestry works, all forestry entities carry on contractual basis, and a smaller part – on a "household" (economic) basis. The main forest material – trunk timber – is sold on an assortment basis and as "uncut timber". The ratio of timber sales forms is established by each country based on country-individual priorities. In old EU member countries these ratios are long-established whereas new EU member countries, especially the countries that earlier refused timber sales in assortments, now are trying to develop this form of sales. The activities of public interests implementation in old EU member countries the forestry entities are carried out on the basis of support from the budget or from financial means of service receivers. In this respect, the Lithuanian state forestry sector differs from other EU member country state forestry sector essentially.

For conclusion, it is possible to maintain that the Lithuanian state forestry sector is integrated, intensive, multi-purpose, coherent, and sustainable, and it complies with the principles of integrated forestry management as applied in other EU countries.

4. Basis for improvement of the state forest management system

In the development of the industrial society the following 4 concepts can be identified based on which (economic) entities develop their activities: 1) production process improvement; 2) improvement of the product (article, manufactured items); 3) improvement of trade systems and approaches (making trade efforts more intensive); 4) satisfaction of consumer needs. A gradual transition from the phase where main emphasis was put on production for the satisfaction of consumer needs is related in increasing the importance of the demand-supply ratio. Modern society which is also called information society or knowledge society has higher standards for products demands. The theoretical basis of modern society development is the concept of social responsibility of the producers. It means that products (items) as such are no longer the priority and that priority is taken over by a demand for services. And services or activities related to the implementation of public services demands attain special importance. Modern world experiences are subject to very dynamic changes and no one can forecast what the economy and/or forestry sector of a country will be in 10 or 15 years.

Analytic experts of "The Economist Intelligence Unit" bureau (http://www.eiu.com/) estimated that by year 2020 the following factors will have an impact on human activity:

- Instability of activity environment – the complexity of the environment will increase, the speed of the environment will change and it will be more and more difficult to foresee the changes in the near and distant future.
- Activities will become "mass-type" in their very character (democratization) - society will take greater interests in a variety of activities having an impact on the functions of public strategic interests, namely: 1) protection of environmental conditions, and 2) social responsibility.

- Globalization – deletion of distances and boundaries, transfer of activities, products, technologies, and processes.
- Growth of companies and their branches - concentration of activities, increase of independence of various structural entities (decentralization of management).
- Demographical changes of population – the average age of the staff will increase with older people predominating and younger people becoming a subgroup that will only create a certain background.
- Qualitative achievements in the area of human resources – intellectual capacities of the human resources will be most valued. This is, in comparison and contrast, to previous values such as loyalty and discipline. The future will change the priorities into competence, pro-activeness and ability to learn on a permanent basis, and to have more knowledge than competitors.
- Goods and services will become much more personal. Producers, in cooperation with their clients, will do their best in the development of their products and services taking into special consideration specific needs of consumers and specific consumer groups.

It is obvious that such factors will have an impact on the forestry sectors. A need to improve forestry management entities and systems, forestry products (items) and services, forestry organization, and financing ways and methods will arise. The main purposes of such improvements will be coordination of the forestry system with the forestry activity environment. Such improvements can be implemented by: 1) by reforms, i.e. reorganization of the existing system based on the forecasted forestry environment that could probably emerge within the next 15-25 years, and 2) by means of permanent improvement, i.e. by carrying out monitoring of the forestry environment and adapting the existing system to changes of such an environment.

The following is needed for the improvement of the forestry system:

- Vision of forestry – a possible model of state forestry and state forestry economy in 10-20 years.
- Need for changes – needed for an efficient reformation and improvement of the functioning of the existing forestry system, and tailoring this system to the already existing forestry environment.
- Resources for implementation of the changes – sufficient resources will be needed for preparation and implementation of project changes.
- Political support – political decisions will be needed for the implementation of the changes in the state forestry sector. The present political decision regarding the management of the state forests is determined by the Law on Forests and, if this decision is changed, the Law on Forests will have to be changed accordingly.
- A necessity of fast small-scale achievements –obvious results of fast (annual) and positive changes and solutions will be necessary.

If such conditions do not exist, there is no necessity to reform or change the existing state forest management system. However, taking into regard the modern factors influencing human activities as indicted in the beginning of this chapter, it is obvious that the environment of forestry changes and that after 10 or 20 years it will have changed substantially. Based on that, state forestry system changes are a must and we shall have to prepare for them. The first

things to be done are optimization of the area of forestry entities followed by further improvements of the elements of the system.

5. Need for improvement of the Lithuanian state forestry sector management system

During the last 10-15 years around 85% of the European country forestry sector management systems underwent substantial changes. Almost in all countries, instead of multiple independent forestry entities, a single forestry entity was formed carrying out its activities on the basis of profitability, having much less structural divisions compared to the independent forestry entities that existed before reorganization.

In Lithuania, a radical forestry reform was implemented in 1990. The reform established integral forestry enterprises from the previously existing two types of forestry company subdivisions - budget enterprises involved in forest growing, and economic entities, involved in timber preparation and trade. This change was implemented on the basis that forestry enterprises involved in forest growing received financing from the budget where such finances were received from timber and other production sold. Later on, the forestry management system was further improved in 1992, 1994, and 2004. The present forestry management system covering 42 forestry enterprises was established under the Law on Forests of 2001.

The Lithuanian forestry management system that was created can be evaluated positively. This system does not work with losses and complies with the present environment of forestry. However, the last recent years revealed certain changes in the forestry environment. The environment of modern forestry is more and more affected by strengthening globalization processes. Due to that, the forestry environment is undergoing rapid changes, and such changes are becoming less predictable. That is why it became obvious that there is a need to monitor intensively and improve the Lithuanian state forest management system.

6. Proposed steps for further evolution of the Lithuanian state forestry management system

With the purpose of ensuring long-term sustainable development of the state forestry sector, efficiency of its activities and economic vitality, it would be reasonable to establish a single state-managed forestry enterprise the establishment of which could be implemented by stage-by-stage evolutionary process. In the primary stage, 9 units, having state enterprise status could be established based on the regional state forest centres. Such a number is not a random one. This number covers criteria based on which a forestry entity should cover 100-150 thousand ha of state forest land area with the annual cutting volumes of around 400 thousand m3 of raw material timber (Deltuvas et al. 2006).

If this way is chosen, it would be necessary to prepare the existing 42 state forestry enterprises for reorganization into 9 regional centres – state forestry enterprises with their subdivisions established in the previous forestry enterprises in order:

- to rearrange the functions of the forestry enterprise administration and forestry enterprise staff within the reorganized entities;
- to balance staff numbers of the reorganized state forestry enterprise administrations and to stabilize and balance the number of the administrative staff of reorganized state forestry enterprises and forestry companies taking into account the reformed functions, and the state forest areas under the management and supervision of state forestry officials;

- to foresee measures which enable centralized management, accounting, trade systems in state forestry enterprises after reorganization as well as the development of functions of presently used information systems of forestry enterprises as well as the development of others functions.

After performing these actions it would be possible to fluently reorganize (merge) state forestry enterprises into 9 regional centres – state forestry companies (establishing their divisions in the place of the previous forestry enterprises) where such centres shall, upon the right of trust, manage and use the state forests ascribed to them utilizing these forests as defined under appropriate laws. Such centres and their local divisions shall implement a variety of forestry related activities as well as other activities defined under regulations (by-laws).

In a later stage there will be a must to ensure an impartial and timely evaluation of reorganization effects and results as well as to organize the monitoring of the functioning of state forestry enterprise effectiveness and their economic vitality. After analyzing and evaluating the results and efficiency of such a reorganization, in several years, it would be possible to prepare, in a proper manner and adopt decisions on the main evolutionary phase – establishment of 9 regional centres and centralization of state forestry enterprises into a single forestry entity and to adopt proper methods, phases and terms (periods) for that. The above-mentioned regional centres should be reorganized into 9 centralized state forestry enterprise divisions. The functions of the former divisions, established under the 42 former forestry enterprises, shall attain the functions of the centralized body divisions and, later on, these 42 forestry enterprises shall be dissolved gradually.

7. Conclusions and Outlook

Advantages: Advantages of a centralized state forestry management system (of a single state forestry enterprise) can be identified as follows.

- Better possibilities for balancing of the revenue-related differences that arise due to differing forestry conditions (such as managed forest area);
- Reduction of administrative costs by centralizing accounting, inner audit and other "service" functions;
- Better opportunities to optimize the functions of the staff thus enabling to maintain a bigger number of staff working directly in the forests and enabling a more effective implementation of modern management methods;
- Unified investment policy, more effective organization of public purchases and usage of invested financial resources (plant nursery, timber preparation, and other machinery, and etc.);
- A more effective timber trade system allowing for a more flexible response to market needs and changes;
- More possibilities for an efficient "absorption" of the negative economical impacts related to the unfavourable changes of market conditions (e.g. a rapid drop-downs in timber prices) or in cases of natural calamities;
- More opportunities for the implementation of a flexible staff working efficiency stimulation system (esp. for forestry specialists);

- Better opportunities for the improvement of the social security of the staff (after optimizing their functions and their number) and working conditions (better salaries, working instruments, better facilities, etc.).

Possible disadvantages: During the primary centralization phase, there can be a decrease of the initiative "from below" and due to that a decrease in activity efficiency; an increased risk of "incorrect" management decisions; possible accusations for monopolistic tendencies, and a possible decrease of competitiveness in timber markets.

It is to be emphasized that a decision which solution is of an interest of the society, and whether the new management system will contribute for the better or for the worse, usually becomes clear during a political process and, most of all, it depends on the opinion and voice of the society itself where the society has a direct impact to the decisions of politicians. Despite that, even if the management reform is usually oriented toward a more effective economical and administrative model search it still remains foremost a political task. Without a political decision related to the correction of an existing situation that may constitute a threat for the economic vitality of the Lithuanian state forestry sector such a situation can dangerously remain.

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Collision between regulations in forest laws and hunting legislation in the Republic of Moldova

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Abstract

According to the Wildlife Law and the Forest Code there are three principal authorities responsible for management and control of the hunting fund: first, the forest authority which wants to improve the hunting economy but does not have sufficient money to do this work; second, the environment authority which wants to protect wildlife without exploitation; and third, the local authorities having even nowadays game problems wishing to participate in privileged hunting as long ago. In consequence, agricultural lands as part of wildlife habitats are administered by local authorities and managed by the Society of Hunters and Fishermen while the central forest authority manages about 800 forest units from 0.5 ha to 1,500 ha spreading on the whole agricultural territory. But wildlife does not ask who the manager is and during the winter many species prefer forest habitats while during summer they prefer corn or other fields. The problem is much more complicated since agricultural lands are divided among a multitude of private owners not accepting wildlife damage to agricultural crops. The wildlife crisis can be attributed to a range of factors: poaching, out-of-date legislation, and lack of educated staff and capacity building. Investigations point out that wildlife management is in conflict with sustainable forest management, agriculture and livestock farming which constitute together the livelihood for most part of local population. This study highlights the fact that existing legislation presents an obstacle for communities to understand and realize the utility wildlife management.

Keywords: wildlife, management, natural resources, carrying capacity

1. Habitat description

The Republic of Moldova, (45°28´-48°30´ N, 26°30´ - 30° 05´ E) is an area of tangency and partial interference of geographic regions: Eastern Carpathians, Plateau of Podolia, Eastern-European Plain and Coast of Black See. This territory represents from a biodiversity point of view typical macro-ecotones that include taxons not only on a level of population, species, and ecosystem but also on a biome level (deciduous forests, steppe, forest steppe) with Central- European, Mediterranean, and Euro-Asiatic representatives (Negru, 2002). Significant is the phenomenon that those taxons of flora and fauna are situated on the limits of (East, West, South and North) of their natural areas – a fact that creates for all natural biodiversity levels an advanced degree of vulnerability.

Having a hilly character the country is slightly inclined from the northwest to the southeast, and gradually descends from 400 to 150 m altitude. Moldova has a temperate-continental climate. The mean annual temperatures vary from +7.8 °C N to +9.9 °C S and mean annual precipitations vary from 486mm S to 617mm N. The depth of snow during winter may vary usually around 0-20 cm. The hydrographical network consists of 3 260 rivers and rivulets with a total length of above 16 000 km. There is a wide range of soils in Moldova, the most prevalent being chernozems (black earth) covering 75 percent of the country. Of the total area of 3 384 357 ha 57.6% is used as agricultural lands, 9.1% as localities lands, 17.84% as reserve fond occupied by pastures, forest protected belts and roads, 1.8% of lands are destined to industry, transports communications etc., 11.4% to the forest fond, 0.06% land to nature

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protection, historical-culture value, etc., and 2.2% to water funds (18). At present, the hunting fund covers a surface area of 2.8 million hectares with the largest part being occupied by open landscape (19). Hunting lands are considered areas of land, forest and water funds that constitute the habitat for wildlife (Wildlife Law, 1995).

Moldova has at present 325 400 ha of forests that means 9.6% of the country's territory. Qualitatively, the forests of Moldova consist predominantly of broad-leaved trees (97.8%). The current group structure of stands is mostly unbalanced. The average rotation of a stand is 40 years, with young trees representing 26.3%, middle-life trees 43.7%, pre-exploitable trees 17.5%, and exploitable trees 12.5% (Gulca and Herbst, 2005). The situation has worsened because 800 forest units with a surface from 5 to 1500 ha are distributed differently in agrarian ecosystems. Wildlife habitats are fragmented by 1680 localities with an average density of 119 inhabitants per km^2.

2. Wildlife Evolution

According to Averin et al. (1975) during XVIII-XIX centuries were disappearing from this region European bison, aurochs, Saiga tatarica, tarpan, moose, red deer, bear and lynx. The vestiges of forests harbour at the beginning of the XX century only two species of ungulates: roe deer and wild boar (Fig.1.). According to Tiscevici and Bordiug (1973) after the 2nd World War the forest cover decreased to 4% that led the populations of roe deer, wild boar, and marten to the limit of disappearance. Together with people restoration, in the beginning of second half of XX century, occurred a slow natural recovery of wildlife when leading factors of natural mortality were wolf predation and disease/starvation.

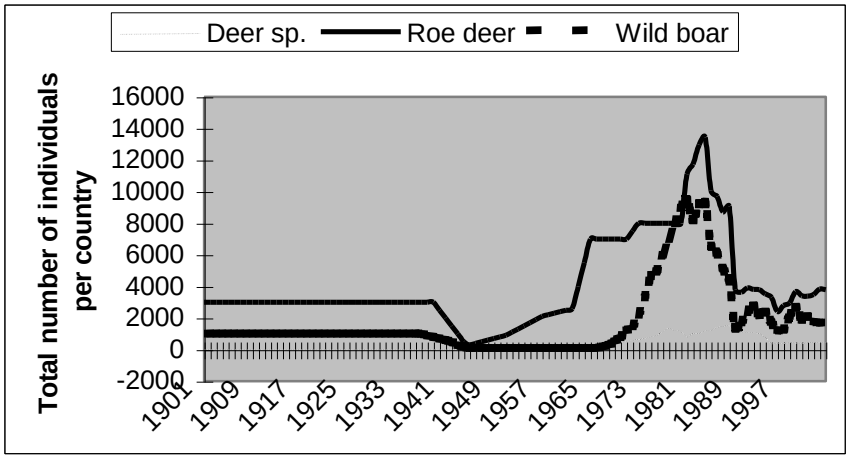

Fig. 1: Variation in total number of principal ungulates in Republic of Moldova 1904-2004

During the period of 1954-1982 were made ten reintroductions of red deer, four introductions of maral from the Natural Reservation Askania Nova, Ukraine, seven introductions of sika deer and two introductions of fallow deer. An interesting feature of this period was the simultaneity of actions for wildlife restoration and protection (e.g. hunting prohibition or reintroductions of red deer) with actions that led to wildlife (European mink *Luterola luterola*, otter *Lutra lutra*, bustard *Otis tarda*) extinction (e.g. bog draining or steppe fallowing on thousands of hectares). During the period 1960-1970 over 20 000 ha of slopes were worked (subsequently these areas were lost as a result of erosion and gliding); also over 80 000 ha of marshes were drained; as a result land utilisation reached at the end of the 80th the limit of 90% (Capcelea, 1996). According to Gania (1968) in the post-war period application of dust DDT (15-20 kg/ha) was made almost over all forest areas of Moldova (209 thousands ha) that

led to death of many wild vertebrates. Concentration of agricultural production, intensive chemization and irrigation, livestock industrial development was in permanent need of new land and more fodder. The reduction of wildlife habitats caused extinction of many wild predators and raptors. Moreover, most of the predators and raptors were persecuted as harmful for agriculture, livestock and people. Wolf considered as most dangerous disappeared in the middle of 80th completely in Moldova. Sometimes during winter wolf could migrate for a short time from Romania crossing the frozen Prut River. Unfortunately stray dogs, now counted at more then 10 000, occupied wolf's niches. A more steady component of predators community is fox the number of which varied between 20-25 thousands individuals during 1967-1968 (Uspenskii, 1972) and 15 000 individuals actually.

3. Carrying capacity

Sustainable wildlife management imposes as a condition to know as accurate as physical potential provided by land for the existence of hunting species. The conditions of any hunting unit to assure food, shelter, and breeding optimal conditions for a certain number of species is named carrying capacity. The term of carrying capacity, introduced in wildlife science by Leopold (1933), became one of the most common phrases in wildlife management. The author of this term and many other wildlife researchers understood by carrying capacity mainly the nutritional capacity as the base factor determining the number of animals in a given habitat. Some of them are referring as well to other factors which affect to a certain degree and often limit the caring capacity for hunting lands.

According to (Caughley & Sinclair, 1994), the term covers a variety of meanings and unless we are careful and define the term we may merely cause confusion. These authors understand under ecological carrying capacity the natural limit of a population set by resources in a particular environment; economic carrying capacity is thus the population level that produces the maximum sustained yield for culling or cropping purposes in the context of particular land use requirements. With a goal to establish criteria for carrying capacity in Moldova we have analysed methods and opinions from different countries (Gulca, 1997). Confronting different methods and wildlife conditions in Moldova we selected the principal key habitat factors. As from all 2,8 million hectares only a part are suitable for red deer, roe deer, wild boar and pheasant (Table 1) we estimate minimum and maximum optimal number of hunting animals for suitable habitat area. Taking in consideration the optimal number of animals at the end of winter and the average annual natural growth we estimate also minimum and maximum sustained yield.

4. Management and legislation

In the beginning of XXth century concerning to the Game Law (1923), hunting animals belonged to the owner of land where it was found. In the post-war period wildlife became the domain of the state but with an evident lack of a legislative base necessary for wildlife management. Taking in consideration the critical state of wildlife number at the end of the 1950ies were elaborated the legislative and economic bases for wildlife management. The organisation of hunting units was realised by Decision "About measures for improving of wildlife management", by the "Law of protection of nature and rational utilisation of natural resources", by decision "About next improving of nature protection and rational utilisation of natural resources", and by "The regulation for game economy". In the beginning of 1980ies all hunting lands were in the administration of the Forest Ministry. Hunting lands were divided in three categories: 1) annexed to the state, cooperative and collective organisations;

2) state forestry enterprisers; 3) reservation and prohibited zones for hunting (zones along the border).

Table 1: Estimation of minimum and maximum optimal number and sustained yield of hunting animals

Species	Suitable habitat surface, ha	Optimal number				Annual natural growth, %	Sustained yield		Actual number
		IV carrying capacity		I carrying capacity			IV carrying capacity	I carrying capacity	
		1000ha	Total	1000ha	Total				
1	2	3	4	5	6	7	8	9	10
Red deer	150000	1	150	20	3000	15	23	450	450
Roe deer	325000	12	3900	60	19500	20	780	3900	3800
Wild boar	325000	4	1300	20	6500	40	520	2600	1750
Hare	2800000	20	56000	100	280000	35	19600	98000	70000
Pheasant	325000	140	45500	700	227500	35	15925	79625	6500

On the other side 70% of ploughing lands, high density of human population (108 inhabitants per km^2), small forest area (8%), draining of marshes, large utilisation in the agricultural economy of poisonous chemicals, poaching etc. diminished all stipulated tasks (Iacovlev, 1983). Hence with the goal to change the situation, in 1981 was approved the "Law about protection and use of wildlife" which in1985 was changed by "On Fauna Law". Nevertheless the game economy never brought a return.

