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## OPTIMIZATION PROBLEMS AND SOLUTIONS OF FOREST RESOURCES MANAGEMENT IN MOLDOVA

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**Key words:** forest, management, functions, efficiency.

**Abstract:** The main problems of forest management in Moldova are: consumerist approach of the forest fund; the superficial management of indirect economic functions and ecological functions; illegal logging, overgrazing, massive pollution with domestic waste; the closed character of decision making in the forestry sector; the limitation of population's access to forest lease land and the abuses in this field; cumulating and duplication of management functions; the inefficient realization of evaluation and integrated monitoring of forest fund, especially in the communal forests.

### Introduction

Exploitation of wood products was always one of the basic traditional occupations of indigenous people, who inhabited predominantly to the peaks and slopes of the hills, including for the benefit of the products and services of the forest complex. Manufacturing value of wood between the Prut and Dniester was highly appreciated since Greek merchants, particularly for shipbuilding and manufacturing various quality tools. Special qualities of local wood are mentioned by Dimitrie Cantemir in the "Descriptio Moldavie", such as in the reports of Russian imperial authorities in the nineteenth century. Despite these claims, the local importance of wood was much higher. For most people the forests were used primarily as an energy source. In the villages of yeomen with massive compact areas valuable species, especially oak, woodworking crafts were well developed, some of which are renovated today.

Massive reduction of forest areas during the nineteenth century and the first half of the twentieth century were caused by increasing population and demand for firewood. In the interwar period, a large proportion of the consumption of urban centers and Southern Bessarabia was assured by transportation, by rail, of wood

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from the Pre-Carpathians areas rich with forest resources. In the Soviet period has passed massively to alternative energy sources and building materials and the consumption of work wood and firewood was assured of its bringing from other regions of the USSR. In the 90s, massive impoverishment of the population and multiple increases of import prices for coal, gas and wood was conditioned intensified exploitation of local wood and alarming increase of illegal logging, especially in the communal forests and forest protection belts.

### **1. Consumerist approach of the forest fund.**

Overall, the management of forest resources in Moldova bears the imprint of the Soviet period, was strongly influenced by difficulties of the long period of transition. The current mechanism for management of the national forest fund had suffered insignificant changes. Despite legal provisions, which are declared priority of social utility and protection functions of national forests, management and exploitation of national forest fund is based on clearly the consumerist approach products and services generated by forest ecosystems. The majority of forest management actions are designed to achieve direct economic functions: reproduction and harvest of timber, hunting objects and accessories products that can be easily marketed. Delivery of wood products and accessories generates over 90% of revenues to forestry enterprises. Status of special regime of exploitation and protection of the national forest fund and the need for ecological reconstruction works are sometimes a front for hiding the primary interest of the manager of state forest fund – simultaneously obtaining of substantial budgetary allocations and maximum income (declared and undeclared) from the exploitation of wood products. To these products is a growing demand from the rural population, for which wood is the main energy source. Thus, it is found very sharp contradiction between the needs and the main directions of use of woody mass and the priority ecological destination of forests. At the same time, the indirect use value and the conservation value of forest is neglected.

The necessary work of rebuilding, refurbishing and expansion of forests are provided only at the rate of 65-70% [2, p. 19], and the amounts of tax exemptions for carrying out such work and of the revenue from tax on standing timber are very modest (about 500 thousands lei MDA). In the case of the reduction of budgetary allocations this is reflected directly upon the reduction of the volume and quality of the works mentioned. Despite these problems, is observed the expansion of evaluation and exploitation fields of forest ecosystem services. The annual revenues of payments for rental of state forest fund for recreational purposes is approximately 11.4 million lei MDA and of commercialization of carbon storing's (reducing emissions) in community forests - 9 million lei MDA. Significant added value can generated to achievement of the National Programme for the restoration

of degraded lands and improve of soil fertility, given the fact that the soils are the most precious natural resources of the Republic, subject to one major destructive impact. Just because to erosion is lost annually 26 million tons of soil. Area of eroded land increases by 7-8 thousand ha and annual losses estimated are about 3 billion lei. Agro-forestry measures can reduce induced losses by soil erosion by 8% or 7.8 USD per ha of agricultural land. Implementation of the project "The conservation of soils in Moldova" will absorb 20 million USD (for the first 20 years), and the surface of the forest fund will expand by 20 thousand hectares, which will generate external benefits to agriculture and other related activities. Without neglecting the importance of the main and accessory forest products, which have direct use value, should be given priority to those categories of use that have indirect use value and conservation value [3, p. 42]. If wood and accessories products, we can replace it with others with similar usage or import at a reasonable price from other countries with rich forest resources, then the indirect economic or the ecological services we cannot substitute or import, because they are generated only in the presence of forested areas, especially in the proximity of settlements, agricultural land, transport highway, tourist and recreational infrastructure.

