Problems related with increase of forests lands in Ukraine and on the globe are in focus of many domestic scientists, power and business entities, industrialists and others. Considerable interest to forestry products is shown by power bodies, local self-government bodies, private businesses. One of the most significant factors affecting rehabilitation and preservation of forest resources is the model of forestry sector operation in Ukraine as a whole and the Carpathian macro-region in particular. It refers to the principles of rehabilitation process, outlined in the period of the command-administrative model of management, but embedded in the current market mechanism. However, the studies confirm that market and command-administrative models of management are incompatible.

It is demonstrated that highly effective use, rehabilitation, preservation and protection of forest resources is conditional on the involvement of government and local territorial communities. First and foremost it refers to formulating new operative principles for providing financial assistance, subsidies to forestry enterprises, private owners. Unprofitability of forestry enterprises and organizations shows the need in constructing and implementing a new model for organization and management in this important economic sector. It is demonstrated that such model cannot be built without relevant and reliable information base, which requires improvements in the existing system of collection, processing and analysis of statistical data. Chronic unprofitability in the domestic forestry sector in parallel with the increasing scales of forest felling, growing timber sales and enrichment of selected persons associated with power offices and local power bodies is a sign of the existence of shadow and corrupted entities in the domestic forestry sector. This requires not only revision of the current forestry policy, but setting a new one, along with adapting global practices in organizing preservation, use, rehabilitation and protection of forestry resources, of which the most important is land. First and foremost, priorities of organization and management in the forestry sector need to be changed. An important step towards optimization of the rehabilitation process of forest land plots in the studied macro-region should be restructuring, with returning private property to former owners. This change has to ensure the profitability of forestry enterprises, diversification of ownership forms, preservation and protection of forest resources for current and future generations.

Key words: forestry, felling trees, timber sales, functioning model, statistical reporting, Carpathian macro-region, financial assistance.

Introduction. The importance of significance of forests in the human life cannot be overestimated. Forestry resources is a foremost component of the resource potential by which economic, ecological, social and other kinds of goods are generated. Yet, the analysis shows that the current foundations of the forestry policy in Ukraine fail to ensure proper preservation and rehabilitation of forestry resources. Throughout the years of independence, in Ukraine as a whole and the Carpathian macro-region in particular there has been massive and predatory logging of forests, with all the timber exported, and all the plant and animal species destructed. The forestry sector still continues to operate on the principles laid in times of the command and administrative system.

Literature review. Problems of rehabilitation, preservation and increase of forest lands in Ukraine have been in focus of many domestic and foreign scientists and an object of interest from government officials and businesses, practical specialists and others. Deep concern with forest lands is demonstrated by organization of many scientific conferences, a large stock of publications (books and articles), defended doctor and candidate theses etc.

Forestry products have been subject of close attention from public administration bodies, private entities, and local self-government bodies. A reason for this concern is that the forest area in Ukraine has...
been declining from year to year, with many plant and animal species extinguishing. However, in many European countries, in particular ones with which Ukraine has trans-border cooperation, forest areas tend to increase. The most rapid increase of forest areas is reported for the territories that were not forest-rich historically. Thus, while in 1990 forests accounted for 28% of the territory in Spain, now their share is 37%. In Greece and Italy the forest areas growth in this period varied from 26% to 32%. This growth was contributed by the two factors: (i) abandoning of agricultural areas, especially on highlands; (ii) government policies and subsidies [1].

Scientists say that inadequate preservation and rehabilitation of forest lands can be largely explained by current methods of management. The management system created in the period of administrative regulation shows a high inertia: in spite of radical economic reforms in the latest decades, the forestry sector performance has not undergone a deep change. It is, therefore, high time for creating and gradual implementing the market-based model for management of forestry potential by its spatial organization and bringing it in line with new requirements of economic reforms and democratization of society. These problems can be solved by dividing the functions of public administration and economic management of forests and forestry sector [2, p. 64].

According to some of the domestic scientists, the proper and innovative use of forestry resources in compliance with social, economic and environmental requirements in Ukraine as whole and Carpathian macro-region in particular is hampered by the government monopoly on forestry lands. The Forestry Code of Ukraine states that all the forests in Ukraine are objects of property right of the Ukrainian people and can be in public, communal and private ownership [13, article 7]. But local practices show clear dominance of the centralized public management in the forestry sector. The lands have not been redistributed by property form, and the conditions for diversification of land management forms in the forestry sector have not been created: basically, 100% of lands are in public property, of which only 0.11% transferred to temporary use. Neither of the approved legal acts concerned with forestry sector activities is concerned with improvement of indicators of rational use and protection of lands [3, p. 10], compliance with the needs for protection of forest resources or plant and animal species, or use of public and non-public products. Instead of this, forestry lands that are a primary substance still remain to be out of focus of the offices whose duty is to preserve, improve and protect the lands of the domestic forestry sector.