The unprofitable wildlife management was aggravated as a result of the collapse of the former Soviet Union which had reduced substantially state subventions and protection capacity of authorities. Also the war in the 1992 and spreading of guns to people had promoted poaching both on the level of local people and on the level of chiefs, directories, judges etc. Taking in consideration this situation the "The regulation on game economy" as annex of the Law on Animal Kingdom No. 439-XIII was approved in 1995. In compliance with item 9 of this regulation, administration of hunting husbandry is performed by the State Forestry Agency "Moldsilva" (SFAM). The method, terms and limits of utilization of the hunting fund are established by a Ministry of Environment (ME) which is authorized to manage natural resources and to protect the environment. In compliance with item 81 of the same regulation, administration of the hunting economy and departmental control over activities of natural and juristic persons referring to protection, utilization and reproduction of the hunting fund, and development of sportive hunting, are handled by the SFAM. While according to item 82, state control over the hunting fund and supervision over enforcement of this regulation are handled by ME in collaboration with local public administration authorities. Also, by Article 11, item (2) of the Forest Code state administration of forest and hunting funds are performed by the Government, local public administration authorities, state forestry authorities, and other authorities are authorized for this purpose. Furthermore, concerning Article 4 of the Law on Animal Kingdom, state administration in the field of protection and utilization of resources of

the animal kingdom are handled by government through the instrumentality of a central environmental authority, central agricultural authority, central forest authority, and local public administration authorities.

Hence, there are three principal authorities responsible for management and control of the hunting fund: first, forest authority, which wants to improve the hunting economy but does not have sufficient money to do this work; second, the environment authority, which wants to protect wildlife without exploitation; and third, local authorities who even nowadays feel game problems through wishing to participate in the privileged hunting as long ago. A fourth actor in the hunting problem, not authorised but more active, is the Society of Hunters and Fishers of RM (SHFRM). This republican society, with more than 14,000 members, is divided into district societies that in the middle of 1990s utilized the hunting lands on the base of old agreements from the 1970s and 1980s (Gulca and Galupa, 2004).

The central forest authority and the central environment authority, taking into consideration the critical situation of wildlife and especially ungulates, submitted a project for decision "On the prohibition of sport hunting of hooved animals for the season 1996–1997". Nevertheless the official estimates during the next years showed that the number of ungulates remained almost unchanged. Another attempt to ameliorate the situation was Governmental Decision No. 769 (1997) "On the approval of the provisional regulation regarding the leasing of hunting lands for necessities of the hunting economy in RM". In the situation of a lack of money, democratic but not organized transfers in society, inflation, and freedom to procure guns, the leasing method of hunting management had the goal to protect and conserve game through the leaseholder of hunting lands. The rent payment was planned for the creation of state hunting farms and wildlife restoration but in reality these money were used completely for other purposes. In December 1997, the Conception of development of the national hunting economy was approved. The main importance of this conception provided for two measures: the necessity of elaboration of the Game Law, and dividing of the hunting fund in hunting units with clear natural (or artificial) limits (Gulca, 1997). These important options for revival of the game economy have not yet been achieved. Moreover the "Law concerning the modification and completion of some legislative acts," promulgated in 2001, provides for management of hunting on open lands by the SHFRM based on agreements signed with local authorities and with the approval of the ME.

As a consequence, the agricultural lands as part of wildlife habitats are administered by local authorities and managed by SHFRM while the central forest authority manages the forest fund. But the wildlife does not ask who is manager, and in winter many species prefer the forest while in summer they prefer corn or other fields. In this situation it is impossible to assure efficient wildlife management on 1,000 to 3,000 hectares of forest split into 5 to 30 bodies without taking the surrounding agricultural lands into consideration. Same thing, nothing can be done in agricultural lands without the food and refuge supported by the forest. Hence it is unrealistic to promote in this context the intensive and efficient wildlife management with careful calculation of expenses and income. The problem is much more complicated, since agricultural lands are divided among a multitude of private owners who not accept wildlife damage to their agricultural crops.

The wildlife management system is generally similar to Byelorussian, Ukrainian and Russian one. The cornerstone of the problem is lack of division of the hunting fund into hunting farm units. This division was realized in Romania and Hungary during the middle 1950s, and now those countries have strong game economies, high quality of trophies and highly organized game populations. The situation in Siberia, which has large forests, is one case, but it is a

completely different situation when we plead for a high game economy in hunting lands of Moldova, with small areas of forest (9.6%) spreading through agricultural lands (76%) and pastures (10%).

Because the elite of hunters, and forest managers, and other chiefs in the RM, aspire to Russian-style legislation, it is interesting to show the opinion of Safonov (2003), Director of the Russian Scientific Research Institute for Game and Wild Farm. According to his opinion it is necessary to ascertain that the legislative bases and practices of wildlife management derive from scientific–theoretical concepts in the fields of ecology, economy and sociology. It is mistake and lacking in perspective to adhere strictly to the frame of a rigid state-centrist paradigm that has been shown to be a failure. Instead of years of debates about priorities by authorities, and political polemic concerning land rights it could be possible to make a comparative investigation to determine the advantages of one or another wildlife management system in different regions. Comparing British Columbia, forestry is the most important economic sector while tourism is a growing economic engine. In January 1996, three leading provincial associations representing the forestry and tourism sectors in this region signed an agreement according to which the sectors recognised the mutuality of their interests in effective land-use planning, and the extent to which their activities are and can be complementary. Since the signature of such an agreement the two sectors have worked proactively on matters having impact on both of them, and have worked to address disputes between them promptly an effectively (Apsey et al., 1997).

5. Future tasks and problems

Wildlife has succumbed indelibly to prodigal exploitation of this territory during the last centuries. Pasturing practice after historical slash and burn farming now is still important in livestock husbandry. This human livelihood has been found to be one of main factors for shrinking wildlife habitats. Even nowadays pasturing is realised without taking into consideration season, state of vegetation and optimal number of livestock per hectare. Subsequent decreasing of pasture quality led to conquering of (20-30%) forests by livestock. This evident retiring of wildlife in favour of domestic animals is motivated in society, by bad pastures, dry climate, deficit of forage, and growing number of livestock. We think that afforestation of pastures and agricultural lands (almost all are private) could solve the problem with illegal pasturing and logging (Gulca, 2005) and extension of wild habitats.

The impressive number of laws, government decisions, technical instructions concerning forest and wildlife management were approved and are in the process of elaboration or adoption. Many international conventions were signed and many credits were and will be received. But the prognoses for a country with one of the lowest GDP per capita in the world are not so impressive. Or, Moldova is not Botswana or even Zambia with copper, cobalt, uranium, lead, zinc, silver, gold, and pit-coal. Although the goal of forestry authorities during the period 1977-1987 was to bring the forest of RM to 500 000 ha (15%), the same goal is stipulated in today strategies of forestry and biodiversity with a date limit of 2025 (Gulca, 2005). In this context is interesting the opinion of Caughley and Sinclair (1994) concerning non-policy and non-feasible policy which formed the actual state of wildlife in general. Non-policies according to these authors stipulate goals that are not clearly defined. In contrast to the relatively benign non-policy, the non-feasible policy can be damaging. Although it may give each interest group at least something of what they desire, sometimes the logical consequence is that two or more technical objectives are mutually incompatible. An example is provided by the Forestry Code according to which Art. 59, p. (1) states that “pasturing of horned cattle, horses, Caprinae, sheep and other domestic animals in the lands of forest estate

and in the protection forest strips is prohibited" while Art. 59, p.(2) determines that "in exceptional cases pasturing of livestock, excepting caprinae and sheep, on the lands of forest estate is permitted". So we have a double interpretation of pasturing problem even in the same article of the principal forest law.

A critical hypothesis of this study is that the property rights structure and state responsibilities are key factors in determining the perspectives of wildlife management. The choice between wildlife and livestock utilization will be taken depending on the ongoing processes and perspectives. A company "Ritm contemporan" which leased in 1997 1 000 ha of forest hunting grounds increased the number of wild boars in two years from 20 to 100 exemplars. As the state authority had not approved the quota before the beginning of the hunting season, the company could not organise hunting tourism and consequently did not have any return on its investment. About 50 wild boars were killed by poison because during the autumn wild boars damaged corn crops on nearby private lands. The difficult economic situation, out-of-date legal regulations, inappropriate attitudes in hunting, and lack of educated staff and capacity building contribute largely to the poor state of hunting.

According to Caughley and Sinclair (1994) a wild population may be managed in one of four ways: 1 making it increase; 2 making it decrease; 3 harvest it for a continuing yield; 4 leave it alone but keep an eye on it. These are the only options available to the manager. Three decisions are needed: (i) what is the desired goal; (ii) which management option is therefore appropriate; and (iii) by what action is the management option best achieved? The first decision requires a judgment of value, the other two technical judgments. In Moldova, the main tasks of wildlife policy must be directed by the enhancement principle of general utility (judgment of value) of wildlife. Management option should depend on the actual case of natural reservation or hunting enterprise.

The objectives of wildlife management should be precise and compliant to the principles of sustainable development. Important issues are financial support of hunting development; conditions for solving the questions of forest ownership; increase of game abundance and quality; adaptation of the abundance and structure of game in forest hunting grounds to intensive management, active protection of the populations of wildlife species; use of wild animal species in pharmacology and other branches of the economy. Thus we should develop restoration goals for wildlife in the light of both historic possibilities and current realities, (Morrison, 2002).

6. Discussion and Conclusions

The significance of wildlife for the national economy: The economical superiority of the forest and the richness of wildlife in Moldova has already been mentioned by Dmitrie Cantemir in his work "Descriptio Moldoviae" (1715). And it is not an exaggeration because according to Law "Concerning natural resources", of 1997 national natural resources of Moldova are composed of soils, forests, waters, wildlife, and mineral solid substance (clay, sand, and limestone). Soil has among them a particular value for the national economy that constitutes a principal natural resource (Strategy for social – economic development of RM until 2005 year, 2002). But extensive development of agriculture, unreasonable extraction of forest and wildlife, massive construction of dwelling spaces, soil intoxication with diverse industrial and domestic waste has led to a degradation process of soil, erosion, land sliding, and desertification. Hence, promotion and preference for agriculture and cattle industry and ignorance of forest and wildlife during centuries led Moldova to feel now catastrophically diminishing production which jeopardises the alimentary security of the country. In consequence the Gross Domestic Product for 2004 year was 1742$ per capita, which is the

least among all European countries. This means that there is a lack of the main natural resources and the exploitation of soil exceeds any reasonable limits.

Our viewpoint is that only development of judicious actions confirmed by appropriate exploitation practices can ensure the maintenance and continuous increase of the renewable resources of Moldova. Sustainable wildlife management could be a transition from the extensive to the intensive way of soil utilisation that foresees not only obtaining profits, but also an increase of its profitability. Wildlife utilization (combining tourism, hunting and game cropping) could offer more favourable returns than commercial and communal livestock farming. Promotion of wildlife utilisation (but not prohibition!) envisages the mandatory harmonization of economic growth with other factors of major importance such as the increase of the living standard of rural people, environment and food security, environment protection and efficient use of natural renewable resources. Art.126 point 2 c) of the Constitution of Moldova stipulates that the state has to assure rational exploitation of soil and other natural resources in accord with the national interests.

Hunting tourism: Wildlife is harvested for many different purposes. Sport hunting usually takes a sample of the game population during a restricted season and often with other restrictions placed on the sex and age of the harvested animals. Harvesting for sport is a complex activity the product of which is as much a quality of experience as it is meat or trophies. On the other hand the purpose of commercial hunting or pot hunting is simply to harvest a product such as meat and skins (Caughley and Sinclair, 1994). According to "The regulation on game economy", point 28 (1995), in Moldova is allowed sport hunting, artificial selection for trophies, and also for scientific, cultural-educative, and aesthetic goals. The strategy of harvesting is simple; it is to harvest the population at the same rate as it seeks to increase but also to be at the optimal number limit. Hence a population increasing at 20% per year can be harvested at around 20% per year. A harvest can be controlled either by placing a quota on off-take or by controlling the harvesting effort. The latter can be regulated by setting a hunting season or by limiting the number of people harvesting the game population. The essence of a controlling effort is that there is no direct attempt to control the number of harvested animals (Caughley and Sinclair, 1994).

The harvest in RM is controlled during last 30 years by quotas. Usually each year before the harvesting season the size of the population is estimated. Data concerning game from the forest fund are concentrated by the forest state authority but from agricultural lands in SHFRM. These data are submitted to the ME which according to an opinion of the Academy of Science (Institute of Zoology) accepts and reduces the quota or even closes harvesting for a number of years. We should point out a detail in this context which is important for hunting tourism organisation. The quota on off-take is approved every year usually five days before the beginning of hunting. In this way hunting tourism that could be a principal financial return for wildlife management efforts becomes unattainable. The reason of this situation is that five days before hunting opening and two months of harvesting (e.g. for wild boar November – December) is too short a period to send this information to potential hunters from Germany, USA, Netherlands or France to decide to come to Moldova or to go to another country. It also leaves not sufficient time to come to an agreement about prices, accommodation, arriving time etc. In Romania or Hungary, for instance, the quota on off-take is approbated every year in April; hence five to six months are enough for hunting tour arrangements.

The estimation mechanism so rigorous at first sight is just as rotten in reality. Counting of big game based on opinions of foresters, corrected by forest masters and chief of districts, analysed by forest engineers is submitted every year to the state forest authority. Inclination to

present high density during soviet period (1945-1991) followed with maintaining of the same data in the beginning of transition period of independence led to temporary cessing (1996-1998) of harvesting for principal game (wild boar and roe deer) because of their low density. Nevertheless this density remained approximately the same during the next ten years despite of temporary hunting prohibitions and low yield. But it is known that the population of wild boar could be increasing up to 50% in good years. Hence if we have an amount of 1500 wild boars per country in the end of February and have in average an increase of 30% every year this means 450 exemplars sustained yield. Consecutively poachers on different levels extract the difference between 450 and 150 that is 300 wild boars in generally. Now almost half of forest enterprisers don't submit data for off-take quota because of very low wildlife number or to simply hide real data.

Poaching as a national "tradition": Poaching means illegal hunting and trapping of deer, hares, pigeons etc. and regulations already in the 14th century were prohibiting it. Some poachers did it for profit by supplying food to the Black market; others provided food for their families. Poaching became more tempting as Estate owners were building up their game and fish stocks for angling and shooting groups prepared to pay well for the popular pastime. Gangs based in London organized poaching and did most of the poaching business in the pubs. These gangs grew steadily in size between 1830 and 1870.

The magnitude of the devastation caused by the demand for bushmeat is staggering in Central Africa, where it is estimated that approximately 1.1 million metric tons of wildlife are killed for meat each year, the equivalent of 4 million heads of cattle. Within the Lower Zambezi National Park there are three distinct types of poaching: subsistence, commercial meat, trophy (ivory, horns, pelts and body parts). The growing demand for North American wildlife parts such as bear gall bladders, paws, teeth and claws has spawned an increasingly sophisticated network of wildlife poachers and brokers in Western Canada.

Poaching in Moldova by local inhabitants serves as supply of meat for households as well as for city people, usually holding sway and fire arms, for which it becomes a pastime. It rapidly increased after 1989 when the free market reforms in Moldova triggered a high rate of unemployment and a decline in the living standard. Also, the process of political, economical and social transformations caused an administrative chaos which usually is conductive to illegal appropriation of wildlife resources. Protected areas (0,6 % from all the territory) are often the last refuge for many species that suffer from hunting pressure elsewhere. Poaching has a direct influence on those that follow the rules. For example, poaching diminishes current and future game populations thus reducing hunting opportunities for us and our children, and deprives local businesses of revenues. It is not known exactly how much poachers exist but it is estimated that they can illegally take just as much as legitimate hunters during regular seasons.

Poaching in Moldova conjures up for many people romantic images of a lone traditional countryman stealthily hunting late at night, silenced rifle to hand, in the hope of bagging a rabbit or some other game for the pot. Many locals face poaching as an acceptable crime, or even as not being a crime at all. Perhaps illegal hunting is seen and felt as following in the footsteps of forebears with a shade of boldness. Poaching is not dealt with as a harsh offence because there is no intrusion into a house (Burglary) or a person's clothing (Pick Pockets) and perhaps it is also that during last half century all hunting grounds (wildlife habitats) were public. The local population lost many times their private property (land, money deposits, tools etc) during the last century because of the country's social, economic and governmental changes. A big part of society has seen a few wild animals during all their life and they don't

care about the lack of a hare or its economic reason. Sometimes those responsible for combating poaching are involved in poaching themselves and information about poaching cases is in general perfunctory. As a result, poachers today become often gangs of highly organised, selective and effective killers in the countryside. The police has limited budgets and resources to tackle the problem, so combating this particular form of rural crime is often regarded as a low priority. Poaching pressure will continue, so anti-poaching measures need to be put into place more vigorously. What is needed in the future is a well-planned strategy with sufficient support ensuring that anti-poaching activities become more consistent, effective and continuous.

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The private forest sector in Serbia - Legal and political aspects

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Abstract

State orientation toward integration and market economy imposed a need for redefining all strategic actions, and that demands significant changes in legislation, organization and general state attitude toward private ownership. Naturally this has reflected on forestry, primarily on the private forestry sector since development of private initiatives is considered as a strategic goal. Organizational problems of the Serbian Private Forestry Sector are related to a non-adequate state relationship towards this sector concerning financial support, lack of a new legislation framework, and effective institutions in this sector.

Although private forests in Serbia were considered as little productive and less abundant than state ones, new data about forest resources in Serbia provide significantly different information and make it important in state development, mainly in rural areas, as recognized by the Serbian Forestry Development Strategy passed in 2006. Realization of this strategic document is in initial phase and current activities focus on creating the necessary legislative and organizational frames which will be a basis for further actions. The objective of this paper is to analyze legislative and political aspects related to the organization of the private forestry sector (private forest owners & small and medium enterprises) in Serbia.

Keywords: forestry organization, private forestry sector, private forest owners

1. Introduction

After political changes in Serbia, the Serbian forest sector is not yet fully reformed, especially in the aspects of deregulation and privatization. Significant reformative steps were made in establishing strategic frameworks for development of forestry in general and in formulation of a National Forest Program. However, significant steps forward in state relations toward private forest owners[1] and in the development of small and medium enterprises in forestry[2] have not yet been made which reduce state influence and provide organized and efficient support to development of private forestry.

According to recent data on forest resources, private forests in Serbia are covering a very significant area with a large number of forest owners and small size of forest properties. The development of the private forest sector has become a complex and responsible task for the state forest administration. Small and medium sized enterprises (SMEs) are crucial to the health of the European economy and an important engine of economic growth and employment throughout the European Union. The well-being of such enterprises is essential to deliver strong growth and better jobs to the EU economy. The EU is obliged to support entrepreneurs and small business owners and facilitates access to information, tools and funding so they can make the most of new market opportunities.

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[1] For the term Private Forest Owners the abbreviation PFO will be used in the following text.
[2] For the term Small and Medium Enterprises the abbreviation SME will be used in the following text.

The actual *Law on forests of the Republic of Serbia*[3] *fro*m 1991 in that sense is out of date and has not been adjusted to development needs of the private forest sector, especially in terms of indirect measures of support to private forest owners (PFO) and SMEs.

The State has finally recognized the importance of the private forest sector and its role is emphasized in the new Serbian *Forestry Development Strategy*[4] declared in 2006. Measures indicated in the Strategy provide for a realistic and solid basis for private forest sector development, improvement of forests' conditions and strengthening the economic situation of their owners. In addition, they give a perspective for intensive development of rural areas. However, realization of these measures, along with procurement of necessary financial means demands urgent legislative changes and building up institutional capacities. It, also, requires intensive activities of forest owners in organizing themselves in production and trade of products, developing effective interest representation and strengthening participation in decision-making process related to the sector as a whole.