## **2. The phenomenon of illegal logging.**

After the collapse of the USSR, the deep social and economic crisis accompanied by multiple prices increased of imported energy resources has generated massive impoverishment of the population, especially in rural areas, increasing the demand of local wood products and the anthropogenic pressure on forest ecosystems. Due to maintaining guard services of state forest fund, illegal loggings have not significantly affected the reproductive basis of national forest fund. However, the communal forests, green spaces, forest belts for protection of water objects and agriculture land, which are managed by municipalities and designed to achieve ecological and social functions do not have Guard services, do not dispose by cadastral evaluation and by necessary management system and it are in a grave state. The majority of forest belts protection of agricultural fields. Although their communal forests 2/3 of the volume of illegal logging, such data are not reflected in the actions brought for the recovery of damages and fines. With regard to grazing or mowing, the situation is very critical in most communal forests.

According to Table 1, in recent years the volume of illegal logging in state forest fund is about 4000 m<sup>3</sup>, or approximately 1/3 of the total volume of illegal logging (12 000 m<sup>3</sup>). The increase of cuts is explained by increasing the detection of these offenses in the state forest fund and implementation of the new Code Offences. Moreover, official data do not sufficiently reflect reality. Much of illegal logging are not registered or concealed by forestry staff. Out of over 650 thousand

m<sup>3</sup> of wood used comes from unidentified sources a great part is extracted from the forest fund. Thus, an amount that exceeds the official annual extraction of wood (450 000 m<sup>3</sup>) is not declared and official revenue missed of forestry enterprises would exceed 200 million lei MDA. Moreover, despite the optimistic official demarches of the Moldsilva, the actual extraction of wood mass is to limit of the capacity of forest regeneration, which requires taking of operative and effective measures in this regard [6, p. 36].

Table 1. The caused damage to state forest fund

The name of indicators	The unit of measure	Years						
		2006	2007	2008	2009	2010	2011	2012
<b>1. The illegal logging</b>								
The total volume of illegal logging	thousands m <sup>3</sup>	2,3	1,7	1,7	2,2	3,9	4,8	4,2
The volume of illegal logging to 1000 ha surface covered with forests	m <sup>3</sup> /1000 ha	6,5	4,9	4,9	6,1	12,7	16,0	13,9
The detection of illegal logging	%	45,5	42	50,4	49,6	57	74	87
The sum of caused damage	thousands lei	401	281	271	377	675	821	675
<b>2. Unauthorized grazing</b>								
The sum of caused damage	thousands lei	590			214	147	119	272
The sum of caused damage	thousands lei	164	136	159	167	289	1265	230

Source: [www.moldsilva.gov.md/Activitati/Paza-fondului-forestier](http://www.moldsilva.gov.md/Activitati/Paza-fondului-forestier)

### 3. Application of administrative sanctions and actions for recovery of damages

Financial shortages and institutional disorder in rural areas makes the illicit exploitation of forest and green areas. More severely are affected ecotourism and recreational objectives outside of the State Forest Fund. Moreover, multiple functions of forests, their deficit and alarming phenomenon of illegal logging requires the adequate application of administrative sanctions and actions to recover damages caused by forest resources.

In the new Code of Administrative Offences (in force from 31 May 2009) were introduced new sanctions for breaching health's rules (art. 136) and protected rules of forests, green spaces and protected areas (and 141.2), for circulation and parking of vehicles on forest land, green spaces and in forbidden places (art. 135), for injury or unauthorized cutting of trees and shrubs in the green spaces (art. 122.2) (table 2). Was increased more than 10 times the amount of fines for: causing fires (art. 137); waste disposal in forests, green spaces and protected areas (art.