The emphasis needs to be made on the involvement of offices of the State Statistics Service of Ukraine in this process. The current legal relations between owners and users of lands, forestry enterprises, on the one hand, and the statistical office, on the other hand, are confined to statistical reporting. But the latter is not a subject to proper review or control. In other words, the processes involved in preservation and rehabilitation of forestry resources in Ukraine as a whole and the Carpathian region in particular have been out of sight of the State Statistics Service of Ukraine.

According to scientists, preservation, protection and rehabilitation of forestry resources in Ukrainian territories at micro-, meso- and macrolevel needs improvements in land ownership relations. The ownership needs to be considered as the fundament for social and economic relations between individuals, determining the character of these relations and the investors’ behavior. In view of, the institute of owners has the role of a driver of the social and economic development [4, p. 176]. The proper settlement of ownership relations, diversification of ownership forms, organic mix of public, private and shared public-private ownership, implementation of concessions as a form of attracting foreign investment are the factors supposed to not only ensure rational and effective rehabilitation of forestry lands, but to lay the foundations for the successful development of forestry lands in Ukraine. The rehabilitation process in forestry lands will ensure the optimal combination of use, preservation and renovation of forestry resources.

Unfortunately, the property on forestry lands in the domestic forestry sector has not been clearly documented, which is confirmed by massive logging, thefts of timber, depopulation processes in fauna and flora, drying of water pools, forests’ deceases and extinction etc. The abovementioned problems in the forestry sector have been overlooked by the respective power offices and various level officials in Ukraine throughout the independence years.

The articles’ objective is to investigate and analyze the main reasons hampering to properly organize rehabilitation of forestry resources, including rehabilitation and preservation of forests, plant and animal populations, improvement of the environmental performance, and to propose the author’s own approaches to solving the problem.

Results. The effective operation of the forestry sector in Ukraine on the whole and the Carpathian macro-region in particular, now and in future, requires elaboration of a strategy for rehabilitation and operation of the forestry sector. Retrospective studies show that the economic model of management and regulation, based on the principles of socialist mode of management, has been actually kept intact in this important sector of the national economy. It refers to the extra centralized and directive economic model of management, embodied in the government monopoly on forest management in Ukraine. Some scientists and public officials still continue to believe that this model
is the most democratic and socially fair. It is known that the directive management model was created as part of the communist concept, which is now legally fixed in the Constitution of Ukraine by the declaration: all the resource potential in the country is an object of property right of the Ukrainian people [14, article 13]. At the same time, practices and experiences of the agrarian land reform in EU countries and Ukraine show that the public property is a disembodied and soviet-like propagandizing trick. R. Coase, a prominent scientist, says that the economists tend to overrate the advantages of regulation, which, instead, should be limited [5, p. 112].

Limitations on interferences of central and local power bodies in the forestry sector operation in Ukraine are also proposed by a number of domestic scientists. It cannot be said that only the public property on nature resources is effective, because public officials do not always take optimal decisions on their use. Besides that, the funds required for effective operation involving use, protection, rehabilitation and reproduction of nature resources cannot be always allocated from the central budget. If this happens, the government should better transfer nature resources to open-ended lease or private property [6, p. 63].

Results of the study show that forestry lands in the Carpathian macro-region had already been in public and private property. It refers to the times when the territories of Zakarpattia, Ivano-Frankivsk, Lviv and Chernivtsi regions were incorporated in Austrian-Hungarian Empire, Poland, Romania, Czech and others. In that time large forest areas were owned by the state and by individuals. The private ownership of forest lands was subject to the legal framework regulating the use of forest resources (wood, plant and animal species, non-wood resources) and obliging the users to comply with the provisions on obligatory preservation and rehabilitation of forest lands. The government also was subject to similar compliances. These principles of forest use and forest rehabilitation resulted in not only conscious and responsible attitude of government and private persons to the needs of preservation and protection of forestry lands, but in the rapid growth of plant and animal populations, the high environmental performance, and the balance between all the nature components of the resource potential.