Support to organizing private forest owners in Serbia is in an initial phase. It has been fostered through the implementation of an FAO project *Forest Sector Development in Serbia*[5] focusing on capacity development of public forest administration and support to forest owners' associations. Activities were performed through workshops and education of forest owners. The establishment of new institutions proposed by the *draft of a new Forest Law*[6], and proposed possibility for establishment of independent technical and advisory services within private forest owners' associations, with providing suitable financing mechanisms and equipped human resources, represent a promising institutional solution.

The objective of this paper is to analyze the legislative and political frameworks of support to development of private forest sector (PFO and SMEs) in Serbia, along with the possibilities for improvement of private forest sector organization. Prior to this it is necessary to overview basic aspects of the genesis and development of private forest ownership in Serbia.

2. Development of property rights in forestry

The development of property relations in Serbian forestry (Nonic, 1993) and their organisation is the result of historic events. The forms of property and their modifications are closely related to the forms and changes of social-economic relations in Serbia during its formation and development as a state. Various forms of property had different times of formation and different developments during the XIX century.

After the period of state forests, the development of forest property in Serbia brought about new forms of property, first of all private, communal, and rural tenure starting by the end of the first half of XIX century. The original private and communal property of forests in Serbia occurred by direct occupation of public forests, i.e. by forced occupation and capture of public property. This process of direct occupation of forests was very intensive in the first decades of the restored Serbia, but subsequently it was getting lesser, however, still clearly expressed until the end of the XIX century. More complete legal regulations of the issues of private property occurred only in the second half of the XIX century during the early seventies.

[3] *Law on Forests*, 1991. Official Gazette of the Republic of Serbia, №. 46/91, 83/92, 53/93, 54/93, 67/93, 48/94, 54/96, Belgrade

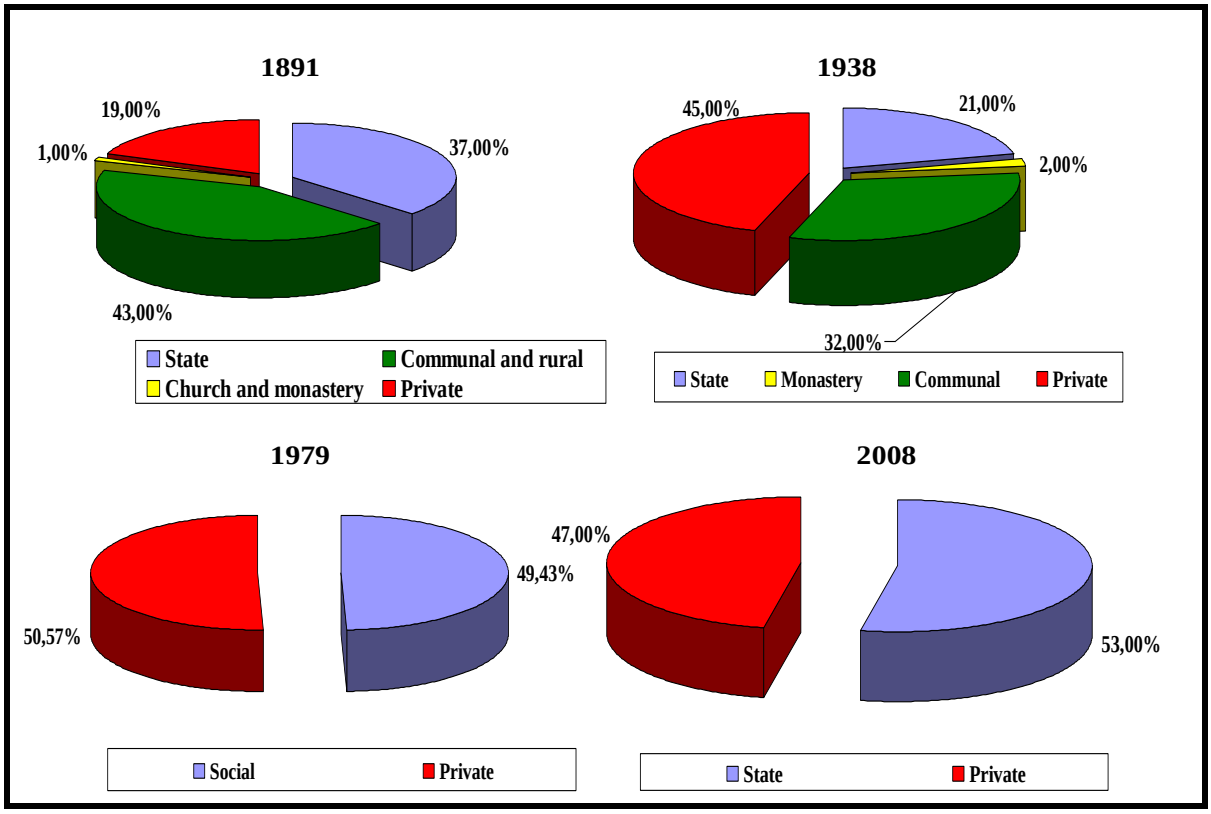
[4] *Forestry Development Strategy of the Republic of Serbia*. Official Gazette of the Republic of Serbia, №.59/2006, Belgrade

[5] FAO Project GCP/FRY/003/FIN: "*Forest Sector Development in Serbia*")

[6] Draft Forest Law of the Republic of Serbia version 5.0. 2007. (www.forestryprojectserbia.org).

Until then, partial and incomplete regulations mainly aiming at protecting forests from premature exploitation and clearing stated some of the vested rights. Already by the Forest Regulations in 1861 four categories of property were established: state, public, communal, and private forests.

Forest Ownership structure in the period of 1891-2008



Source: Marinovic (1926); Statistics for forests and forest economy for 1938 (1940); Inventory of forest fund (1983); Bankovic et al (2008).

Due to an increasing disappearance of forests, and consequently higher values of the remaining forests, followed by the coming of the first professional foresters, it became necessary to proclaim the Serbian Forest Law 1891. Its aim was to regulate forest property legally and factually and to make the basis for regular forest management. The first Article of the new Law states: "… *forests (mountains, hills, ...) in Serbia are state, communal, rural, monastery, church, or private*", which indicates that this Law introduces two new categories of ownership which were rural and church property. The previously called public forests now were referred to as state-owned forests (1920). The Law differentiates six forms of property but forests are not actually divided and there were no boundaries. Still, the Law gives some relative indicators of the structure of ownership in Serbia. There are 37% state forests, 43% communal and rural, 1% forests belonging to monasteries and churches, and 19% private forests (Marinović, 1923).

The Forest Law 1891 improved the state of affairs in forestry. The Ministry of Peoples Economy had formed Forestry Departments which established forestry units at the county level with a certain number of foresters. The Ministry was in charge of state forests. It also controlled other forests, except the privately owned ones. Municipal councils, i.e. peasants, were in charge of municipal and village forests.

In private forests, the felling was allowed without any permits, at owner's own discretion, except in the cases of protected forests, which was regulated by a special procedure. The law on forests was advanced and a good law for the time being. But in practice it was very difficult to apply because the issue of ownership and division of forests remained unsolved, and the forest administration was being formed too slowly and the lack of experts evident.

The question of development of forest property rights in Serbia was not completely settled before the Second World War. In the first official statistical publication on Forestry of the Kingdom of Serbs, Croats and Slovenians, published by the Ministry of Forestry in 1926, the division of forests was made based on ownership and the type of soil. According to the type of ownership three main categories were distinguished (*Table 1*): state owned (47,7%) of the forests in the entire Kingdom, communal (19%) and private (33,3%).

Table 1: Forest area by type of ownership in Serbia (1926)

№	TYPE OF OWNERSHIP	FOREST AREA (%)
1.	State forests	47,7
2.	Communal forests	19,0
3.	Private forests	33,3
∑	Total forest area	100

SOURCE: Forests of the Kingdom of SCS (1926)

The Forest Law of the Kingdom of Yugoslavia 1929 classified forests into (Art. 1): state owned forests and forests not owned by state. The latter were (Art. 4): "... *forests of self-managing bodies, tribal forests, forests as property of communities, land communities and similar corporations, as well as all private forests*" (1930). In 1938 the first reliable statistical data on forestry funds were processed. The forest area according to ownership is given in *Table 2*. According to data from 1938 (1940) property structure of forests in Serbia (of the total of 1.561.000 *ha*) was as follows: state forests 323.000 ha (21%), monastery and fund forests 29.000 *ha* (2%), rural and communal forests 501.000 *ha* (32%), and private forests 708.000 *ha* (45%). It was a characteristic of forestry-police regulations that they referred to all forests, regardless of the status of ownership, so the clearing of forests without government's permit was prohibited, as well as the change of use of forest soil. Every owner of a forest was obligated to afforest every cleared forest soil as soon as possible or within three years after clearing. The Managing council was entitled to proclaim certain forests (regardless of who owned them) a permanently or temporarily protected in order to preserve them. The Law was most restrictive for the state as an owner, then for the owners of forests that were under special public control and the least restrictive for the owners of private forests.

In the period after the Second World War, with the new government, there were great social changes both of the state system and the system of ownership, and in the legal and property structure of forests. The first step in this direction was the establishment of socially owned property, or public forests originating from state-owned, communal, and private forests, monastery and church forests, based on an areas larger than the legal maximum area[7]. Rural and communal forests disappeared as property categories and were designated as state forests.

[7] The confiscated forests previously belonged to the people who were considered farmers, and then the forests belonged to the German Reich citizens and people of German nationality, "*forests of war criminals*", "*betrayers*".... All these properties became the property of all people and joined the state forest property. They

Table 2: Forest area by type of ownership in Serbia (1938)

№	TYPE OF OWNERSHIP	FOREST AREA	
		(ha)	*(%)*
1.	State forests	323.000	21
2.	Monastery and fund	29.000	2
3.	Communal forests	501.000	32
4.	Private forests	708.000	45
∑	Total forest area	1.561.000	100

SOURCE: Statistics for forests and forest economy for 1938 (1940).

According to available statistics (*Table 3*) it can be concluded that in Serbia, in the period after II world war, there were predominantly two categories of ownership of forest, social and private forests (which had changed their name in "*forests with a right of ownership*"). In some statistics a category of communal forests of insignificant portion in total area was registered.

Table 3: Forest area by type of ownership in Serbia (1979)

№	TYPE OF OWNERSHIP	FOREST AREA	
		(ha)	*(%)*
1.	Social forests	1.143.334	49.43
2.	Private forests	1.169.533	50.57
∑	Total forest and forest land area	2.312.867	100

SOURCE: Inventory of forest fund (1983)

In could be assumed, due to almost equal portion of basic categories of ownership, that in Serbia the organization of both sectors had developed equally but in practice the situation was totally different. The private sector had not been divided together with the social sector which has resulted in different conditions for both categories of forests.

According to Damjanovic (1986): "*... throughout the post war period the two parallel forest policies have been practiced - one according to the social sector of forestry by which this sector through a gradual reorganization liberated itself of administrative restraints. The second policy - the sector of the private forests remained essentially unchanged, because their control remained the responsibility of the government. During the numerous reorganizations and self-management transformations of the entire society, only the form of control had been changed; the responsibility was transferred from county's councils to municipalities. The legal sector of forestry was not consecutively developed with the social sector, as it was necessary*" (Damjanovic, 1985).

had been confiscated from their owners without any kind of compensation. Based on the Federal Law on agricultural reform and colonization, some of these properties were given to the "*farmers without land*" and forest collectives. The new owners were obliged to use forests under the condition of taking a proper care of them.

The development of forest ownership is thus characterised by the fact that it started from the forest as a public welfare owned by the society and the people in general. Different forms of forest ownership were then formed very soon (private, communal, rural) which was the logical consequence of the sequence of social development. After the Second World War, the process goes on in the opposite direction and social attention is drawn to state or public sector forestry.

3. Characteristics of the private forest sector

Private forest property: Although private forests in Serbia were considered as low productive and less abundant that state ones, new data about forest resources in Serbia, prove the opposite.

Table 4 shows the current state of forests in Serbia. There are no exact data how many private forests exist in Serbia. In previous inventory of forest fund from 1979 it has been stated that of the total forested area state-owned forests amount to 49,4% and private forests to 50,6%. In the last data from the National Forest Inventory, on the territory of Serbia, without provinces Kosovo, private forests cover 47% of total forest area (Bankovic et al, 2008).

Table 4: Basic data on Serbian forests (2008)

Area of state territory (*ha*)	8.836.100
Forest area (*ha*)	2.252.400
Area of forests in total area (%)	29,1
Total timber volume *(m^3)*	362.487.000
Average timber volume *(m^3/ha)*	160,9
Annual increment *(m^3)*	9.079.772
Average increment *(m^3/ha)*	4,00

SOURCE: Bankovic et al (2008)

Basic data about forest area, timber volume and annual increment per different ownership structure are presented in *Table 5*. Data on timber volume and annual increment in private forests corresponds with their share in the area. However, timber volume in state forests is higher than in private.

Table: 5. Forest areas by type of ownership in Serbia (2008)

№	TYPE OF OWNERSHIP	FOREST AREA		TIMBER VOLUME		TOTAL ANNUAL INCREMENT	
		(*ha*)	(*%*)	(*mil. m^3*)	(*%*)	(*mil. m^3*)	(*%*)
1.	State forests	1.194.000	53,0	221,417	61,1	5,395	59,4
2.	Private forests	1.058.400	47,0	141,069	38,9	3,684	40,6
∑	Total forest area	2.252.400	100	362,487	100	9,079	100

SOURCE: Bankovic et al (2008)

Table 6 shows the structure of private forests in Serbia with big number of forest owners, small to average area of forest property and a lot of small forest parcels. Forest ownership structure is the biggest problem for efficient management of the forests.

Table 6: Structure of private forests in Serbia

Area of private forests (*ha*)	1.058.200
Estimated number of forest owners	900.000
Forest property size *per* owner (*ha*)	1,27
Number of forest parcels	3.900.000
Average size of forest parcel (*ha*)	0,30

SOURCE: Bankovic et al (2008)

The structure of private forests by property size classes and number of owners is presented in a *Table 7*. More than 72 % of owners own properties smaller than 1 ha, 26 % own property from 1 to 10 ha, and 2 % of the total number of forest owners have forest property bigger than 10 ha (Glück et al, 2009:122). The private forest sector in Serbia is thus characterized by high fragmentation of properties, large number of parcels and owners and insufficient organization of forest management. However, the total area of private forests is large, represents significant values of timber volume and annual increment similar to those in state forests, and has great importance as a valuable natural resource in Serbia.

Table 7: Structure of private forest property by number of owners[8]

0,01-1 *ha*	1-10 *ha*	10-20 *ha*	20-30 *ha*	*over* 30 *ha*	Total
638.322	233.846	8.372	1.516	426	882.482

SOURCE: Glück et al (2009:122).

Small and medium-size forest enterprises: Main characteristics of Small and Medium-sized Enterprises (SMEs) in forestry are at present:

- On the market there is a big number of competing enterprises.
- Almost all of their business is made in contract with PE "Srbijasume".
- They rely on moderate means which they own.
- Enterprises are rapidly adapting to market changes.
- SMEs perform some activities for which they are not registered.
- Family members usually manage and work in these enterprises.
- Usually, they do not have employees trained in forestry matters.

Regarding other activities in forestry there are SMEs registered for:

- Gathering and processing of non-wood forest products, for instance, charcoal, medicinal herbs, turpentine oil, mushrooms, wild berries, fruits, honey products;
- Services in tourism and recreation;
- Hunting and fishing.

[8] This data refer to Serbian territory without provinces Kosovo and Vojvodina.

Until the year 2000 the sector of Small and Medium-sized Enterprises (SMEs)has been developing very slowly in Serbia. The Law on Forests 1991 had prescribed a formation of enterprises which had to perform forest utilization on the basis of contractual arrangements with Public Enterprise[9] "Srbijasume" which, however were never realized. Until 2000, PE "Srbijasume", along with 27 forest estates engaged in forest management and utilization in state forests, were the owner of four dependent wood processing enterprises and one enterprise which has produced food, mineral water and other agricultural products. Based on the program of economic, organizational and technological changes a process of restructuring PE "Srbijasume" has started with the following activities:

- Privatization of dependent enterprises;
- Separation of non-core activities;
- Renting forest mechanization with the right of buying such equipment in order to create business partnerships with former employees;
- Optimization and reduction of the number of employees through social programs;
- Reorganizing parts of Public Enterprises that have created losses.

The reorganization of PE "Srbijasume" intended to reduce the number of employees through social program by which employees were offered voluntarily leave, renting and later buying mechanized forest equipment in order to become eventually business partners performing forest utilization as contactors for PE. In 2006, 342 SMEs signed a contract with PE "Srbijasume" for forest utilization; their structure is very heterogeneous[10].

Among the main problems in the development of SMEs in forestry are: inadequate education of employees, large number of enterprises with undeveloped capacities, lack of a clear legislative framework defining their role and promoting their development, non existence of tax relieves and subsidies, and lack of information and related institutions. Along with political changes and market reforms, including financial and technical support from abroad, it is expected that more favourable conditions for the development of SMEs in forestry need to be created.

4. Strategic and legislative frameworks

Strategic aspects concerning private forest development: The implementation of the Serbian *Forestry Development Strategy* passed in 2006[11]. is in initial phase and current activities are focused on creating legislative and organizational frames as a basis for further actions.

Related to the status and concern for private forests, as declared in the Strategy: "*...the responsibility of the State in resolving almost all major issues of the part of the growing stock, from the assessment of forest state to the organizations of forest owners, requires the State initiative undertaken especially in cases when the owners' initiative is lacking, and the decisive executive role to establish and reach the uniform attitude to forests regardless of their ownership form. The objective is the enhancement of private forests and the sustainable development of private forestry in the frame of rural development*" (2006/b: 19).

[9] For the term Public Enterprise the abbreviation PE is used.

[10] Internal data of PE "Srbijasume".

[11] As a result of cooperation between the Directorate of Forests of the Ministry of Agriculture, Forestry and Watershed Management of the Republic of Serbia and the Food and Agriculture Organization of the United Nations, through the Project "*Forest Sector Development in Serbia*" (GCP/FRY/003/FIN), a document on *Forest Development Strategy of the Republic of Serbia* was prepared and has been adopted in 2006.

To attain this objective the following measures are envisaged (2006/b):

- Assessment of the state of private forests and development of a planning and control system for private forest management;
- Professional and financial support to organizations of forest owners with the aim of strengthening their capacities for realization of sustainable forest management;
- Efficient system of support to private forest owners and to the establishment of small and medium enterprises in forestry and related activities;
- Creation of legal preconditions for un-obstructive implementation of sustainable management in cases in which the owners are not able to, do not want to, or do not have the interest to execute planning documents if this is necessary in the general interest or in the interest of other forest owners;
- Creating normative preconditions for the consolidation of private forest holdings and for measures of economic policy avoiding further fragmentation of forest holdings;
- Use of available measures of economic policy by the government and of long-term financial means for stimulation of forest owners to ensure protection and improvement of private forest resources.

The strategy emphasizes the need for development of small and medium enterprises in forestry. The traditional significance of forests for residents of rural regions, primarily for satisfaction of their basic needs for fuel wood and timber, requires stimulation and public support of entrepreneurial activities in forestry and related sectors. The goal of establishment and development of small and medium enterprises in forestry is to increase the contribution of the forest sector to economic and social development of the Republic of Serbia (2006/b).

According to the strategy, SMEs in forestry should provide enhancement of the living standard of Serbian citizens especially in rural areas, increasing of employment, and contributiong to uniformly spaced regional development. Besides the Forestry Development Strategy, there are several other sectoral policies that influence the private forestry sector such as the *Agriculture Development Strategy*[12] comprising elements of forestry as part of rural development. Concerning direct measures related to uprising activities related to forestry and forest based industry SMEs there is Serbian *Strategy on Development of SMEs and entrepreneurship* for the period of 2003-2008[13].