141.3); injury or unauthorized cutting of plants from the green spaces (art. 182 and 122.2); hunting in forbidden areas and prohibited seasons (art. 128.2); violating the rules of use and protected of the animal kingdom in the natural protected areas (art. 139); deliberate destruction or damage of dens, mounds and nests of birds in

Table 2. The amount of fines for offenses committed in the forest fund

	Art. Nr of OC	The amounts of fines, in conventional units	
		fizical persons	legal persons
Injury or unauthorized cutting of trees and shrubs in the states forest fund, inclusive by forestry staff or with their permission	122.1- 122.3	40-50	400-500 50-100
Injury or unauthorized cutting of plant in the green spaces and failure to take measures established to protect green spaces;	122.2, 182	40-50 50-100	400-500
Authorization by the forest authorities harvested mass wood with violation of the regulatory provisions;	122.4	-	100-200
Degradation of pastures and hayfields, drainage systems and roads on the land of the forest fund;	126	10-20	100-200
Illegal mowing and grazing in the forest lands and green spaces	127.1	5-10	-
Unauthorized harvesting wild fruits and berries, nuts, fungi, medicinal plants in areas where this is prohibited;	127.2	5-10	100-200
Intentional damage to panels, barriers, indicators of forest arrangement, and the fencing surrounding of restricted in the recreational places;	132	-	30-50
Unauthorized use of state forest land and of gren spaces, for deforestation, construction of administrative buildings and warehouses;	134	30-40	300-400
Circulation and parking of vehicles on forest land, green spaces and in forbidden places;	135	5-10	5-10
Violation of sanitary regulations in forests, green areas and reserves;	136	10-20	10-20
Violating the rules of fire security in forests, green areas and nature reserves;	137.1	10-20	10-20
Arson of forests, green areas and nature reserves;	137.2	100-200	100-200
Collection and destruction of plants and animals listed in the Red Book of the Republic of Moldova and the CITES Appendices;	140.1	50-100	50-100
Violating of protection rules of objects and complexes in the state natural protected areas;	141.1	30-50	200-300
Violations of use and protection rules of soils, water resources, flora and fauna in the state natural protected areas;	141.2	40-50	200-300
Violations of the prohibition of placement, processing and discharge rules of industrial and householde waste;	141.3	40-50	200-300
Infringement of procedures for exploitation fund, harvesting, transporting and exporting wood and wood products;	142.1	10-30	100-300
Circulation of wood without legal acts of provenance;	142.2	10-30	200-400
Unauthorized hunting and violation of the laws on the use and protection of the hunting fund;	128.1	20-50	200-400
Hunting in forbidden areas and prohibited seasons;	128.2	50-100	200-400
Deliberate destruction or damage of dens, mounds and nests of birds in the forest found;	129	20-50	20-50
Violating the rules of use and protected of the animal kingdom in the natural protected areas;	139	40-50	40-50

the forest fund ( art. 129). An insignificant increase (2-5 times) of fines amount is found for: injury and illegal cutting of trees and shrubs in the state forest fund (art. 122.1); illegal mowing and grazing in the forest lands and green spaces (art. 127.1); collection and destruction of plants and animals listed in the Red Book (art. 140.1).

For most offenses are provided for 20-60 hours of unpaid community work, but rarely apply. Also, in the case of payment for a period of 72 hours from the time of initiating the protocol shall be paid only 50% of the amount of the fine [4]. This stipulation significantly increased collected fines. We also consider the need to cancel this provision for environmental offenses.

The majority of fines are applied for injury or unauthorized cutting of trees and shrubs in the states forest fund, Infringement of procedures for exploitation fund, harvesting, transporting and exporting of wood, for violating of hunting rules (table 3). Maximum number of fines, applied for these offenses, is found in districts with a higher degree of forestations or where are located the forest headquarters households: Glodeni, Soroca, Orhei, Călărași, Hâncești, Criuleni, Ungheni, Căușeni. In the last years, a relatively large number of fines are applied for violating sanitary rules in the forests, green spaces and protected areas (art. 136), for unauthorized circulation and parking of vehicles in this spaces (art. 135) and for illegal cutting of trees and shrubs by forestry staff or with their permission (art. 122.3) and for illegal mowing and grazing in the forest lands and green spaces (art. 127). However, despite the fact that such offences are being committed very often, especially in recreational and ecotourism attractions nearby settlements, these violations are adequate detected and adequate sanctioned only in a few districts [5], as Ocnița, Dondușeni, Glodeni, Rezina, Telenești, Nisporeni, Căușeni (art. 136), Ungheni and Strășeni (art. 122.3), în the Bălți and Chișinău municipalities (art. 135). Also, the amount of fines for violating sanitary rules in the forested, green areas and nature reserves (art. 136) is two times lower than in the localities (art. 181) – 200-400 lei against 400-800 lei.

There is a very low number of fines applied for: capture and destruction of plants and animals listed in the Red Book (art. 140.1); violating the rules of use and protected of the animal kingdom in the natural protected areas (art. 139); deliberate destruction or damage of dens, mounds and nests of birds in the forest fund ( art. 129); destroying young stands (art. 123); degradation of pastures and hayfields (art. 126); injury or unauthorized cutting of plants from the green spaces (art. 182); unauthorized use of state forest land (art. 134). However, such violations are committed more frequently and the amount of fines is significantly lower than the cost of restoration. Moreover, for waste disposal in forests, green spaces and protected areas (art. 141.3) were not applied fines. A critical situation is found in applying the fines for breach of the protection regime in the perimeter of the state protected natural areas. For example, in 2012, for violating of protection rules of

objects and complexes in the state natural protected areas (art. 141. 1), have been applied only 33 fines and all in Edineț district.

Table 3. Fines for violation of forestry legislation in Moldova

The number of articles of the Offences Code	The number of applied fines				The sum of applied fines, in thousands lei				The amount of collected fines, in thousands lei			
	2009	2010	2011	2012	2009	2010	2011	2012	2009	2010	2011	2012
122.1	156	634	852	939	124	537	774	795	65,9	295	379	378
122.2	9	44	94	51	8,4	36,8	81,4	45,8	3,8	18,6	36,2	20,9
122.3	5	20	141	15	5,7	27,6	152	22,7	2,7	11,2	74,6	10,4
122.4	3	7	24	6	10,3	23,6	67,8	13,4	4,4	2,5	22,2	6,7
126	1	8	7	11	1	4,6	2,8	2,8	0	1,8	1,4	0,9
127.1	67	143	141	198	9,1	19,4	20,7	29,2	6,1	10,6	11,3	19,2
127.2	1	4	1	9	1100	400	100	2500	700	200	50	1250
132	2	8	17	10	0,4	1,5	2,9	2,4	0,2	0,9	1,45	1,2
135	11	125	157	92	1,3	13,3	20,6	11	0,65	6,9	10,0	6,1
136	13	176	282	323	2,6	40,7	61,5	67,8	1,4	21,3	28,3	34,1
137.1	14	19	38	42	2,8	4,1	8,2	10,6	1,7	1,7	3,9	5,4
137.2	1	0	4	4	4	0	8	9,2	0	0	2	3,1
140.1	1	2	10	5	1	2	10	5	0,5	0	1	1,5
141.1	0	3	18	33	0	2,2	12,2	29,8	0	1,1	6,4	15,3
141.2	0	0	5	3	0	0	4,4	3	0	0	2,2	1,5
141.3	0	0	0	0	0	0	0	0	0	0	0	0
142.1	30	62	106	127	7,8	26,1	35,3	48,6	4,1	15,7	19,1	22,4
142.2	11	49	88	90	3,7	20	25,1	21,4	2	10,7	13,2	10,6
182	2	20	23	20	1	24	25,6	25,1	2	10	12,8	12
<b>Flora</b>	<b>479</b>	<b>1657</b>	<b>2120</b>	<b>2387</b>	<b>216</b>	<b>843</b>	<b>1341</b>	<b>1246</b>	<b>110</b>	<b>436</b>	<b>644</b>	<b>597</b>
128.1	41	38	56	88	28	22,4	38,3	54,8	13,9	13,2	19,0	27,2
128.2	32	34	71	87	36,8	38,9	91,6	110	19,8	24,0	47	50
129	0	0	1	1	0	0	0,4	0,4	0	0	0,2	0,2
<b>139</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0,8</b>	<b>0</b>	<b>0,5</b>	<b>0</b>	<b>0,4</b>	<b>0</b>
<b>fauna</b>	<b>626</b>	<b>1525</b>	<b>1700</b>	<b>1785</b>	<b>231</b>	<b>481</b>	<b>540</b>	<b>505</b>	<b>105</b>	<b>192</b>	<b>240</b>	<b>246</b>
<b>Total</b>	<b>1105</b>	<b>3183</b>	<b>3820</b>	<b>4172</b>	<b>447</b>	<b>1323</b>	<b>1882</b>	<b>1750</b>	<b>215</b>	<b>628</b>	<b>884</b>	<b>843</b>