Main strategic directions are support to SMEs and entrepreneurship in priority sectors, institutional support with respect to their interests, solving legislation impediments, financial support, education and training, export promotion, sectoral analysis, technical support and national promotion, implementation and evaluation of strategy.

Legal aspects concerning the private forest sector: Legislative aspects related to the private forest sector are defined by the *Constitution of the Republic of Serbia* of 2006. Section 86th of the *Constitution of the Republic of Serbia*[14] states that private and state ownership rights are

[12] *Strategy of Agriculture Development of the Republic of Serbia*. Official Gazette of the Republic of Serbia 78/05, Belgrade.

[13] *Strategy of Development of Small and Medium Enterprises and Entrepreneurship in Republic of Serbia*. Official Gazette of the Republic of Serbia, 45/03, Belgrade. It proposes to use the potential of SMEs and entrepreneurship to contribute to the general Serbian development, to increase the number of working places, to enhance income growth, and to speed up regional development.

[14] *Constitution of the Republic of Serbia*, Declared on 8.11.2006, Official Gazette of the Republic of Serbia 83/06 (2006a).

equal and have equal legislative protection. However, section 87th declares that all natural resources are goods of public interest and therefore are owned by state. This section does not adequately define the status of private forests as they are not considered as goods of public interest. This represents a problem in defining measures for implementation in a new law for all ownership forms of forests. In section 88 a difference between forest and forestland is made, and forestland is not consider as a good of public interest. Therefore private forestland can be used freely and the law can limit the usage if it should endanger environment or interests of other rightful owners.

The basis for implementation of the Forestry Development Strategy is presently the draft of a new Forest Law which has been in a process of elaboration during the last few years. A comparison of the existing *Law on Forests* with the new draft law is presented in *Table 8*. Some articles have been retained such as obligatory tree marking, obligatory compensation for cuttings, obligatory timber and fuel wood marking and license for transport. However, according to the draft of a new Forest Law, forest owners, and forest owners associations or companies can perform public interest affairs entrusted to them by the state. In that sense, a new Law would give the owners a right to choose private forestry service and would allow for indirect and direct measure to support PFOs along with support of their interest organizations.

A novelty of a new draft Law is the proposal for the establishment of an Agency for Forests conducting affairs of a Public Forest Service[15] which by the existing Law are entrusted to public forestry enterprises. It is proposed that the new forestry law would prescribe that the owners perform utilization and protection of their forests and that advisory and technical affairs are to be performed by registered and entitled companies.

The new law would categorize forest owners based on area of their forest property. It should determine that owners with properties larger than 100 ha are required to have forest management plans and obligated to organize PFS or to have a contract with a company registered for technical and advisory services in private forest. Owners of smaller properties would be required to have a forest management program and technical services are to be performed by registered companies which the State has appointed. In this case technical activities would have to be financed by budgetary contributions from the State.

The new draft Law would offer as well the possibility for interest organizing in private forest owners associations which could perform:

- Informational activities in cooperation with the Agency for Forests about programs, procedures, and possibilities for support to the private forest sector;
- Direct coordination of support to PFO;
- Technical and advisory activities in private forests;
- Interest representation of PFO.

[15] Basic affairs of the Agency for Forests related to the private forest sector are technical affairs in private forests, advisory support to PFO, implementation of direct measures of support to PFO through subsidies, coordination of forest infrastructure and indirect measures of support.

Table 8: Comparison of existing Forest Law (1991) and a draft of a new Forest Law (2007)

ARTICLES/ LAW	LAW ON FORESTS (1991)	DRAFT OF A FOREST LAW (2007)
Forest owners obligations		
Obligatory forest management plan	√	√
Obligatory tree marking before felling	√	√
Obligatory compensation for cuttings	√	√
Obligatory timber and fuel wood marking and license for transport	√	√
Support to private forest owners		
Technical support	√	√
Advisory support	–	√
Education	–	√
Financial support	–	√
Support for organizing PFO	–	√
Organizational frameworks for Private Forest Service[16]		
Owner can choose the service	–	√
PFS in PE	√	√
PFS in Agency for Forests	–	√
PFS in Forest owners' associations	–	√
PFS within consulting companies	–	√

SOURCE: Law on Forests of the Republic of Serbia (1991), Draft of the Forest Law (2007)[17]

Legal aspects concerning small and medium-sized enterprises in forestry: The existing Law on Forests 1991 does not even mention the term small and medium enterprises in forestry and therefore no regulations related to SMEs are prescribed. As mentioned before, the existing Law only defines the role of PE "Srbijasume" and proclaims this PE as the only user and manager in private forests.

However, the draft for a New Forest Law recognizes existing entrepreneurial activities. SMEs can perform utilization of forests, silviculture, forest road construction but they would have to be registered for these activities and should meet the conditions prescribed by the applicable regulations. It is also foreseen to provide for the possibility for establishing consulting agencies in forestry which would be entitled to perform forest management planning, forest protection, silviculture, advisory and technical support to private forest owners and SMEs in forestry. Precondition for their work would be that their employers must have a renewable license issued by the Chamber of Forest Engineers and Technicians which is a new institution to be established by under the Law. The possibilities foreseen by the draft of a New Forest Law can offer favourable solutions for the development of SMEs in forestry, especially because this field would not appear to become overregulated.

[16] Instead of the term Private Forest Service, an abbreviation PFS will be used in the following text.
[17] Internet source: www.forestryprojectserbia.com

The main requirements would actually focus on registration for business in forestry, license preconditions for forest employees working in SMEs, and on quality standards to be guaranteed by consulting agencies being entrusted with sustainable forest management tasks in private forests.

5. Discussion and conclusions

The fact that the Republic of Serbia has been in a stage of transition for the last eight years, that the Law on forests has not been changed, along with strong state and public interference in the private forest sector similar like in the period of socialism could lead to the conclusion that decision makers are willing to protect the state forest sector from new market trends. On the other hand new data about Serbian forests along with entrepreneurial initiatives related to wood and non-wood products emphasize a need for redefining relations in the Serbian forest sector.

In period of transition the State should procure the necessary founding for increased demands of the private sector which is expanding and adapting to new conditions. In contrast to the state forest sector which is organized and constantly improved the State has not yet established an efficient system of support to private forest owners enabling them to manage their forest in a sustainable manner.

The existing model of technical support to private forest owners through services within public forest enterprises proves to be inefficient as well as the previous model when support was provided for through municipality services. Public enterprises do not have enough developed technical and organizational capacities, neither do they have sufficient interest for successfully performing trusted duties in private forests. As a consequence the actual system of support thus represents a significant obstacle to the improvement of private forest management.

The policy of State support is inadequate, compared to the significance of private forest sector, and owners are still not able to receive organized direct (financial) and indirect state support. Private forest owners do not have enough knowledge about sustainable forest management, and usually do not have clear motives for investments in forest management. In addition, they have poor inter-cooperation disabling them to be properly organized.

The share of SMEs in forestry in comparison to the total number of SMEs in Serbia is small but there is an increasing number of them and a growing motivation of rural inhabitants for forest related entrepreneurship. This represents a significant challenge in the coming period.

Most pressing problems of SME sector are institutional and financial such as, for instance:

- Need for a clear definition of roles and models for establishing partnership between the public and the private sector in financing SME needs;
- Lack of necessary financial means for direct and indirect support to the SME sector;
- Lack of effective institutions and sufficient human resources for coordinating supporting activities to the SME sector;
- Lack of adequate communication and information exchange between Government and the SME sector;
- Need for raising awareness about the significance of innovation for enterprise competitiveness and a need for promoting entrepreneurial activities in rural areas.

Changes of the prevailing rules and the existing institutions are a necessary precondition, and institutions and people within them must accept changes as necessary and not as imposed. If this is impossible to be accomplished, new institutions with new people should be put in place. A typical example is the Chamber of Commerce and its branch associations. In the work of this institution participated all state combinates and cooperatives along with state wood processing enterprises during the previous period. A similar situation exists nowadays, but the difference is that almost all production subjects have been privatized (especially in the wood industry sector) and it appears questionable whether such huge and rich institution is maintaining such an infrastructure just to provide services for a few state enterprises.

Contemporary developments in forestry emphasize a need for reorienting from wood production alone toward others natural resources related to forests. The need for reducing the intensity of forest utilization in terms of wood production will create space for utilization of non-wood forest products which could contribute to a decrease of unemployment and new production development in rural areas. In that sense, it is necessary to enable the private forest sector to establish clusters of SMEs for production and services as it is, for instance, already done in the wood industry by establishing processing clusters in the Agency for wood. Systematic solving of issues related to organizing forest owners and establishing efficient technical and advisory support service is one of the basic goals of the *Forestry Development Strategy* of the Republic of Serbia, and concrete measures for these issues are proposed. Within the FAO project Forest Sector Development in Serbia the MA&D methodology (*Marketing Analysis & Development*) has been analyzed as a possible approach for the work of an advisory forest service. The purpose of MA&D methodology is to identify possibilities of establishment and work of SMEs in forestry.

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Governance of forest protected areas in Serbia

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Abstract

Due to the economy development of the country increased pressure on natural resources and protected areas is evident and management of protected forest areas has become a challenge for conservation and regional planning. As the problem is related to spatial, socio-cultural and economic dimensions, managing of forest protected areas hits very different legal, administrative and technical realities. The political and economical realities are key factors for success in nature conservation, especially of forest protected areas. Political aspect is reviewed from the general precondition as well as under legal and organizational aspects. From an economical aspect the nature conservation field represent a complex system with many interdependencies that need to be balanced. The paper presents an overview on the current nature conservation status as well as future governance challenges and opportunities in the country.

Keywords: Nature conservation, forest protected areas, realities, challenges

1. Introduction

The biological diversity of Serbia, both in terms of ecosystems and species, is extremely high. This implies acceptance of a sustainable development concept for the forestry sector and sustainable management of forests which make up a significant percentage of the overall nature richness. Under different types of protection there are 464 natural assets and 797 protected plant and animal species, with a total area protected of 547 176 ha or 6.19% of the Serbian territory. The largest area is situated in 12 nature parks (232 541 ha), 5 national parks (158 986 ha) and 16 special nature reserve (86 714 ha). Following the Pilot Project in 2005 "Establishing of the Emerald Network in Serbia and Montenegro", further activities were carried out through the project "Establishing of the Emerald Network in the Republic of Serbia". As a result Emerald sites in Serbia include 61 localities. The majority of the chosen sites has a specific protection status at the national level e.g. 27 sites are proclaimed as protected natural areas or their protection status is being revised, and certain sites are of specific significance at the international level as well[1] (2000/*a*). Over 65% of the protected areas are forests and forestland. The concept of sustainable forest management should be fully applied in forest management in the protected nature areas. Support to this concept should be realized by a clear definition and balanced identification of priority forest functions, and by recognizing the economic potential of the State and the demands of the population in the mainly rural districts.

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[1] Biosphere Reserve (UNESCO MAB), Important Plant Area (IPA), Important Bird Area (IBA), Prime Butterfly Areas (PBA).

2. Characteristics of Serbian nature protection

Protected areas in Serbia contain a unique combination of biological, ecological and cultural features as a part of great biological and landscape diversity within the relatively small state territory. There are a large number of endemic species, vast forest areas[2], and natural and semi-natural ecosystems in good ecological conditions. By national legal provisions, three types of natural protected assets have been defined: protected areas, protected species and moveable nature protected documents (2009). Protected areas encompass six types[3], while protection regimes describe three protection degrees[4]. Valuation and designation of natural protected areas is performed by the Institute for Nature Protection of the Republic of Serbia based on criteria which are determinate by Regulation on categorization of natural protected areas. Unfortunately, until now the legal acts relevant for nature conservation field do not provide a harmonization of national categorization with international adopted IUCN[5] categorization. Also, revisions of protected areas in accordance with the Law on nature conservation 2009 have not yet been performed.

The current concept of nature conservation in Serbia represents a status where numerous interests are met referring not only to economic but also to non-economic activities. Main problems of nature conservation field, in relation to other sectors, are reflected through: lack of basic strategic documents, non-harmonized and inconsistent legal provisions (acts), insufficient implementation or absent of implementation of laws, inadequate financing, conflict of interests, unsatisfactory inter-sectoral cooperation, weak flow of information, lack of awareness for presence of protected natural areas starting from local up to governmental level, insufficient engagement of managers, etc.

Reasons for having problems are first of all the long-term isolation of the country and poverty. Increasing utilization pressure on forests as main parts of protected areas and emphasized need for nature conservation in the last decades resulted in numerous conflicts between local communities and nature conservation responsible institutions. These conflicts refer, for instance, to hunting, tourism, rural areas (Aleksic and Jancic, 2006). Nature conservation changes in Serbia are related to legislation changes, ratification of international obligations, establishing of ecological networks, and numerous national and international projects.

Legislation changes first of all refer to recently finished process of drafting of new Law on nature conservation. The drafting process of the Law on nature conservation started in 2005 and has been finished in May 2009 when it was adopted by Serbian Parliament. Before its adoption, provisions for normative regulation of nature conservation originated from previous Law on environmental protection (adopted in 2004). Processes of ratification of international documents were very intensive during the last few years. Latest ratified conventions by Serbian Government are: Convention on the Conservation of European wildlife and Natural Habitats (*Bern Convention*), Convention on the Conservation of Migratory Species of Wildlife Animals (*Bonn Convention*), The Convention on the Protection and Sustainable

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2 In Serbia the forest cover amounts to 29,1%

3 The six basic types of natural areas are following ones: strict nature reserve, special nature reserve, national park, monument of nature, protected habitat, landscape of outstanding features and nature park.

4 Under these regimes which can be a 1st, 2nd and 3rd degree is meant a group of measures and conditions determining a defined way and level of protection, use, management and improvement of natural protected areas.

5 World Conservation Union

Development of the Carpathians, Convention to Combat Desertification, Convention on Long-Range Transboundary Air Pollution, and Kyoto Protocol.

One of the greatest steps in development of nature conservation was made through the process of establishing ecological networks in Serbia which has been intensive in recent times. The first ecological network in Serbia that has been formed is the Emerald network. The legal bases for its creation are the Bonn's and the Bern's Conventions, both ratified in 2007. According to information obtained from the Institute for nature protection, the process of establishing the ecological network *Natura 2000* is planed for 2009-2011 although first steps were already made in 2006 followed by educational workshops in 2007. The Emerald network could be used as a starting base for establishing of this network.

3. Strategic and political frameworks

Overall strategic and political frameworks of nature conservation field on a general level are defined in *Report on Millennium Development Goals in Serbia*[6], where secure sustainability of nature environment presents one of important objective. Secure sustainability of nature environment could be achieved by integrating of sustainable development principles into national politics and programs and prevention of environmental resources loss. *Poverty reduction strategy of Serbia* pays attention on ecological aspects of poverty reduction through the concept of getting an income in changed conditions and obtaining higher support on local level.

Sustainable development strategy of Republic of Serbia[7] as most important objectives stated: drafting of relevant legislation[8], ratification of international agreement, enlargement of protected areas network, establishing of ecological corridors and ecologically important areas network, establishing effective system of bio-monitoring[9] and information system on wildlife and other natural rareness, drafting of register of biological diversity. Sustainable development strategy also predict capacity improvement of protected area manager and effectiveness increase for responsible state bodies emphasizing their input (or work) on repression and sanction of unwanted and irregular activities in protected and ecologically important areas.

Spatial Plan of the Republic of Serbia (adopted in 1996), and later replaced with a *Spatial Development Strategy of the Republic of Serbia*, which define basic goals of nature conservation and environmental field[10], predict that up to 2010 a 11% of Serbian territory should be under a different type of protection. The *Forest development strategy of Republic of Serbia* defines protection and conservation. Forestry Development Strategy of the Republic of Serbia empathizes that improving of concept of designation, conservation and management of protected areas are one of strategic orientation which Serbian nature conservation policy requires "*its fully spatial, economically, legal and development valorisations*" (2006/*b*).

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6 Adopted in 2005 by Serbian Government.

7 Source: www.odrzivi-razvoj.sr.gov.yu

8 Drafting of bylaws, National strategy for biodiversity conservation of Serbia and its action plan, etc.

9 ICP Forests network is part of biomonitoring system.

10 Main objectives are healthy and quality environment, rational use of natural resources, detention of further environment degradation, protection and conservation of endangered and rare species, conservation of ecosystem balance and its diversity, professional's and people's education in field of nature conservation.

In addition to above mentioned specific strategies and plans, nature conservation in Serbia is regulated directly by the 2009 *Law on nature protection* and indirectly by several laws, e.g. bylaws[11]. Protected areas are also part of *National ecological action plan of Serbia* as well as *Local ecological action plans* of certain Serbian cities. Respecting a fact that nature conservation and environmental protection in Serbia are sectors where a numerous legal acts are still not harmonized with the European Union[12] Acquis Communautaire, harmonization process is ongoing. Altogether one may stat that at this moment Serbia has ratified 70 international environmental conventions and nature conservation documents.

4. Institutional framework

The institutional framework of natural protected areas management can be seen at several levels: (i) state level (*state administration*), (ii) level of autonomous province or municipality level (*local administration*), (iii) level of public enterprises, (iv) nongovernmental level (*nongovernmental organizations and chambers*), and (v) other entities (e.g. *physical persons*). At the state level responsibilities regarding natural protected areas are with the Ministry for Environmental Protection and Spatial Planning[13], and with the Ministry of Agriculture, Forestry and Water Management. Very important are state professional institutions (at state level and level of autonomous province) and in particular the *Institute for Nature Protection of the Republic of Serbia*[14]. At the local level, role of municipalities and cities is reflected through the designation of protected areas which are situated on their respective territory. Besides public institutions there is an evident increasing trend of intervening (at this moment 300 registered[15]) of nongovernmental organizations[16]. Their general attitude is very critical, but most of the NGO have a lack of knowledge on natural protected areas issue. Influence of NGO on local government and state institutions is important and it is expected to be growing further.

Thus, within the overall institutional framework reviewed above, the management of PAs is entrusted to different actors. The legal framework discerns between the managers and users of protected areas.

Protected area is managed by the manager of protected area. Manager has to fulfil professional, personnel and organizational conditions in order to protect, improve, promote and sustainable develop protected areas. Manager can be legal[17] or physical entity. If protected area is located within the territory of national park or its vicinity, manager of such protected areas is manager of national park. Management of national parks is performed

[11] In line with a legal framework and type of protected areas, protected areas in Serbia are designated by different bodies. National parks are designated according to the Law on national parks by the Parliament. Strict and special nature reserve, protected habitat, natural assets which protection is based on international legislation (e.g. Convention on Biological Diversity), landscape of outstanding features (that include cultural asset) and nature park are proclaimed by Government. Nature Park, monument of nature and landscape of outstanding features (which do not have cultural asset) are designated by responsible local municipality authority (Anon, 2009).

[12] In further text it will be used acronym - EU

[13] Upon the establishment of new Serbian Government in July 2008, previously ministry denotation was Ministry of Environmental Protection.

[14] Institute performs a professional control, support, protection and improvement of Serbian natural heritage and its biological and geological diversity.

[15] Source: http://www.crnps.org.yu/direktorijum/pretraga.asp

[16] In further text it will be used acronym - NGO

[17] Those are public enterprises, companies, communal enterprises, museums, faculties, tourist organizations, ecological NGOs, foundations and other legal entities.

through special state enterprises (Public Enterprises of National Parks Fruska Gora, Tara, Kopaonik, Djerdap and Sara Mountain), which are under the jurisdiction of the Ministry of Environmental Protection and Spatial Planning[18], e.g. Section for National Parks within the Sector for Natural Protected Areas. Public enterprises[19] of national parks manage with 21% of total protected areas surface. Manager of a considerable number of other categories of protected areas are the Public Enterprises for Forest Management "Srbijasume" and "Vojvodinasume". PE "Srbijasume" manages 96 natural protected areas with a total surface of 242 439 ha (or 47.8% of total protected areas surface) and PE "Vojvodinasume" manages 22 protected areas with a total surface of 73 746 ha (or 14.5% of total protected areas surface). In some cases NGOs are also managers of protected areas. A user of protected area is legal entity, entrepreneur, physical entity or some other entity that within the protected area perform activities i.e. use protected area and/or its resources, comfort and characteristics.