According to the Annexes Forest Code, the amount of actual damage caused to vegetal resources reflect direct revenues missed by forestry enterprises by removing the wood from the production cycle. The amount of established damage differs depending by volume of timber, by size of felled trees, number of specimens collected or damages, by industrial, environmental and scientific value

of species, by injury extending area, forest functional class of perimeter and the degree of species rarity and ecosystems affected. The compensation charges for violation of the Rules for the release of wood on the forestry beneficiaries varies depending on the volume of logs of the affected trees, the number of violations and the extent of damage restoration. The amount of forests damage should include factors such as the degree of actual clearing planning and its difference with respect to the area normative, emissions volume, ecosystems restoration costs and anti-erosion works costs [1, p. 148].

Most fines and actions to recover damages for illegal cuttings are applied to lands of forest state fund, but most of these offenses are committed in communal forests. Despite the shortcomings mentioned, actions brought to wrongdoers for compensation of the injury caused to plant resources are more frequent and their amount is much greater. Also, compared to other categories of natural resources, illicit action on biological resources is penalized, usually, not just as a warning or fine, but by actions for damages recovering. Although there is some disagreement between environmental and forestry authorities, coordinate implementation of economic sanctions and other common problems solving, are made at a higher level than the subdivisions of government responsible for managing the impact on air, water or soil.

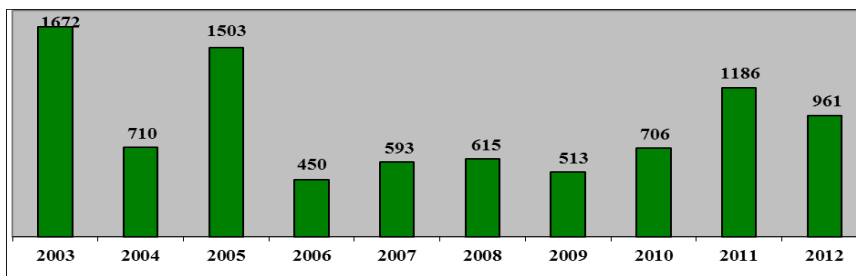


Figure 1. The amount of damages actions for vegetal kingdom

According to the State Environmental Yearbooks, the calculated amount of actions for compensation damage to the animal world was in the 2007-2009 years 350 thousands lei, while in 2010-2012 – only 46 thousands lei. We believe that these data are incomplete because the number of fines imposed for infringement of the fauna legislation increased approximately three times (from 626 in 2009 to 1758 in 2012) and the amounts of intended actions were to grow to over 1 million lei. Similar fines imposed, by an absolute majority of the actions for damage caused to forest fund is brought in more forested regions. Episodic are initiated actions for recover the damages caused by illegal hunting. Very rarely are brought the actions for damage caused for cruelty to animals, including from birds, reptiles



and amphibians, to rare species. This situation is due, especially to reduced capacity of local environmental authorities needed to full detect of these offences and for adequate evaluation of the derived damage. Thus, despite an adequate methodology for evaluation damage to the animal kingdom, their practical application is very superficial. Therefore, for adequate exercise of environmental evaluation and control functions is necessary to ensure sufficient human, technical and financial resources. It is also necessary to stimulate and enhance collaboration of ecological authorities with forest authorities, with science centers, hunting associations as well as local authorities and population. It is welcome the application of financial incentives to people who help detecting offences and of full and timely evaluation of these damages.

#### **4. Problems of forest fund rent:**

Methodology to estimate the value of forest land transmitted on lease for hunting purposes and recreation is focused on direct missed incomes of forestry enterprises and on expenses to ensure reproduction of wood and hunting resources, and accessories products. Thus, this methodology is based on estimating the individual benefits and costs of forest-hunting works. We believe that this method of evaluation has a wrong approach because forest areas are exclusively public goods. In addition, the methodology adopted refers to the assessment of income and losses for a short period, of only one year, is not focused on the reproductive rate of the main tree species and wildlife species.

The methodology of calculating the lease payments for state forests for recreational purposes does not take into account the position of the land towards large urban centers, especially to Chisinau, towards driveways and their status, the development level of infrastructure [3, p. 51]. Moreover, much of the forest land tenants for recreation purposes only aim to obtain direct profits and are awaiting the real estate boom in these lands. Often tenants' contribution is limited only to leased perimeter, construction of several recreational objectives and their transformation into holiday homes for tenants, their close people, for political and economic elite etc. Thus significantly limited access of the population, including local people, which should be the main beneficiaries of forest areas. Even and the few existing tourist complexes based on receiving a small flow of visitors, especially with high-incomes. Therefore, most of the potential tourists cannot benefit from the services of these resort complexes, preferring attractive unspoiled areas, often unsanitary. Forestry and environmental authorities are limited more to episodic detection and sanction of the offenders, and sanitation works are ignored (planning and garbage disposal, picnic places). In addition, the existing mechanism to lease the forest fund land only based on a Decision of the Government has not a legal basis.

During the years 2008-2012 were leased 750 ha of land into recreational purposes, with a summary area by 2338 ha or 2.5% of the total recreational forest area by 94 000 ha. Overall, there is a very small percentage of leased land for recreation purposes and great potential by its growth. From the 750 land only about 30 are operational in accordance with the establishment requirements. At the same time, by an absolute majority of the lands leased for recreational use are located in the proximity of the Chisinau municipality and nearby access roads from the capital. Only in Chisinau and in forestry departments from the districts Strășeni Ialoveni Criuleni and Orhei, which are located at a distance by 50 km from the capital were allocated 634 plots (85%) with an area by 2172 ha (93%). This demonstrates about overconcentration of respective lands in the proximity capital, increased demand for them and a higher rent of the respective area, which is not reflected in the calculation methodology of payment for lease of these land, but will appear as individual benefits (of leaseholders) or illicit income of people who coordinate the lease process of respective land. Moreover, it generates a very high recreational pressing in proximity to the capital and is limited free access for citizens to the main and secondary products and services of the forest, especially for the local population very dependent on them. As an example in this sense we serve and massive grievances of the local population in the vicinity of leased forest areas.

Also, there is insufficient scientific basis on standards and criteria for the award of forest land for tourism purposes and measures necessary for supervision and reducing the recreational pressure. There is not a recreational zoning of the forest fund, according to the needs of major cities and recreational capacities of existing forests in their proximity.

##### **5. The problems of optimization of the management functions of the forest fund**

Cumulating of functions is one of the main impediments to the difficult process of forest management optimizing. Simultaneous pursuit of exploitation and control functions by the Agency Mold Silva substantially limit the public control on the process of decision making in the forestry and its efficiency, stimulates corruption and illicit income, concealing of information about real exploitation work of forests and its status. Management functions and financial autonomy statute applied to forestry enterprises bring to the foreground the economic and commercial interests of their activity, which reduces the importance and effectiveness of ensuring the environmental and social functions of national forest fund, including the perimeter of protected areas covered with forest vegetation. In the context of decentralization of management functions is expected transmission of control functions to the Ecological Inspectorate (Environmental Guard) and of

exploitation functions - to private economic agents. Delimitation and transmission of management functions to local authorities, environmental authorities and to the private sector do not have to do in detrimental to the integrated management of the forestry sector, reduction in the effectiveness of the exercise of public functions of planning, coordination and control of the recovery and protection of forest ecosystems.

Another problem is the duplication of management functions by the central forest authority (Moldsilva Agency) and the central environmental authority (Ministry of Environment), including the evaluation, monitoring and control of the forest fund [3, p. 62-68]. This situation, especially the doubling control feed conflict of interest between these two public authorities and increases budgetary spending in this area. Conflict situation is specific, especially in scientific reserves. The forestry authorities ignores the status of scientific reserves established by the Law on Natural Areas Fund Protected by State. The forestry enterprises from scientific reserves exercising functions and exploitation management of these objectives similar with the other forest areas managed by the Moldsilva having as highest interest accumulation and increasing incomes from harvesting wood and accessories forest products. At the same time, missing the mechanism of support and funding of necessary activities in the protected natural areas.

Forest monitoring is carried out insufficiently and includes only representative areas of forest perimeters with high environmental and forest-hunting value. At low levels are carried out research on the optimal degree of forestation of the country, including in the territorial-administrative units and phytogeographical zones. It is necessary to carry out the integrated monitoring of forests and lands covered with forest vegetation managed by the local authorities and other holders, developing of the national system of public information on the state of forests and his participation in the decision-making process.