5. Governance of forest protected areas

Governance can be defined as a system that is transparent, accountable, equitable, democratic, participatory and responsive to people's needs. It is a system that comprises openness, effectiveness, responsiveness, complexity and coherence. Defined in this way governance of forest protected areas can be discussed in two ways: at its general aspects or for a particular case at a specific level. In general aspects good governance means fulfilment of all (or majority) of its principles considering that good functioning of protected areas depends on several variables of which some of them are in close correlation. From the specific level, e.g. from the aspects of forest protected area management objectives, good governance means fulfilment of objectives in order to achieve the primary purpose of respecting protected areas.

The responsible authorities for forestry and protected areas may exercise a number of different types of powers: planning powers, regulatory powers, financing powers, revenue-generating powers, and the power to enter into agreements. Good governance, in this context, deals therefore with the responsible use of these powers in order to meet the objectives of forest protected areas. One of the shortcomings in governance of forest protected areas is the overlap of responsibilities among relevant authorities and the fact that most part of protected areas are managed by public enterprises for forest management.

The general responsibility of the Ministry for Environmental Protection and Spatial Planning relates to preparation of mid-term programmes of protection and utilisation of natural protected areas as well as to inspection and supervision in nature protection and biodiversity issues. The responsibility of the Ministry of Agriculture, Forestry and Water Management[20] (Directorate of Forests) addresses the support to the preparation of forest management plans which contain specific and appropriate guidelines for particular protected areas as well as inspection and supervision in forestry issues. The cooperation of these institutions is reflected through procedures on plans and development documents.

Additional forestry costs and compensation necessities are not budgeted for funding which is a major deficiency in the actual management status for protected forest areas. Such costs, especially forestry costs related to the fulfilment of main function in protected areas, exceed the costs of regular forestry activities and need to be assessed and financed from identified and secure funding sources. A review of additional forest protected areas management costs are given in *Table 1*. It has to be emphasized that, until now, no private property was

[18] In further text it will be used acronym - MEPSP
[19] In further text it will be used acronym - PE
[20] In further text it will be used acronym - MAFWM

designated for compensatory funding as part of a protected area. Further, most of the present protected areas under governance management do not include private properties, and if they are any the respective areas are rather small.

TABLE 1: ADDITIONAL FOREST PROTECTED AREA MANAGEMENT COSTS

ACTIVITIES/MEASURES	2007	2009-2018/Y	RESOURCES
Administration	2,59 mill. €	3,19 mill. €	Own resources
Planning	1,43 mill. €	1,76 mill. €	Own resources
Measures for PAs/socio aspect	0,83 mill. €	1,02 mill. €	Own resources
Ecological-natural aspect	-	?	Budget
Additional measures in private forests	-	?	Budget
TOTAL	4,85 mill. €	5,97 mill. €	

SOURCE: www.srbijasume.co.yu

One of the proposals for governance of forest protected areas is making a clear distinction between responsibilities of the relevant ministries (for environmental protection and forestry) e.g. in distinguishing between general (protection) and operational (forestry) activities. This means parting of general governance activities (for all protected areas) which will be role of MEPSP (protected area governance) and operational forestry activities necessary for fulfilment of forestry objectives in order to achieve the primary purpose of respecting protected areas which is the role of the MAFWM/Directorate of Forests and of the Public forest service. Besides the two mentioned authorities, inspection services and harvesting enterprises would also have to play an essential role in the overall organizational structure.

6. Conclusions

Protected areas face problems as never before and many of them are not yet protected and effectively managed. Some have financial difficulties as governments cut their funds forcing protected area managers to raise their own revenues. Many of them still have conflicts with people living inside or alongside such areas. A growing number suffer from their own success as visitors pour in. Most protected areas are under pressure at their edges from the need to extend farmland, build roads and so forth. The main challenges of protected areas in Serbia for the future are: (i) to bring benefits to people by embedding protected areas more firmly in local economies, so that communities benefit from the full range of material and non-material values of such areas; (ii) to develop and implement a global network using the full range of protected area types that are planned as elements of whole landscapes, and (iii) to strengthen the management capacity in order to improve the quality of management by setting standards for implementation, monitoring, evaluation and reporting.

Challenges for future forest protected area governance have been specified in the Forest development strategy as follows (2006/*b*):

- Enhancement of sustainable management of forests in nature protected areas,
- Harmonized development of ecological, economic, social and cultural forest functions,

- Harmonisation between the formally adopted international standards and the standards of the National Strategy of Sustainable Development,
- Conservation, appropriate enhancement, the sustainable utilisation and monitoring of forest biodiversity,
- Advancement, sustainable utilisation and evaluation of the protection, social, cultural and regulatory forest functions.

Measures defined for achieving of these objectives are the following:

- Identification and implementation of Criteria and Indicator standards in establishing of protected areas as the backbone for revision of existing protected areas and for determining financial components in future public assignments as well as proving the necessary compensation for private forest owners;
- Definition of precise competences in forests protected areas (MEPSP and MAFWM-Directorate of Forests) especially of the legal, strategic, planning and operational aspects, and definition of the most appropriate way of management in protected areas;
- Identical attitude towards the resource in general taking into account the fact that it is already reached max level of assignment of protected areas in state forests;
- Establishment of a protected areas financing system;
- Strengthening of the Forestry sector as an active part of a comprehensive nature protection system.

There are new opportunities: expanding scientific knowledge and the information revolution, trends in governance such as greater democratization, and a growing sense of international responsibility all help to set the stage for meeting these challenges (2000). It is not acceptable any more that society ignores the needs for increasing financial requirements for appropriate management of forest protected areas. Additional management and governance costs of forest protected areas should not only be paid for from the use of natural resources like forests. It is obvious that society's needs towards forests have dramatically changed during the last twenty years, but in Serbia the society is not yet ready to compensate such demands in financial aspects. Regarding to fulfilment of public service in forests in general way, it is important for forestry sector to convince the society for additional financial support that should be ensured on direct way through so called "ecosystem service payments". Such an approach is of great importance for ensuring sustainable management of forest protected areas on long time basis without additional pressure on forest resources. Protected areas are not just the concern of nature conservation authorities but should be a collaborative exercise involving many public, community and private interests.

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The Pan-European Ecological Network (PEEN) and its establishment in the Republic of Serbia

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Abstract

The conservation of biodiversity has in recent years been confronted with two crucial challenges: first, the need to develop environmental management approaches that are effective in conserving biodiversity and, second, the need to accommodate the exploitation of natural resources meeting legitimate socio-economic needs. Efforts to address these challenges have encouraged the development of models of ecological networks at national, regional and international level as a means of strengthening the integrity and resilience of the world s biological diversity.

The Pan-European Ecological Network (PEEN) concept offers a dynamic framework for integrating the policies of several sectors into a consistent nature conservation and management approach. Several international conventions for which the geographical scope is the European continent are relevant and particularly important for this network in terms of protection of both species and areas. With PEEN, the Ministers endorsed a framework for integrating existing agreements, programmes and initiatives in the field of nature conservation, land use planning and rural and urban development in Europe. In addition to the Natura 2000 and Emerald Networks, several other networks of protected sites operate within Europe as a whole contributing to better conservation of natural habitats. Operational ecological networks at transboundary, national or regional and local level will be a main contribution to the establishment PEEN. The paper highlights the role and importance of the development of PEEN, as well as the initial steps towards an application of this concept in the Republic of Serbia.

Keywords: conservation of biodiversity, development of functional ecological networks, sustainable use, transboundary cooperation, case study.

1. The reasons for setting up an ecological network

An ecological network is regarded as a coherent system of natural and/or semi-natural landscape elements that is configured and managed with the objective of maintaining or restoring ecological functions as a means to conserve biodiversity while also providing appropriate opportunities for sustainable use of natural resources. Different wordings are used to describe this broad approach such as most common the terms ecological network, reserve network, bioregional planning and eco-region-based conservation. However, all of these terms respectively models are characterised by the following five key elements:

- Focus on conserving biodiversity at the ecosystem, landscape or regional scale level,
- Emphasis on maintaining and strengthening ecological coherence, primarily through providing for ecological interconnectivity,
- Assurance that critical areas are buffered from the effects of potentially damaging external activities,
- Concern for restoring where appropriate degraded ecosystems,

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- Promotion of complementarities between land uses and biodiversity objectives, particularly by exploiting the potential biodiversity value of associated semi-natural landscapes.

The concept of ecological networks was basically formulated as a response to the habitat fragmentation process which shows the following characteristics:

- Individual animals may not have access to an area holding habitats necessary for their survival;
- Migratory animals may be unable to move to those areas where they would normally stay for part of the year;
- Natural populations and communities may be unable to move across the landscape in response to changing environmental conditions, especially to climate change;
- Genetic exchange between different local populations is or may be prevented;
- A patch of habitat in which a species has become locally extinct cannot easily be re-colonised by another local populations of the same species (CBD, 2005)

An Ecological network model is usually applied by allocating specific functions to different areas depending on their ecological value and their natural-resource potential (Bennett, 2004). All ecological networks include some or all of the following components: core areas, corridors including stepping stones, buffer zones, and restoration areas. There are networks at different scales being integrated into a coherent whole. In Europe, for instance, the development of the Pan-European Ecological Network was not only developed from combining networks already existing at local, national and regional scale. The concept of the Pan-European Ecological Network inspired as well a number of European countries to develop national networks within the already existing Pan-European framework.

2. Development of the Pan-European Ecological Network

The policy framework of the Pan-European Ecological Network: PEEN is a key component of the Pan-European Biological and Landscape Strategy (PEBLDS), endorsed in Sofia in 1995. This Strategy introduces a co-ordinating and unifying framework for strengthening and building upon existing initiatives. Adopted by the Council for the Pan-European Biological and Landscape Strategy, Guidelines for the development of the Pan-European Ecological Network are a reference document for use by all players involved in the development and implementation of the PEEN including policymakers, parliamentarians, natural resource managers, spatial planners, researchers, the academic community, representative organizations, private enterprises and members of non-governmental organizations, on hw to implement PEEN (Council of Europe, 1999).

Following the 5th Ministerial Conference on Environment for Europe (2003) the Ministers and Heads of Delegation of the region of the United Nations Economic Commission for Europe (UNECE) invited the Council of Europe and the European Centre for Nature Conservation (ECNC) to follow up and develop activities supporting the creation of the Pan-European Ecological Network. These activities related to the identification of the constituent elements and to the presentation of coherent indicative maps as a European Contribution to the creation of a global ecological network.

Pan-European Ecological Network components: The Pan-European Ecological Network is built up from three functionally complementary components:

- Core areas that provide the optimum achievable quantity and quality of environmental space: Their conservation will be secured through full implementation of existing

international instruments that provide for the protection of important sites in Europe, particularly Natura 2000 under the EU habitats Directive and the Emerald Network under the Bern Convention, and the policies and programmes of national and regional authorities.

- Corridors to ensure appropriate interconnectivity between the core areas with ecological corridors intended to ensure that species populations have adequate opportunities for dispersal, migration and genetic exchange.
- Buffer zones to protect the core areas and corridors from potentially damaging external influences with buffer zones protecting core areas and corridors of the PEEN.

Implementation of the Pan-European Ecological Network: Designing and implementing an ecological network –especially if a larger territory is to be covered if the network crosses national or administrative borders - generally combines top-down and bottom-up approaches. These approaches see PEEN mostly as a framework concept that stimulates initiatives at all levels and creates synergy with a view to mitigating the effects of fragmentation. The map and questionnaire that were distributed by the Council of Europe to the national PEEN experts at the end of 2004 show that national ecological networks in Europe vary greatly in:

- Geographic scale designed for a whole country or designed for country regions as, for instance, in Belgium, Germany or, in certain respect, in Russia;
- Types of core areas including only nationally protected areas or including nationally and internationally recognised sites as well such as Natura 2000 sites in EU countries and Ramsar sites;
- Proportion of defined core areas and ecological corridors like Ukraine or Hungary.

So far, the PEEN indicative map has been completed in 2003 for Central and Eastern Europe (Belarus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Federation of Russia, Slovak Republic, Ukraine), and for Southern and Eastern Europe (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, The former Yugoslav Republic Macedonia, Greece, Montenegro, Serbia, Slovenia, Turkey). A similar mapping process for Western Europe has been completed in 2006.

3. The legal background to the Pan-European Ecological Network

Various international and Community legal instruments are used to implement the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) and serve as foundations on which the Pan-European Ecological Network (PEEN) can be built. In addition, several countries have introduced binding legislation for the establishment of ecological networks at national level.

The implementation of the PEEN within the context of PEBLDS represents a regional application of the aims of the Convention on Biological Diversity (CBD) and provides an important way of implementing the Ecosystem Approach endorsed by this convention at the Conference of Parties COP 5. PEEN provides as well a useful tool for implementing many of the objectives laid out in the Programme of Work on Protected Areas (PoWPA) and the 2010 Commitment to significantly reduce the rate of biodiversity losses.

Global Conventions

- Convention on Biological Diversity (CBD)
- Ramsar Convention on Wetlands
- World Heritage Convention
- Bonn Convention.

European Conventions

- Bern Convention
- European Landscape Convention
- Convention on the Protection of the Alps
- Carpathian Convention
- Networks of Protected Areas in Regional Seas.

Community instruments for conservation of biodiversity

- The Natura 2000 Network
- The Emerald Network Project as preparatory work to setting up the Natura 2000 network in Non-EU Member countries
- Environmental Action Plans, EC
- Biodiversity Strategy and EC Biodiversity Communication.

Other Community instruments conductive to establishing the Pan-European Ecological Network

- The Environmental Impact Assessment Directive and the Directive on Strategic Environmental Assessment –SEA
- Sectoral instruments such as the Sustainable Development Strategy and the Action Plan for Sustainable Forest Management.

Other networks of protected areas in Europe: In addition to the Natura 2000 and Emerald Networks several other networks of protected sites are in place within Europe as whole.

- World Heritage
- European Diploma
- Ramsar Sites
- Biosphera Reserves
- Biogenetic Reserves
- Networks of protected areas at national level.

Sectoral policies in development corridors: Incorporating environmental considerations into sectoral policies does provide opportunities for restoring conditions favourable to biodiversity, particularly by creating ecological corridors (Klemm, 1992). New schemes may thus allow defragmentation of natural resources habitats by restoring free water course movement, rehabilitating fauna mobility across motorways by means of eco-bridges, preservation of extensive farming systems, and replant of hedgerows in intensive single-cropping landscapes (Council of Europe, 2000). Sectoral policies are vital instruments for the development of the Pan-European Ecological Network with regard to:

- Agro-environmental measures
- Eco-conditionality of subsides
- Multi-functionality in agriculture and rural development
- Establishment of corridors through sustainable forestry policies
- Ministerial Conferences the Protection of Forests in Europe (MSPFE)
- Corridors in national forestry policies.

The biotope interconnectivity rationale should be incorporated into the provisions of the new Forestry Act as has been done, for instance, in Sweden and Finland with regard to measures as. .

- Eco-certification of wood
- Mitigating cut-off effects and developing wildlife pathways
- Défragmentation of aquatic habitats
- Use of linear infrastructures to establish corridors.

Trans-boundary co-operation as a basis for international implementation of the Pan-European Ecological Network:

- Trans-boundary protected areas recognized by international designation (UNESCO-MAB Programme e. g. Austria-Czech Republic, France-Italy)
- Alpine Network of Protected Areas (France-Italy)
- The Lower Danube green corridor (Romania, Bulgaria, Ukraine and Moldova)
- Econet for Central Asia
- The Caucasus Eco-region

The European Green Belt –IUCN Project aims to use the memory of the former iron curtain barrier to create the backbone of an ecological network running the full length of Europe from the Barents Sea to the Adriatic and Black Sea.

4. The relevant networks

Natura 2000 Network, EC Bird Directive and EC Habitats Directive

Establishment of Natura 2000 Network.

- This network extends to the whole territory and the coastal waters of the EU member states.
- The Responsible organisation is the European Commission (EC).
- The main objective of the Network is maintaining or restoring a favourable conservation status of natural habitats and species of wild fauna and flora of Community interest.
- Main components of the network are core areas and corridors.

Special Protection Areas (SPAs) under the EC Bird Directive (79/409/EEC)

- No detailed criteria are given in the Directive.
- Countries identify SPAs for species listed in Annex I of the Directive and for all regularly occurring migratory species.
- Special attention it to be given to wetlands of international importance (Ramsar Sites).
- Countries classify Special Protection Areas and notify the Commission.
- The Commission evaluates such proposals using best available information including IBAs (BirdLife) and other similar national inventories.

Special Areas of Conservation (SACs) under the EC Habitats Directive (92/43/EEC)

- Detailed criteria are given in Annex III of the Directive.
- Countries identify SACs for habitats and species of Community interest (Habitat types in Annex I and Species in Annex II) using Annex III stage 1 criteria for reference.
- Countries propose national listing of sites of Community importance (pSCIs).

- List of pSCIs evaluate by bio-geographic regions whether the pSCIs are sufficient. Bio-geographical seminars and stakeholders consultation put forward the necessary scientific arguments for such evaluation.
- The Commission and Habitats Committee examine and approve Community Lists of SCIs for each bio-geographical region.
- Countries designate SCIs as SACs.

The Natura 2000 Network makes a crucial contribution to the protection of core areas within the Pan-European Ecological Network. As of June 2006, the Natura 2000 Network comprises 20 582 sites under the habitats Directive, including 1 250 marine sites (12% of the area of the EU), and 4 317 sites under the Birds Directive including 459 marine sites (9% of the area of the EU) protecting 175 bird species, 20 animal species and 434 plant species.

Emerald Network

General Aspects:

- Emerald Network is a Pan-European Network of Areas of Special Conservation Interest (ASCIs).
- The network is based on the Bern Convention signed by more than 45 countries.
- It builds up the sites network based on a dedicated list of species and habitats (Resolutions 4 and 6, and the Annex I of the Habitats Directive).
- In practical terms it functions as an extension of the Natura 2000 network in non-EU Member countries.
- 50 States can take part (Contracting Parties and Observers).

The Emerald Network in its Second Phase:

- Continuation of sites data base: 80 % of the sites with 60 % of sites data filled
- Species/habitat: presence within bio geographic regions
- Species/habitat: population data at national level
- GIS boundary data for sites
- GIS distribution data for selection of species and habitats.

Before joining the EU twelve countries had implemented Emerald pilot projects as preparatory work for setting up subsequently the Natura 2000 network. Other countries engaged in the constitution of the Emerald Network are in Western Europe Iceland, Norway, and Switzerland; in Central and Eastern Europe Moldova, the Federation of Russia and Ukraine; and in South-Eastern and the East Europe Albania, Bosnia-Herzegovina, Croatia, Montenegro, The Former Yugoslav Republic of Macedonia, Serbia, Turkey; and in the South Caucasus Armenia, Azerbaijan and Georgia.

5. Development of the Pan-European Ecological Network in Serbia

As a first step towards establishment of the ecological network, as well as the integration of economic and environmental policies, several important international projects have been started and are in progress in Serbia.