State Forest Cadaster is still in the long elaborating stage. Some functions of Forest Cadaster are carried out by the Forest Arrangement, including spatial and functional delimitation on forest household and districts, established volume of timber harvested and the rate of regeneration in these sectors, number of trees by representative species, and their phytosanitary status. Also, were adopted Regulations of Animal and Vegetable Regnum Cadasters and the models for their completion. Accumulated materials are systematized and processed by authorized institutes of the Academy of Sciences. It is not clear the subordination and collaboration modality of the mentioned institutes and Ministry of Environment, with holders of forest land to achieve the set objectives. These works, must be included in the strategic and current plans of the Ministry of Environment, Academy of Sciences, forest authorities, university research centers, assured with adequate human, financial and logistical support, so as to be reflected in the

decision-making process in this field. In addition, complete information stipulated in these regulations, it is absolutely necessary for forest plantations outside of the State Forest Fund, which ensures the functional ecological connections between compact forest areas managed by the forest authorities.

In most cases, administration and exploitation of communal forests managed by local public authorities is not based on the forest cadastral evaluation. Forest arrangement works are carried out chaotically without an appropriate forest technology. However, Ecological Inspectorate authorizes annual fellings in those forests on appreciable surfaces and in big volume. Also, guarding the communal forests and forest belts for the protection of agricultural land is only 33 foresters and real necessities are over 300 foresters. For this reason, the mentioned vegetation is subject to alarming illegal logging, abusive grazing, to pollution with household waste and to massive recreational pressure. In addition the majority communal forests occupy heavily fragmented areas, predominantly composed of acacia plantations.

#### **6. The problems of extending of national forest fund**

The identification and allocation of degraded land for afforestation has a chaotic character and be conducted with great delays. This fact has negative impact on the rhythms and quality of afforestation works and on expected protective effect. The extension of forest areas have a populist character and, in reality, do not pursue to create the functional ecological network. Although the surface of ravines, landslides, land heavily eroded presents a real ecological and economic danger, most of the local councils are not sufficiently involved in the procurement process for the afforestation of degraded lands. Also very slow is conducted the process of evaluation cadastral of land, which had already attributed for afforestation and included in the annual action plans derived from the National Programme for the restoration of degraded land. Role by the main financial source of Fund of the State Agency for Land Relations and Cadaster considerably delayed carrying out the Program within the terms and volumes determined. In the recent years, because multiple reduction of budget allocations, forestry enterprises have similarly reduced the volume of seedlings and works for these purposes, which had a direct impact on slowing rates of extension of the forests. Therefore, expansion of national forest fund with about 16 000 ha per year (130 000 ha by 2020) is impossible.

### **Concluzions and recomandetaions:**

1. Most of the actions of exploitation and managing of forest fund is focused to forest products that have direct economic value and generate profits to forestry enterprises. This finding is also valid in case of application of fines and initiating the actions for damage caused forest resources.

2. The communal forests, forest belts for protection of agriculture land, which are managed by public local authorities and farms do not have Guard services, do not dispose by cadastral evaluation, not operated under Forest Arrangements and it are in a grave state.

3. The priority protection functions cannot be performed adequately by current forest plantations. It is necessary to increase their share to over 15% (over 100 000 ha) of the land fund surface and to eliminate the mentioned constraints of enlargement of the forest fund from account of degraded lands. It is necessary cconsequent measures are needed to improve the forest areas, especially in the communal forests, creating forest functional components of the National Ecological Network.

4. It attests extending of application area and multiple increasing of fines for forest offenses. Is it really necessary to apply frequent application of unpaid work in the benefit of community for offences committed in green spaces and communal forests.

5. The methodology of calculating the lease payments of state forests land for recreational purposes does not take into account the position of the land towards large urban centers and driveways and the absolute majority of the rent lands are not functional. There is not a recreational zoning of the forest fund, according to the needs of major cities and recreational capacity of the existing forests.

6. Cumulating and duplication of management functions, excessive centralization and reduced transparency of the decision-making process are the main impediments to reform forest management. It is necessary to delimit clearly the management functions exercised by the forestry and environmental authorities, their active collaboration with local public authorities, scientific centers, NGOs, etc.

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