Global Conventions ratified

- Convention on Biological Diversity
- Ramsar Convention on Wetlands
- World Heritage Convention
- Bonn Convention

European Conventions ratified

- Bern Convention
- Carpathian Convention

Policy and Legislation established

- Law on Environmental Protection
- Law on Environmental Impact Assessment in accordance with the Environmental Impact Assessment Directive of the EU
- Law on Strategic Environmental Assessment according to the EU Directive on Strategic Environmental assessment –SEA

Policy and Legislation in progress

- Strategy on Sustainable Development of the Republic of Serbia
- National Environmental Action Plan
- Strategy of Sustainable Use of Natural Resources and Goods
- Strategy of Biodiversity Conservation and Action Plan
- Law on Nature Protection – harmonization with EU regulations

Definition of terms for accessing the Ecological Network in Serbia - Projects:

- Project "Development of EMERALD Network in the Republic of Serbia"
- Harmonisation of national nomenclature for classifying of habitats with International standards
- Inventory of Wetlands in the Republic of Serbia
- Important Plant Areas (IPAs) in Serbia under the EC Habitats Directive (92/43/EEC) as Special Areas of Conservation (SACs)
- Important Bird Areas (IBAs) in Serbia under the EC Bird Directive (79/409/EEC)-SPAs
- Development of the NATURA 2000 Network Project / Twining Project has approved by EC to be started 2008/2009.
- Establishment of the Green Belt of Serbia according to the European Green Belt Project.

The preliminary list of Important Plant Areas (IPAs) in Serbia includes the territories of 5 National parks and more than 10 natural reserves, as well as several areas which are not actually protected but are of particular conservation interest.

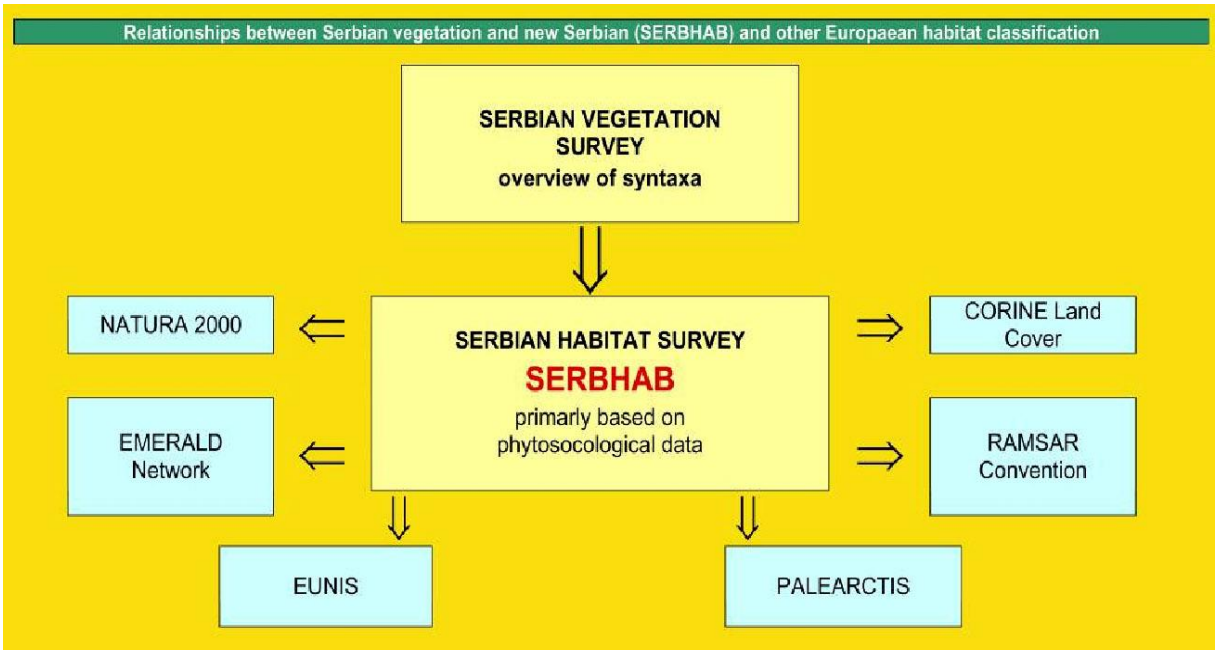

Figure 1. Project "Harmonisation of national nomenclature for classifying of habitats with International community standards" (Lakusic at al, 2005)

Forthcoming Results of Projects

- Development of a Common Geo Database as a Professional Basis for conservation and development of the European Green Belt Initiative
- Integration of local community development and nature protection into the European Green Belt
- Increasing awareness about biodiversity and sustainable community development in the Stara Planina area
- Development of an Ecological Network for the Sava River area
- Regional Cooperation Initiative for strengthening and qualification of the Public Administration in six Balkan Countries- FORMEZ / Italy.

Ongoing Projects

- Sava River Floodplain Biodiversity Conservation
- Developement of a Carpathian Ecological Network
- Developement of an Ecological Network for Serbia
- Facilitating the Pan-European Ecological Network: a programme focusing on the Balkans and the Black Sea Area
- CORINE Land Cover 2000 Database for Serbia has been implemented by 2008.

Trans-boundary cooperation - Bilateral Agreements

- Memorandum of Cooperation FYR Macedonia (signed)
- Memorandum of Cooperation Albania (signed)
- Memorandum of Cooperation Montenegro (signed)

- Memorandum of Cooperation Hungary (signed)
- Memorandum of Cooperation Bulgaria (to be signed during the VI Ministerial Conference in Belgrade - EfE)
- Memorandum of Cooperation Slovenia (to be signed during the VI Ministerial Conference in Belgrade –EfE)
- Memorandum of Cooperation Croatia (in progress)
- Memorandum of Cooperation Bosnia and Herzegovina (in progress)
- Memorandum of Cooperation Romania (in progress).

Transboundary Cooperation in the field of the Nature Conservation

- Hungary – Special Nature Reserves: Gornje Podunavlje, Suboticko-Horgoska Pescara, Selevenjske pustare, Ludasko Jezero, Pasnjaci velike Droplje
- Bulgaria – Nature Park Stara planina
- Romania – National Park Djerdap, Regional Nature Park Vrsacke planine, Pasnjaci velike Droplje

6. Objectives and expected results

Objectives

- Establishment and Development of the Pan-European Ecological Network in the Central and South-Eastern European Region
- Institutional arrangements for formal collaboration with all border countries
- Integration of the Pan-European Ecological Network in relevant sectoral policies such as in particular policies related to agriculture, forestry, water-management, spatial planning, industry development, energy, economic and social demands, culture, and education.
- Establishment of mechanisms of future collaboration between stakeholders at international, national, regional and local levels in order to preserve and protect habitats and species of international and national importance, and ensuring sustainable development of Pan-European Ecological Network
- Establishment improvement of wildlife monitoring and hunting management
- Preparation of new guidelines and methodology for the development of plans and programs of protected areas management, creation of corridors, spatial planning and development and natural resources management at the regional and national level
- Elaboration of GAP analysis according to the IUCN-WCPA framework for effectiveness evaluation and sharing experiences learned from protected areas management
- Mobilization of financial resources through different mechanisms for implementation PoWPA
- Incentives to multidisciplinary research in order to develop new methodologies to preserve natural resources and promote an integrative ecosystem approach
- Establishment of mechanisms of public participation in the formulation and implementation including mass media participation.

Results to be expected

- Completion of a study on the status of the Pan-European Ecological network in the CEE Region within transboundary cooperation with neighboring countries
- Substantive databases with clear maps according to GIS harmonized procedures indicating the status of protected area management
- Availability of coordination system in respect to relevant stakeholders in project activities
- Harmonization of the implementation process of Global and European Conventions and other strategies and programs within the process of functioning of PEEN in Serbia
- Transformation of protected areas at national level into the status of Transboundary Biosphere Reserves where appropriate.

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Adaptation of forestry legislation and management according to European Nature Conservation Directives in Slovenia

Gregor Danev and Darij Krajčič [1]

Abstract

This article describes changes in forestry legislation in 2007 which occurred due to the newest environmental and nature conservation legislation changes in Slovenia, and also due to the ownership demands throughout participation processes concerning nature resource management. The changes needed in forestry legislation for implementation of Natura 2000 requirements into forestry management plans were communicated through a participatory process leading to the adoption of the Resolution on a National Forest Program, and through the process of amending the Regulation on the forest management and silviculture plans. The legislation changes make it possible that forestry unit management plans can serve at the same time as natural resources management plans for Natura 2000 sites.

Keywords: National Forestry Program, Natura 2000 Site Management Program, Forestry management, Slovenia.

1. Introduction

In 2004 Slovenia designated the Natura 2000 sites and undertook to protect and manage them appropriately. There are 286 Natura 2000 sites in total encompassing approximately 36% of the country. With regard to the number of protected species and the proportion of the national territory included in the Natura 2000 network, Slovenia is at the very top of the European list (OPERATIONAL PROGRAMME, 2007). Forests cover over 60 % of the surface of Slovenia. Almost 71 % of Natura 2000 sites are covered by forests which means that almost 50 % of Slovenian forests are in Natura 2000. A particular characteristic of Slovenia is its great diversity of animal and plant species in a small area and its well-preserved nature.

Table 5: Comparison between the number of species and habitat types of Community importance in the EU and in Slovenia (Source: OPERATIONAL PROGRAMME, 2007)

	EU 25	SLOVENIA
HABITAT TYPES	218	56
BIRDS	125	57
MAMMALS	51	16
REPTILES AND AMPHIBIA	48	8
FISH	82	27
INVERTEBRATES	134	33
PLANTS	572	27

The Habitats (HD COUNCIL DIRECTIVE 92/43/EEC) and the Birds Directive (BD, COUNCIL DIRECTIVE 79/409/EEC) prescribe new responsibilities and obligations to nature conservation especially in Article 6 of the Habitats Directive. The obligations emerging from both directives have been introduced into Slovenian legislation with regulations on nature conservation (OPERATIONAL PROGRAMME, 2007). The changes

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needed in forestry legislation to introduce Natura 2000 requirements were communicated in 2007 trough a participation process of adopting the Act amending the Act on Forests, the Resolution on the National Forest Program (hereinafter NGP), and the Amendments to the Rules on forest management and silviculture plans. Amendments in Rules amending the Rules on forest management and silviculture plans, as due to the Natura 2000 objectives and measures, were attained trough cooperation between the forestry and the nature protection sector in LIFE III – Nature (LIFE04NAT/SI/000240, hereinafter LIFE) through the project called "Natura 2000 in Slovenia – Management Models and Information System". One of the project's activities was the elaboration of the management models in forested areas. The LIFE project models of managing Natura 2000 sites through a sectoral planning management system has shown to be the most efficient and reasonable way of managing Natura 2000 sites in Slovenia (DANEV [at al.], 2007).

2. Nature conservation

Slovenian nature conservation forms an equal part in the system of environmental protection, joint planning, programming, monitoring etc. The Environmental Protection Act (Official Gazette of the RS, No. 39/06 hereinafter ZVO-1) provides a systematic framework for nature conservation of which biodiversity conservation is an important element. ZVO-1 also encompasses a National Programme on Nature Protection which has been adopted within the Resolution on the National Environmental Action Plan 2005-2012 (hereinafter ReNPVO). ReNPVO is based on long-term objectives, policies and biodiversity tasks and it suggests an operational programme for the management of Natura 2000 sites as one of the key environmental protection programmes (OPERATIONAL PROGRAMME, 2007). The Operational programme is outlined by the Nature Conservation Act (hereinafter ZON) and the detailed content is defined by Decree on Special Protected Areas (Natura 2000 sites).

2.1 Nature conservation act

Through protection of valuable features of nature and the elements of biological diversity ZON establishes an integral system of nature conservation. The protection of special protected areas (Natura 2000 sites) is provided for through the attainment of specific objectives and defined measures. Protection measures include several contract-based commitments and sustainable management obligations like adaptive forestry unit management plans. Protection measures are outlined on the basis of a special management programme which is defined in ZVO-1 (Paragraph 2 of Article 33 of ZON).

2.2 Decree of special protected areas (Natura 2000 sites)

The Decree on Special Protected Areas (Natura 2000 sites, hereinafter Decree) designates sites, protection objectives, protection measures for the conservation of a favourable status of plant and animal species or their habitats, habitat types which are of Community importance, and other codes of conduct for the conservation of these areas. The Decree specifies how the protection of Natura 2000 of the actual or potential Natura 2000 sites should be planned. The fundamental planning document is the operational programme for the management of Natura 2000 sites (defined in ZVO-1 and ZON). It is intended for the implementation of protection and includes definitions of protection objectives, as well as a definition of protection measures and their implementers, and of the necessary financial resources.

The measures for conservation of elements of biological diversity (Natura 2000 sites) are:

- Nature protection measures;
- Adaptive management and use of natural resources;
- Environmental agricultural measures;
- Adaptive water management;
- Other measures, which might prove necessary for the creation of a favourable status of plant and animal species and habitat types.

2.3 Operational programme: Natura 2000 site management program 2007 - 2013

The operational programme adopted with resolution of the Government of the RS on 11th October 2007 defines in detail protective objectives and conservation measures for Natura 2000 sites. Thereby, all relevant stakeholders in these sites are given key information for their work that contributes to the quality of decision making. The content of the Operational Programme, Natura 2000 site management programme 2007-2013, (hereinafter OP) follows the Decree which defines the programme's obligatory elements. The OP's detailed protection objectives and conservation measures are outlined in Annex 4.2. The protection objectives are defined in such way that they promote the desired ways of human activities at every Natura 2000 site. The protection objectives are given according to the actual knowledge and available information and vary considerably from species to species or among individual habitat types.

The OP delineates detailed conservation measures as related to the protection objectives stipulated under the Decree and specifies the requirements for preservation of habitats of threatened plant and animal species and habitat types. The scope of implementation of detailed conservation measures is the zones of given species or habitat types as essential parts for which the Natura 2000 sites have been designated. These zones have been worked out by the Institute of the RS for Nature Conservation and Slovenian Birdlife (DOPPS). They are available from the register of areas relevant for biodiversity conservation which is a part of the Nature Conservation Information System. It was built in the frame of the LIFE project (hereinafter ISN2k).

The Decree provides for detailed conservation measures of adaptive use of natural resources to be taken into consideration in drafting actual plans. The area of the plans is indicated while the responsibility for implementation according to guidelines is designated by sectoral regulations as, for example, forestry regulations. The conservation measures from Annex 4.2 stipulate in the first step reasonable site related management, implemented according to the Nature Conservation Guidelines in accordance of Article 98 of ZON, and in the second step natural resource usage planning in accordance with the provisions of Article 97 of ZON.

Natural resource management plans defined in Annex 4.3 may be required for the protection of designated Natura 2000 sites. In the process of verifying of such plans an integral environmental impact assessment must be carried out. If these plans contain detailed objectives and measures for attaining protection objectives on the basis of OP and comply with other statutory conditions, they are designated as sustainable management plans or as natural resource management plans necessary for the conservation of a favourable status of habitat types and species protection. In this manner the plans evolve into effective instruments which are directly necessary for the protection of Natura 2000 sites and for which, in accordance with ZON, an acceptability assessment is no longer necessary (OPERATIONAL PROGRAMME, 2007).

The plans must at minimum include detailed conservation measures from Annex 4.2, but predominantly they should include more precise measures as stated in the Nature Conservation Guidelines (hereinafter NCG). NCG should also include specific measures evolving during participatory processes carried out in the forestry sector (Slovenian Forestry Service, hereinafter SFS, Paragraph 6 of Article 7 of the Decree). Detailed protection measures for the adaptive management of forests serving to attain protection objectives are prescribed for Natura 2000 sites and forestry unit management plans in Annex 4.2. Plans with jurisdiction to define the implementation of these measures are designed in accordance with forestry regulations for forest management plans (Rules on the forestry management and silviculture plans). Forestry unit management plans (hereinafter GGN GGE) together with their renewal period are determined in Annex 4.3. The detailed guidelines from Annex 4.2, referring to leaving the dead wood mass in forests, quiet zones, and other restrictions to forest owners are determined in accordance with the Rules on the Protection of Forests (Official Gazette of the RS, No. 56/06) that have been defined among the responsible ministries and the Slovenian Forestry Service (OPERATIONAL PROGRAMME, 2007).

3. Forestry

3.1 General observations

The changes in forestry regulations were needed because of reasons inside Slovenia and because of the international commitments. The most important change for reaching the nature conservation objectives was the renewal of the old National Forestry Programme, and the Amendments in Rules concerning forest management and silviculture plans. For a successful passing of these two regulations the Ministry of the RS for Agriculture, Forestry and Food had to make proposals for the amendment of the Act on Forest. Internal reasons for forestry legislation changes were:

- Adaptation of the applicable legislation to European regulations;
- Changes in the environmental and nature conservation legislation;
- Changes in forests ownership, appearance of different needs and rights of the society, obligations emerging from the new pattern of ownership, and the demand for increased participation of the public in the management of nature goods.

The most important international reason for forestry legislation changes was Resolution No. 1 of the Ministerial Conference for the Protection of Forest in Europe (MCPFE) adopted 2003 in Vienna. The new National Forestry Programme assures the obligations towards sustainable management and the environmental importance of forests, and the adaptation of the rules of forestry management due to the adopted OP and the results of the LIFE project.

3.2 Resolution on national forest program

In accordance to the 7th Article of the Act amending the Act on Forests (hereinafter ZG) the second national forestry program in Slovenia, called Resolution on National Forest Program, was adopted. NGP is a strategic document intended to define national policies of sustainable development of forestry practice. Its main principles are preservation of the forest areas and assuring the multipurpose functions of the Slovenian forests. These principles involve environmental, social and economic aspects of forestry management. On the basis of the present state and appointed objectives, the NGP comprehends the long-term visions of the forestry management which, besides development factors of the forestry-economy sector, define as well a connection between protection of the environment and nature conservation

policy, and the economic sector in cooperation with the timber industry and other forestry based policies.

NGP also carries out the ReNPVO at the national level determining four priorities: climate changes, conservation of natural and biological diversity, protection of the environment for better health conditions, and natural resources and waste prevention risks. The European strategy for sustainable use of natural resources has been an important origin for the NGP which is founded on regional specifics and on an ecosystem approach.

Visions of the National Forest Program:

- Sustainable development of the forests as ecosystems regarding biodiversity preservation and forests' ecological importance, production and social functions. Thus, a co-natural and multifunctional forestry management is to be assured.
- A permanent role of forests in economy development of the rural space using forest goods in a manner adapted to the forests' natural sustainability.
- A permanent role of healthy environment and social development.

Main objectives of the National Forest Program:

- Sustainable development of forests as ecosystems regarding biodiversity preservation and forests' ecology, production and social functions.
- Protection and sustainable management of the wild animals' populations and their environment.
- Efficient communication with private forest owners and with representatives of public interests to ensure the desired way of forest development.

In the chapter "Environmental values of the Slovenian forests", the conservation of biodiversity in Slovenian forests is determined and at three different levels: first at the ecosystem conservation level, second at the level of species conservation, and third at the genetic conservation level. For each level conservation indicators are defined as the result of several meetings between both responsible ministries and experts from SFS and IRSNC. Main indicators of forests' biodiversity conservation at all three levels are:

- Surface of protected forests;
- Surface of forest habitat types and species of EU Community importance;
- Surface of quiet zones, eco-cells, reserves, etc;
- Structure of forests at conservation levels, share of tree species in different growth phases, share of dead biomass in protected forests, etc;
- Number and conservation status of endangered animal species;
- Migration corridors, and surface of forests intended for the conservation of genetic pools;
- Overgrowth areas and landscape patterns.

3.3 Rules on forest management and silviculture plans

In accordance with 16th Article of the ZG, the Amendments to the Rules on the forestry management and silviculture plans were adopted (hereinafter Rules). The Rules determine the contents and the methods of making the general part of forestry management plans, the silviculture plans, the terms and specific procedure of adoption, and the way of implementing the plans in practice. The main objective for changing the Rules was the synchronization between nature conservation and forestry legislation changes. According to experiences from the LIFE project, SFS and IRSNC pointed to the necessity of this synchronization. In the LIFE project, IRSNC and SFS developed specific proposals for forestry management plans needed for attaining a favorable conservation status of species and their habitats, and of habitat types of Community importance (DANEV, 2006). In the process of development the institutions met some regulative obstacles in forestry legislations.

These obstacles were presented and communicated to the responsible ministry (DANEV [at all], 2007) which was willing to accept the proposals for changes. In the process of amending the Rules, the main LIFE project proposals were taken in account. The main changes in the Rules are the following ones:

- More precise definition of the biodiversity conservation functions of forests;
- More precise definition of the conservation function of valuable features of nature;
- Inclusion of non forested areas below forest boundaries in forest function mapping including screeds, rock walls and grasslands except settled mountain pastures;
- Inclusion of agricultural land in forested areas if its surface is below 0,5 ha;
- Inclusion of detailed objectives (from OP), detailed measures, and more specific measures (from NCG) for attaining the favorable conservation status of species, their habitats and habitat types of Community importance into the GGN GGE;
- Detailed procedure for adopting the GGN GGE located inside Natura 2000 sites as the natural resource management plan.

4. Results and Discussion

To include the Natura 2000 requirements into forestry management practices changes in forestry legislation were needed. The changes were done trough a participation process between the Ministry for Agriculture, Forestry and Food and the Ministry of Environment and Spatial Planning. In the frame of the LIFE project, SFS and IRSNC have developed a methodology of how to include the Natura 2000 requirements into existing forestry management practices in Slovenia. Trough a series of workshops and other participation events the methodology was incorporated into OP, and accepted by the Ministry for Agriculture, Forestry and Food.

After the legislation changes, SFS and IRSNC started to implement the LIFE project results in practice. The NCG elaboration process now runs trough a set of workshops in which both institutions actually participate with the effect that all the issues are harmonized ("on-line"). The implementation of nature conservation regulations in forestry management practices is thus easier and more straightforward. Foresters no longer consider NCG as a foreign directive.

The legislation changes and the system of workshops makes it possible that forestry unit management plans can serve as a natural resources management plan which is necessary for

the conservation of a favourable status of habitat types and habitats of species in these areas. In that way the Republic of Slovenia will comply with the obligations of both directives on more than 70% of the Natura 2000 sites' surface area without producing a master document or a special nature conservation management plan. According to our knowledge this is a unique way of Natura 2000 sites management in forests in Europe.

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Principles of environmental governance in policy design and implementation: Experiences from Alpine and Carpathian Conventions and implications for the Balkan Mountain Initiative

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Abstract:

New modes of environmental governance are emerging in global, regional, and local policy processes. The policy implications of new governance principles challenge both decision-makers and scientific communities. A key issue for both policy and research are the interrelations between governance principles, policy changes, and implementation of new policy and legal frameworks.

Recognising the numerous factors influencing the policy dialogue – such as the local socio-economic and political conditions, inclination for policy reform, etc. – we look at *specific governance dimensions* of these factors, and their impacts on policy dialogue. The paper discusses the policy implications of governance principles such as *participation and partnership building* in two mountain conventions - Alpine and Carpathian Convention. It is based on a study about governance principles in the Alpine and the Carpathian Conventions for sustainable development of mountains[1]. Two main issues are addressed in the paper: (i) the implications of participation and partnerships for design and implementation of the conventions; and (ii) the 'best practices', from these two Conventions, that can inform an initiative for South-East European (SEE) or Balkan Mountain Convention.

Concerning the first, we find that participation and multi-stakeholder approach can strengthen the policy dialogue and policy implementation processes. As regards the Balkan Mountain Initiative, various implications are discussed. The importance of local governance structures, the role of international ideas, and need for advocacy and networking are found particularly relevant. Understanding the roles of different governance principles in policy design and implementation significantly contributes to the ability of policy makers to more effectively achieve desired policy goals.

1. Introduction

For policy makers, scientists and citizens to be able to employ the emerging governance principles in an effective manner, a sound understanding of the practical policy implications of these principles is necessary. Recent studies suggest that the public-private interactions, including the roles and strategies of different actors in policy related issues, are not well covered and understood[2]. An emerging trend of studies focusing on the interrelations between different modes of governance and policy aspects, however, bring increasingly the issue to the

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[1] See Ramcilovic, S. (2009)

[2] See for e.g. Environmental Policy Integration and Multi-level Governance Project (EPIGOV); New Modes of Governance Project (NewGov).

attention[3]. Some authors emphasize the roles of 'more tangible' factors on policy outcomes (such as political commitment and leadership) over the role of governance aspects (EEA, 2005; Jordan, A. and Schout, A. 2003). Homeyer, I. (2006), using the same case study as Jordan, A. and Schout, A. (2003) of implementation of environmental policy integration in the UK, concludes that 'governance structures are conducive to policy aspects'. Further, Homeyer, I. (2006) suggests that new modes of governance have high opportunities for effective environmental policy integration. Brinkerhoff, D. (1998a) similarly finds that good governance elements and main governance principles have high potentials to positively influence policy changes, policy design and implementation.

Governance structures and policy issues are complex, thus there are no simple solutions, and trade-offs often need to be made. Policy formulation and implementation are continuous and iterative processes, and therefore they should not be seen as 'technical blueprints'. Putting governance to work largely depend on the specific conditions and in particular an appropriate institutional system, including policies and legal backing. Different impacts of principles of governance on the policy dialogue are acknowledged in the literature. A beneficial role of state-civil society partnerships is explained in Brinkerhoff, D. (1998b). However, Crosby, B. (2000) gives various challenges related to public participation in policy making, such as large transactional costs and effectiveness of the process. The present paper discusses the potential impacts of participation, bottom-up and multi-actor driven initiatives on policy design, and it is based on the Alpine and the Carpathian Conventions, as case studies.

Convention on the Protection of the Alps[4]: The Alpine Convention is an international treaty for the protection of the Alps between Austria, Switzerland, Germany, France, the Principality of Liechtenstein, Italy, the Principality of Monaco, Slovenia and the European Community. It was signed in 1991 and came into force in 1995. The idea for a convention dates back forty years prior to the final agreement. The convention is widely quoted as the first international convention for protection and sustainable development of mountains; as a successful model for similar initiatives in other mountain regions; and a model for environmental governance.

Framework Convention on the Protection and Sustainable Development of the Carpathians[5]*:* The Carpathian Convention is an international agreement between the Czech Republic, Hungary, Poland, Romania, Serbia, the Slovak Republic and Ukraine. It was signed in 2003 and entered into force in 2006. Officially the idea for a convention was born only two years prior the reached agreement. The Carpathian Convention is the first International Convention for Mountains where the integrated approach and integrated management of natural resources; cultural heritage and traditional knowledge; awareness raising; education and public participation are stated in the original framework convention and in other strategic documents of the Convention.

SEE (Balkan) Mountain Initiative[6]: This is an initiative for the SEE (Balkan) Convention for protection and sustainable development of mountains, between Albania, Bosnia and Herzegovina, Bulgaria, Serbia, Croatia, Macedonia, Kosovo (under UNMIK); with a possible association of Greece and Slovenia. The initiative was born in 2004, and it was rather enthusiastic through 2005 and 2006. However, recently there have not been activities or meetings of the parties taking place. While the Alpine and the Carpathian Conventions are

[3] See Environmental Policy Integration and Multi-level Governance Project (EPIGOV); USAID Implementing Policy Change Project (IPC); Environmental Governance Policy Coordination and Policy Appraisal Project.
[4] http://www.convenzionedellealpi.org
[5] www.carpathianconvention.org
[6] www.balkanfoundation.org/eng/balkan_convention.htm

studied in terms of the governance principles' application and effectiveness; the purpose of involving the SEE initiative in the study is to identify best practices from the Alpine and the Carpathian Convention.

Our understanding of governance builds on two critical lines, both referring to decision making processes, – changing trends in governing modes, and normative dimension of governance. Further, there are two key aspects: the non-hierarchical governing and involving of different stakeholders (private, public and social entities). In our way to defining governance, we put particular stress on the 'process' (how the things are done); and on the institutional capacities for more efficient and effective resolving of collective action problems and increasing of problem-solving capacities. Putting these characteristics together allows shaping a comprehensive outline of governance in this study: *"Contemporary understandings of governance are mainly related to the non-hierarchical governing involving stakeholders and actors from different levels in formal and informal processes of cooperation and interactions from local to global level, towards resolving societal problems and creating opportunities through generative politics"*[7].

Public Participation is a base of the very notion of governance. It is one of the core elements of contemporary understandings and definitions on governance. In addition, both Conventions by influencing the mountain regions directly influence a wide variety of entities and stakeholders, at different levels and scales.

The principle of Partnerships in this work is correlated with networking as well. The principles refer to the cooperation between different actors and at different levels. Building partnerships and networking is regarded at two different scales: within and outside the respective mountain regions. In addition, a certain level of cooperation with international instruments in place should be also ensured, such as Convention on Biodiversity, Aarhus Convention, Millennium Development Goals.

The findings presented in this paper are mainly based on a study on certain governance principles in the Alpine and the Carpathian Convention (Ramcilovic, S. 2009). The primary objective of the study was to evaluate the governance principles in the Alpine and the Carpathian Conventions' emergence, negotiation and implementation processes. However, the main findings revealed few significant correlations between studied governance principles and policy design, policy changes and implementation. These correlations are further developed in this paper, building on the existing literature on environmental policy and policy changes, as well as on the sparse secondary literature on the conventions produced so far.

2. The Alpine Convention – governance principles at an early stage

The Alpine Convention is often referred as "currently the most advanced example of a regional mountain sustainable development (SD) initiative" (Egerer, H. 2002), and as a "potential model of earth system governance" *(Balsiger, J. 2007).* The authors give sound evidence for their position; however, studying the Convention's development stages – from emergence to negotiation and implementation – reveal various challenges regarding governance processes. This can, to some extent, be explained by the fact that the political relevance of SD and governance principles at the time of the Alpine Convention Agreement in 1991, before the Earth Summit in Rio, was lesser compared to that after the so-called Earth Summit.

[7] For wider literature review on the concept of governance see Ramcilovic, S. 2009

When discussing the *emerging* of the Alpine Convention, the initial endeavours of four Alpine states[8], the German Nature Protection Organisation and the IUCN, in 1950s, should be highlighted. This endeavour culminated in founding an International Commission for the Protection of the Alpine Region (CIPRA), in 1952. The Commission latter on, in 1975, was restructured to include only NGOs (Price, M. 1999). This brings up the question of emergence of the Alpine Convention, if it was a top-down or bottom-up initiative and state or civil society driven process. This is essential, as the internal inclinations for change from the local actors are relevant precondition for sustainable and effective policy change. Externally initiated policy change, without a certain level of local peoples' ownership and participation are likely to suffer from lack of support and local ownership (Brinkerhoff. D.1996).

The role of CIPRA, as a NGO, is crucial in the entire AC process, from its emergence to present days. However, CIPRA, intensively supported by some of the Alpine states, was the only actor pushing for the AC along the working groups of the Alpine regions (ARGE ALP, the ARGE Alpen-Adria and COTRAO). A limited involvement of the cantons in Switzerland is considered to have had an impact on delaying the ratification of the Convention in the country. As discussed in Ramcilovic, S. (2009), it can be rightfully argued that the Alpine Convention did not emerge through multi-actor and multi-stakeholder driven processes and bottom-up initiatives. The role of the Alpine states was over-emphasized compared to that of other actors – non-governmental and private actors. The diversity of actors lobbying for the Alpine Convention was limited, and there was a lack of initiatives and political will to include more stakeholders.

Participation of larger public, so far, has not achieved a significant improvement in the Alpine process. The problem of participation is related to the initial bottom-up approaches, and to the way of protocol negotiations. On the other hand, the Alpine countries have well-established local governance structures such as the civil society and local communities. The Convention has adopted an observatory status for NGOs with established rules and conditions for participation. This approach, while being an instrument for encouraging participation, tends to limit participation of NGOs and other stakeholders. There are so far only eleven organisations with official observer status (Götz, A. 2002). However, the risk of 'indicators failure' – applying simplistic quantitative indicators, such as number of observing NGOs, in studying participation, should be acknowledged. In the interview phase of our study, we found that some of the accredited observer NGOs are large umbrella organisations with up to 100 members. In summary, wider participation in the Alpine Convention, especially in the decision making processes, to date is perceived to be weak. The Convention bodies so far have not focused in improving the situation. Despite the challenges for wider participation in the Alpine Convention the established networks provide an important counter balance to the top-down approaches, by bottom-up locally relevant initiatives and implementation programmes.

Partnership building in practice is tightly related to networking; thus both are merged and discussed together. Partnership building in the Alpine Convention, since recently, has received a particular attention. It occurs at two levels, within the Alpine region, and with other mountain regions. The partnership building among mountain regions is promoted and backed by the international mountain initiatives[9]. The increased accent on partnerships in the Alpine Conference, and Convention's documents is largely promoted and provided in the

[8] Austria, France, Italy and Switzerland.

[9] Among the key initiatives are: the Agenda 21 and Chapter 13, the UN Resolutions on International Year of Mountain (IYM), the Bali Document, the International Mountain Partnership and the Bishek Conferences.

Convention's Multi-Annual Work Programme 2005-2010. Indeed, the Convention's contribution to network building and positive impact on establishment of a large number of transalpine organisations is considered to be one of the most important benefits of the Convention (Balsiger, J. 2007). An important facilitator of partnership building is the EU INTERREG programme which supports partnerships and networking projects and activities in the Alpine region. The Alpine network of protected areas (ALPARC) and the network of municipalities (Alliance of the Alps) are particularly active. The convention has been also encouraging the partnership building in other mountain regions mainly through sharing of the Alpine experience in networking[10]. In summary, urged by international initiatives and supported by the INTERREG Programme, the Convention has positively influenced the networking and partnership building in the Alpine region. There are various networks implementing the convention's objectives through bottom-up initiatives.

After having described and summarised the issues related to participation and partnership building in the Alpine process, we focus more thoroughly on the convention's emergence, negotiation and implementation activities, in order to find the existing correlations. The Alpine Convention has relatively long history of intent and negotiation. CIPRA in its founding documents of 1952 stated the creation of a cross-border Alpine Convention as one of the main objectives (Götz, A. 2002). However, the convention was signed almost forty years latter in 1991. The preparatory meetings that took place, prior the Convention was signed, were bottom-up and with limited stakeholders' involvement.

Signing of the Alpine Framework Convention merely implies that the parties accepted the Convention's general principles, while the implementation is to be defined in thematic protocols. After the agreement on the Convention, the negotiation of the thematic protocols was, and still is, a rather complicated and slow process[11]. However, if the number of drafted protocols is considered, the Alpine Convention is a fast-going and proactive Convention. Negotiation of some protocols started even prior the Convention entered into force, in 1995. The Convention's protocols are of a general character and the general approach applied to the highly complex issues resulted in various negotiation and implementation difficulties. In addition, the bare focus on protocol development can be criticised for having hampering effects on the convention's implementation. The implementation through activities at the ground level is recognised as beneficial for improving participation and citizen ownership of policy reforms. The entire issue of negotiation and implementation was further hardened by the perceptions that the Convention is a 'green convention' overlooking the socio-economic issues; and due to the initial top-down approaches. Finally, the long period it took to set up a permanent secretariat of convention (more than 10 years), and the consequent bi-annual shifting of the entire convention's 'apparatus' during this time, has added to discontinuity of the process.

[10] Some examples are: The Network of Protected Areas in Carpathians (CNPA), The Alliance of Central Asian Mountain Communities (AGOCA), The Alliance of Central Asian Mountain Communities, The cross-border village network in Caucasus.

[11] Italy and Switzerland still have not ratified any thematic protocols. For AC protocol status of ratification see: http://www.convenzionedellealpi.org/page3_en.htm#A2

3. Carpathian Convention – timely influence of governance principles at the stage of policy design

Alike the Alpine Convention, the Carpathian Convention is a Framework Convention, which does not assign any specific duties to the parties. It includes general provisions concerning thematic areas to be further specified through decisions and protocols. The Carpathian Convention is largely inspired by the Alpine Convention. Despite that, the Carpathian Convention follows somewhat different approaches that are mainly related to different conditions in the two regions, to different actor composition, and to different times of emergence of the two Conventions.

Primarily, it should be noted that the Carpathian Convention is still at an early stage, and even though it is rather dynamic, the Convention's impacts are yet to be seen. Highlighting of the governance principles in the Convention's official policy documents does not necessarily imply their practical implementation. However, it is interesting to observe how governance principles are increasingly emerging and shaping the convention's main contours. *"The Carpathian Convention is a unique partnership, providing a trans-national framework for cooperation and multi-sectoral policy integration, an open forum for participation by stakeholders and the public, and a platform for developing and implementing trans-national strategies, programmes and projects for protection and sustainable development"* (Carpathian Declaration, 2006). The convention refers to many relevant principles such as: policy integration, awareness rising, education and public participation, integrated natural resource management, eco-system approach, environmental assessment, monitoring and early warning, and to cultural heritage and traditional knowledge (Framework Convention, 2003; COP1, 2006; FAO/SEUR, 2006).

The Carpathian Convention was established through an intensive negotiation process. The first informal meeting of the parties was convened in November 2001. After that, a series of five negotiation meetings followed in the next year-and-half period of time. Some Alpine countries, Austria and Italy, per se, directly supported the negotiation process. Regarding the stakeholders' involvement in the negotiation process, a large range of governmental and non-governmental international actors were involved; including representatives from the Carpathian countries, Alpine countries, the UNEP-Regional Office for Europe (UNEP-ROE), WWF, the European Mountain Forum, Regional Environmental Centre (REC), Central and East European Working Group for the Enhancement of Biodiversity (CEEweb); European Academy, Bolzano EURAC); The Northern Alliance for Sustainability (ANPED) and numerous other international and regional non-governmental organisations. The role of UNEP-ROE acting as the Interim Secretariat of the Convention (ISCC) has been crucial in the Carpathian process. Despite the participatory approach of the Convention, the challenge of weakly established local governance structures in the region should be emphasised. This turned to be one of the main challenges and factors limiting a better involvement of local actors in the Carpathian process.

In summary, the promotion of the Carpathian Convention was a joint action of more stakeholders and NGOs. The role of the state is not extensive compared to the role of other actors. Along with national and regional actors, international actors including governmental, intergovernmental and non-governmental organisations have had a crucial role in the emergence and negotiation processes. Despite the participatory approach, the role and involvement of local actors is not sufficient due to the limited local governance structures and capacities. There are in general positive impressions and expectations about the application of good governance principles in the Carpathian process. The Convention's open and

participative approach is particularly emphasised as an encouraging factor. Nevertheless limitations to governance principles remain mainly related to missing information systems and to the 'young' civil society in the region.

While there are relatively small structures of local governance for municipalities and local NGOs, the public's participation process is promoted and acknowledged. One example is the ANPED project[12], the results of which were taken as a starting point for drafting related protocols. There are no official rules for participation to the convention's meetings. The involvement of NGOs in the convention's working groups, and negotiation of the protocols is also well developed. Finally, we should point out that participation refers to two different levels – access to information and decision making powers. As the Convention is at an early stage the access to decision making is yet rather uncertain. On the other hand the Convention applies an open and participative approach to civil society with no specific procedures and requirements for participation. Due to the local actor weak structures and capacities the role of local and regional NGOs needs further improvement.

There is a positive tendency toward *partnership building and networking* across the Carpathians. Evident examples are the Memoranda of Understanding (MoU) among different organisations. The Carpathian Project, involving about eighteen partners and the Carpathian network of protected areas (CNPA) are foremost to be mentioned. However, not many networks of this kind have been established yet. There are, for instance, no networks among municipalities and among research institutions related to Convention activities. An additional obstacle for better networking is the challenge to establish the Carpathian Space programme, which is expected to significantly promote the cooperation among the actors in the region. To conclude, there is a positive tendency in partnership building, evident through the established memoranda of understanding. The most evident examples are the Carpathian Network of Protected Areas (CNPA) and the Carpathian project.

After signing the Convention in 2003, most countries ratified the Convention in 2006, apart from Romania and Serbia, which did it in 2007 and 2008, respectively. Alike in the case of the Alpine Convention, signing and ratifying of the Carpathian Convention is merely the beginning of the process. Implementation of the Carpathian Convention, in terms of changes in national policies, is at this stage too early to discuss. The Conventions' main institutions – focal points and working groups – have been established and various initiatives for small-scale projects are actively taking place (Fall, J. 2005). The Carpathian Convention, perhaps already learning from the Alpine experience in protocol development, started its way forward by concentrating on both – protocol development and projects. For instance, national assessments in the fields of policies, institutions and stakeholder consultations in identifying the action areas are already conducted. However, evaluated against the Alpine process, one could argue that unlike in the Alpine region, in the Carpathians there is a lack of research and available data and thus the need for these assessment was imperative. Despite the fact that the protocols are in a development phase, and considering the projects related to the CC in place [13], the Carpathian convention is making an important impact at the ground level. "Focussing initially largely on environmental issues and concrete, small-scale projects…, the Carpathian Convention may have already started to build confidence among a variety of actors

[12] ANPED (Northern Alliance for Sustainability) is co-ordinating a project to facilitate public participation in the decision-making process of the Carpathian Convention. See: http://www.anped.org/index.php?part=45

[13] Among the most prominent projects and initiatives are: Sustainable Agriculture and Rural development (SARDM) Project; National Assessment of the policy, legislative and institutional frameworks related to the Carpathian Convention; Handbook on the Carpathian Convention; Carpathian Network of Protected Areas (CNPA); Carpathian Wetland Initiative (CWI); Carpathian Project; Carpathians Environment Outlook.

throughout the mountain range" (Fall, J. 2005). We can thus conclude that the Carpathian experience shows a smooth negotiation process and positive strategy for the implementation. Referring to the present governance elements, positive correlations between encouraging policy outcomes and the good governance principles can be made.

4. Balkan Mountain Initiative – towards a model for governance based design

Good governance principles can provide beneficial input into policy and sectoral reforms. For instance, partnerships can mobilise underutilised resources; participation of informed stakeholders can assure better technical quality and increase the efficiency and effectiveness of policy reform. In general, by creating broader institutional frameworks and conditions for political liberalisation, good governance principles enable market led economic growth and contribute to the implementation of sectoral reform. Positive correlations between governance elements and policy aspects in specific sectors have also been explored, for example, in infrastructure policy (Ostrom et al. 1993) and in forestry and natural resources policies (Didia, 1997). Based on the theoretical assumptions about the positive interrelations between governance principles and effective policy dialogue, as well as on the correlations drawn above, we have identified the following recommendations that seem to be relevant for the Balkan Mountain Initiative.

1. Initiating and further heading the policy reform process through public-private partnerships and increasing public participation.

The Implementation Policy Change Project, 1990-2000 (IPC) presents four case studies of state-civil society partnerships in policy reforms (see Brinkerhof, D. 1998b). The conclusion from the studies is that if managed properly, partnerships between public and private actors are beneficial at all stages of policy process and in addition enhance democratic governance structures. In the Alpine and the Carpathian conventions we have found that lack of stakeholder involvement and top-down approaches have hindered the policy formation process. This has resulted in a lack of ownership of the process by local actors, insignificant stakeholders' diversity in the process, and problems in ratification.

Based on the Alpine and the Carpathian experience, the following learned lessons are identified as particularly important:

- *Capacity building:* There are some basic factors for partnerships to be effective, such as clearly specified objectives, roles, responsibilities, thus institutions, and degree of convergence. Central for all of them is the capacity of involved actors to follow and influence the process (e.g. negotiation capacities). In general, there is a lack of capacity of those who demand participation (civil society organisations, local communities) and those who are to respond to this demand, or interest (policy makers and managers). Thus, we talk about 2 levels of capacities: 'participative capacity' and 'leadership capacity'. In the Carpathian case the relatively young civil society, and lack of participative capacity was especially emphasised. Considering the conditions in the Balkans, with further smaller structures of civil society and their involvement in larger governance structures, capacity building for more effective participation should receive particular attention.

- *Sustainable means of funding for strengthening participation*: Sustainable funding is crucial to the policy reform and implementation. Thus appropriate funding means should be strategically and timely planned. Funding problems were identified as an important obstacle to larger participation and partnership building activities in both conventions. Identification of priority fields for funding is another important issue to be carefully planned. In the Alpine case, the INTERREG programme, referring to the convention in a clearly defined Alpine

region, was particularly beneficial for promotion of the Convention and improved networking in the region. In addition, direct small-scale projects at the ground level (which obviously needs financial inputs) empower local people, attract their interest and strengthen their ownership of the policy process.

2. Adopting a holistic approach based on the sustainable development pillars, policy integration and complex system thinking

Considering the nature of the policy we are studying – multilateral mountain convention – there are numerous issues to betaken into account. Integration of different policy fields is a challenge that can't be achieved; yet, it is a direction-providing landmark. Growing importance of policy integration goes hand in hand with an increasing number of policy fields, dealing with multidisciplinary and multi-fields. Coherent policies undertake the specific issues in a more effective and efficient way, avoiding overlapping in policy goals and resource allocation. However, apart from benefits, there are number of risks related to policy integration, such as the loss of control and autonomy over the unilateral issues, and the conflict over domain, goals and methods (Alter, C. and Hage, J. 1993). In case of the Alpine Convention two main levels of conflicts of integration were found (i) conflicts to integrate different countries' interest and power structure and (ii) conflict to balance the priority development issues (environmental vs. socio-economic). Both were identified among the main difficulties for negotiation, ratification and implementation of the convention. Holistic and system thinking strategy to deal with complex and interrelated policy issues should be applied.

Based on the Alpine and the Carpathian experience the following suggestions related to policy integration are suggested:

- *Multi-sectoral negotiation of the convention*: In the Alpine case, a certain level of coordination between different sectors have taken place at the national level, the negotiation of the Convention involved merely the environmental ministries. The matters concerning the Alpine Convention in some of the Alpine states are based in the national environmental agencies (e.g. in Switzerland). This approach might have had hindering impacts on participation of local communities and businesses, as the latter do not quite identify their interests with the interests of environmental agencies. However, this clash between the environmental and socio-economic aspects is rooted in a misleading perception. Namely, the environmental protection is an inseparable part of sustainable development, and goes hand in hand – not against –social and economic development. There is a need for focused and interactive policies, with clearly stated focus and objectives.

- *Cooperation with other legal and managerial instruments in place:* There are variety of national and international instruments and initiatives dealing with environmental, social, cultural and other related aspects. Networking and cooperation with those instruments can result in improved efficiency and better allocation of resources. Referring to our two case studies, insufficient relations with relevant activities were emphasised in the Alpine Convention (see Handbook of Carpathian Convention, 2006). Concerning the Carpathian Convention, at this stage, we can only elaborate on intentions for cooperation put forth in the convention's documents. Some of the important instruments and managerial concepts to consider are: Integrated water resource management; Eco-system approach; Environmental impact assessment; Iterative planning; the Rio Declaration on Environment and Development; the Johannesburg Declaration on Sustainable Development; the Millennium Development Goals; the UN General Assembly Resolution on International Year of Mountains 2002, Aarhus Convention and Convention on Biodiversity.

3. Long term oriented implementation

The challenge of implementation of new policies is well known and frequently discussed phenomenon. The most important issue is how are the new policies fitting into the existing legal and political structures and traditions in a specific national context. Sometimes, the major policy reforms require changing in the national legal structure and general public philosophy. The challenges of implementation largely depend on the way in which the policy change occurs (e.g. is the policy internally or externally driven). The main implementation problems are related to organisational issues, lack of policy analysis capacities and difficulty in applying the general and vague policies (Crosby, 1996a and Crosby 1996b). Based on the Alpine and Carpathian actual experience, the following useful messages are identified:

- *Implementing convention through protocols and programmes:* Along the 'legal implementation' – protocol negotiation and translation into national policies, an 'action oriented implementation', through projects at the ground level should be adopted. Considering that the conventions are multilateral and dealing with highly complex issues, it is clear that their implementation requires crossing of functional and policy boundaries of traditional policy making. Concerning action-oriented implementation, the Alpine example of a predominant focus on protocol development and little accent on ground-level actions is seen as a main reason for little implementation on the ground. Focus on implementation activities and concrete projects, is important in communicating the Convention among the citizens and local people and enhancing their participation.

- *Timely setting a permanent or interim secretariat of the convention:* The permanent and interim secretariats of the Alpine and the Carpathian conventions have been highly beneficial for both conventions. In the Alpine case, the lack of stable convention's secretariat in the first 10 years, have had a negative influence on negotiation of the protocols and delay in implementation. On contrary, the Carpathian Convention's interim secretariat (UNEP-ISCC) has had an evident beneficial and leading role. This practice emphasises the importance of setting an institution dealing primarily with the convention's issues.

- *Defining of the implementation tools and strategies:* Both framework conventions adopt a very general approach and have rather loose contents. The lack of implementation strategies can be considered among the main obstacles in both conventions' implementation processes. Certainly both conventions offer numerous legal and practical implementation tools, embedded into the acknowledged conceptual and managerial principles. However, the effectiveness and efficiency of these tools depend on various factors and local conditions. Thus the actors should more effectively use the existing legal instrument for developing appropriate implementation strategies, based on the local conditions.

4. Strengthening institutional structures and ensuring legal provisions

The new governance principles have a role in establishing and promoting of guiding standards (e.g. participation, ethics), but they also provide guidelines in setting up a clear, transparent and flexible institutional framework, which would translate the policy objectives into practice. The institutional framework directly links to all previously mentioned challenges and recommendations. Institutions are a wide concept, broadly defined as the 'rules of the game'. Even though an institutional framework is not standing as a governance principle as such, the discourse on the new governance is closely linked to institutions (e.g. institutional change). The rationale is that new emerging policy issues require reflexive, flexible and transparent institutions able to ensure transparent and effective policy implementation. Institutions should provide the answers of practical policy implementation, by clarifying rights and rules, obligations and requirements, and by ensuring compliance and enforcement. This study

Ramcilovic, S. (2009) does not look specifically into institutional structures and the roles of institutions in the Alpine and the Carpathian Conventions. There is and a significant gap in knowledge and plenty of room for further research concerning the roles of institutions in the Alpine and Carpathian Mountain processes.

Conclusions - Governance entrepreneurs and generative policy communities

This study of two sequential multi-state policy design processes, related to the mountain conservation and management in Europe, provides an important window into understanding the evolution of policy processes over time, as knowledge and practice change and policy actors learn. Recognition of the need for policy processes for bioregions like the Alps emerged long before the institutional capacity and political imagination to undertake such exercises (Brunckhorst, D. 2000). Since the early 1990s, such policy processes have emerged around the world in response to similar stimuli – large scale changes that affected bioregional areas as defined by ecological conditions (Johnson K.N. et al. 1999). Initially, these bioregional processes confounded the normal policy actors because they operated across jurisdictional, administrative and cultural boundaries (Gunderson et al. 1995).

The studied cases have focused on policy processes at the point when an agreement had already emerged (Alpine Convention), was in process of negotiation (Carpathian Convention), or yet is under design (Initiative for Balkan Mountain Convention). In each instance, the policy actors have to create a 'policy space' to allow for policy dialogue to take place. In each case, the parties concerned have to negotiate their roles, responsibilities and basic identities as policy actors. How to interact with one another; how to define mutual interests in a ecologically-identified region; and how to define the desirable future conditions that could be achieved through a multi-State agreement, were all essential elements to be negotiated in these processes. The concept of bioregional responsibility within the context of one nation is complex enough, but between nations with different economic, cultural, and political histories and conditions, the question raises basic issues of the role of the State.

Although this study provides a 'snapshot' view of these policy processes, it is clear that one essential element is the emergence of a *governance entrepreneur* (Shannon, M. 2006). Imagination and the ability to envision something different is the crucial element of transformative policy change. To a large degree, scientists provided the initial imagination by, for instance, defining the Alps as a coherent ecological system across a large landscape spatial and temporal scale. However, scientists were not enough. New policy actors prompted by the concerns of civil society and other non-state actors emerged and generated new ideas drawn from other places, other issues, and other ways of organizing society. It is this generative political process (Shannon, M. 2001; 2003 and 2006) that distinguishes these cases of new modes of governance in this study from those which are formed within the existing institutional, administrative and political conditions.

The challenge of implementation of both the Alpine and the Carpathian Conventions lies in exactly the policy processes that led to their creation – the lack of an institutional and organizational structure. Here again, the role of non-governmental actors and policy entrepreneurs is essential in either putting existing administrative and organizational resources towards new purposes, or in creating new structures to address new needs of the Conventions. Typically, the legislative framework at national or sub-national level fits uneasily with a multi-State set of policy goals and objectives. This is because the framework of legislation is consistent with larger legislative directives – the EU for example – as well as historic political conditions within a State, but not with ecologically defined boundaries of regions like the Alps, the Carpathians or the SEE mountain region. The basic question of what does it mean to

have a consistent policy for an ecological bio-region does not fit easily into administratively organized State-based agencies.

The usefulness of this study is to open these above mentioned and similar questions to critique and scrutiny by utilizing the foundational principles of 'good governance' as the lens for examination. In the case of the Alpine Convention, it is in the implementation process where the slow effect of these principles is evidenced through practice and addressing practical problems. Whereas in the Carpathian Convention, there was a greater degree of pre-policy design in which these principles were explicitly used to design the process as well as the substance of the agreement. What will happen with the Balkan mountain process remains opaque while the policy actors engage in self-identification and generation of a new mode of generative politics.

This study provides a new understanding of how the principles of governance manifest within actual policy processes. The extent to which they are 'accidental' and in what circumstances elsewhere diffuse new ideas, gradually without the express intention of the actors (Shannon 2007) remains of interest and a challenge to policy scientists and practitioners. The extent to which governance principles are becoming a template for governance design is also of interest, as this may signal a shift away from the generative and entrepreneurial nature of the processes as ideas become institutionalized into 'best practices'. Of course, there is a wide range of conditions within this spectrum. The lesson for policy scientists and policy makers is that the context always matters – or 'all politics is local'.

Acknowledgement

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Annex 1: Program of the 10th International Symposium on Legal Aspects of European Forest Sustainable Development of the IUFRO Group 6.13.00 (Sarajevo, Bosnia-Herzegovina, May 7th-9th, 2008)

Tuesday, May 6th 2008

Arrivals of participants
20.00 Welcome cocktail

Wednesday, May 7th 2008

Opening Session:

- 10:00 – 11:00 Official and opening speeches
    - Prof. dr. Faruk Mekić – the Dean of the Faculty of Forestry University of Sarajevo
    - Mr. Safet Kešo – the Minister of Education and Science of Canton Sarajevo
    - Prof. dr. Faruk Čaklovica – the Rector of the University of Sarajevo
    - Mr. Damir Ljubić – the Minister of Agriculture, Water Management and Forestry of the Federation of Bosnia and Herzegovina
    - Prof. dr. Franz Schmithüsen – ETH Zurich
    - Mr. Peter Herbst – the Coordinator of 6.13.00 IUFRO Research Group
- 11:00 – 11:15 Dautbašić, M., Ioras, F. "The impact of establishing High Conservation Value Forests (HCVF) on forest policy in Bosnia and Herzegovina"
- 11:15 – 11:30 Mengele-Stillere, L. "Constitutional right to favorable environment and court practice in Latvia"

11.30 - 12.00 Coffee break

Working Session 1:

- 12:00 – 12:15 Kola, H., Male, J., Lako T., Muharremaj, V. "Analysis of the legal framework on communal forests and pastures in Albania"
- 12:15 – 12:30 Stromquist, L. "Development of community forest management in Armenia"
- 12:30 – 12:45 Susan, C., Kimerdize, M., Herbst, P. "Technical and legal aspects of forest eco-compensation in Georgia"
- 12:45 – 13:00 Delić, S. "Biological reproduction in forestry in Bosnia and Herzegovina – Practical issues of the forest law"
- 13:00 – 13:15 Blagojević, D., Maksimović, M. "Law on forest and ten year management plans for privately owned forest in the Republic Srpska"
- 13:15 – 13:30 Kunovac, S., Avdibegović, M. "Law on hunting and its by Laws in the Federation of Bosnia and Herzegovina – a new approach"
- 13:30 – 13:45 Discussions on Working Session 1.

13:45 - 14:45 Lunch

Working Session 2:

- 14:45 – 15:00 Pružan, E., Fazlić, S., Selimbašić, S., Elezović, N. "Implementation of the Law on forests of the Federation of B&H – Experiences in forest protection through the Forest Guard Service"
- 15:00 – 15:15 Stoyanova, M., Stoyanov, N. "Non-state forests in Bulgaria – Status and problems"
- 15:15 – 15:30 Vuletić, D. Ištok, I., Paladinić, E. "Croatian forest strategy and policy – Process or static document"
- 15:30 – 15:45 Martinić, I., Posavec, S., Šporčić, M. "Time of intensive changes for Croatian forestry"
- 15:45 – 16:00 Karios, N. "Forest law, policies and institutions towards sustainability in Cyprus"
- 16:00 – 16:15 Vašiček, J. "The status of transposition of forestry and nature protection EU Directives and Regulations into Czech Republic legislation"
- 16:15 – 16:30 Discussions on Working Session 2.

16.30 – 17:00 Coffee break

17:00 Discussions and closure of the first day

20.00 Official dinner

Thursday, May 8th 2008

Working Session 3:

- 09:00 – 09:15 Siegel, G. "COST builds Science and Technology networks"
- 09:15 – 09:30 Herbst, P. "Towards a common European infrastructure for spatial information on the environment (INSPIRE)"
- 09:45 – 10:00 Ota, I. "Significance of forest owners' cooperatives in Japan"
- 10:00 – 10:15 Ramadani, N., Kukalaj, Q. "Reform of the Socially owned forestry enterprises in Kosovo"
- 10:15 – 10:30 Cinga, G., Mazeika, J. "Development of Lithuanian forest and environmental policy in the context of EU legislation"
- 10:30 – 10:45 Discussions on Working Session 3.

10.45 - 11.15 Coffee break

Working Session 4:

- 11:15 – 11:30 Lazdinis, I. "Development of Lithuanian state forestry sector 1990 – 2008 – New stage of evolution needed?"
- 11:30 – 11:45 Ramčilović S., Shanon, M. "New principles of environmental governance in policy design and implementation - Case of Alpine and Carpathian Conventions with implications for the SEE Mountain initiative"
- 11:45 – 12:00 Gulca, V. "Collision between regulations in forest laws and hunting legislation in Moldova"
- 12:00 – 12:15 Abrudan, I. "Challenges for the Romanian forestry sector as a consequence of Natura 2000 implementation"

- 12:15 – 12:30 Nonić, D., Marković, J., Milijić, V. Radosavljević, A. "Organisation of the private forest sector in Serbia – Legal and political aspects"
- 12:30 – 12:45 Medarević, M., Petrović, N. "Legal institutional and financial aspect of forest management planning regarding the concept of multiple uses of forests"
- 12:45 – 13:00 Discussions on Working Session 4.

13:00 - 14.00 Lunch

Working Session 5:

- 14:00 – 14:15 Grujičić, I., Jović, D., Nonić, D., Stanišić, M. "Development of protected areas in Serbia – Legal, political and organizational aspects"
- 14:15 – 14:30 Prokić, S. "Development of the Pan-European Ecological Network and regulations in the national legislation"
- 14:30 – 14.45 Danev, G., Krajčič, D. "Adaptation of forestry legislation and management of the EU Nature Conservation Directives as adopted in Slovenia"
- 14:45 – 15:00 Ayanogly, S., Birben, U. "Fundamentals of forest ownership in the period of Ottoman Empire and their effects on present Turkish law"
- 15:00 – 15:15 Discussions on Working Session 5.

15.15 - 15.45 Coffee break

15.45 Discussions and closure of the second day

Friday, May 9th 2008

10:00 Field trip – Protected landscape Bijambare
20.00 Farewell party

Saturday/Sunday, May 10th/11th 2008

Departures of participants

Annex 2: List of Participants attending the 10th International Symposium on Legal Aspects of European Forest Sustainable Development of the IUFRO Group 6.13.00 (Sarajevo, Bosnia-Herzegovina, May 7th-9th, 2008)

A. Participants with paper presentations or regular members of IUFRO 6.13.

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B. Participants from B-H forestry sector and without paper presentations

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