In 1939–1945, the territory of the Carpathian macro-region was incorporated in the Soviet Union as an integral part of the Ukrainian Republic. As private land use was not welcome by the pro-communist ideology of that time, being banned by the current law, the forestry lands and the potential generated by them were declared to be the state (public) property. Following the declared ideology, some forestry entities were created in the forestry sector of the Carpathian macro-region, which have survived to the present day. As mentioned earlier, they fail to properly preserve and rehabilitate forestry resources, the resource potential of Ukraine on the whole and the Carpathian macro-region in particular, which is demonstrated by the dynamic series of key forestry indicators (Table 1, by data from [15]).

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>2010</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Logging output (reported prices), million UAH</td>
<td>3530.2</td>
<td>7181.9</td>
<td>10176.9</td>
<td>12274.3</td>
<td>12967.7</td>
</tr>
<tr>
<td>2</td>
<td>Logging area, thousand hectares</td>
<td>29.1</td>
<td>33.6</td>
<td>34.6</td>
<td>34.7</td>
<td>35.2</td>
</tr>
<tr>
<td>3</td>
<td>Harvested realizable timber, thousand m³</td>
<td>7239.0</td>
<td>8218.6</td>
<td>8391.8</td>
<td>8425.0</td>
<td>8481.8</td>
</tr>
<tr>
<td>4</td>
<td>Area of forest rehabilitation, thousand hectares</td>
<td>70.1</td>
<td>58.0</td>
<td>60.4</td>
<td>63.2</td>
<td>64.7</td>
</tr>
<tr>
<td></td>
<td>– area of forest renovation, thousand hectares</td>
<td>14.0</td>
<td>20.0</td>
<td>20.0</td>
<td>20.9</td>
<td>22.1</td>
</tr>
<tr>
<td></td>
<td>– afforestation area, thousand hectares</td>
<td>27.8</td>
<td>5.0</td>
<td>2.5</td>
<td>2.9</td>
<td>2.2</td>
</tr>
<tr>
<td>5</td>
<td>Forest lands afflicted by fires, thousand hectares</td>
<td>3.7</td>
<td>13.8</td>
<td>14.7</td>
<td>1.2</td>
<td>5.9</td>
</tr>
<tr>
<td>6</td>
<td>Forest areas protected from pests and deceases, thousand hectares</td>
<td>81.9</td>
<td>31.8</td>
<td>46.0</td>
<td>37.2</td>
<td>46.1</td>
</tr>
<tr>
<td></td>
<td>– by biological method, thousand hectares</td>
<td>68.4</td>
<td>20.8</td>
<td>31.6</td>
<td>29.0</td>
<td>31.4</td>
</tr>
<tr>
<td></td>
<td>– by chemical method, thousand hectares</td>
<td>13.5</td>
<td>11.0</td>
<td>14.4</td>
<td>8.2</td>
<td>14.7</td>
</tr>
</tbody>
</table>

A positive trend in the logging output and the harvested realizable timber allows us to say about extra logging of wood, because the area of forest rehabilitation was gradually decreasing in the analyzed years. The inadequacy of measures on preservation of forestry lands and products thereof is confirmed by the indicators of the areas of forests protected from pest and deceases, and the areas afflicted by fires.

Apart from the government, the right of ownership and use of forest lands now belongs to other forest users. The State Agency of Forest Resources of Ukraine administers nearly 300 public forestry and timber industry enterprises with the total area of 7.4 million hectares (a little more than 76% of
the total forest area in Ukraine). Another 400 thousand
hectares of forests are subordinated to the Ukrainian
Ministry of Agroindustrial Policy and Foods, other
200 thousand hectares – to the Ukrainian Ministry of
Infrastructure. The communal forest enterprises are
users of 1.2 million hectares of forest lands, or more
than 12% of the total forest area; the area of private
forests in Ukraine is about 0.1% of the total forest area,
amounting to 9.4 thousand hectares [8].

Considering the existing structure of owners and
users of forestry lands in Ukraine (it should be noted
in passing, that a similar structure was created in times
of the command and administrative management
model), it will be extremely difficult to implement
an integrated forest policy that would be capable to
regulate preservation, rehabilitation, protection and
use of the forestry sector resources, and to comply with
the EU requirements. It follows that the numbers of
administrative departments that are users or owners of
forestry lands now need to be immediately decreased.
Attempts to change the structure of users and owners
of forestry lands were already made at the end of
20th and beginning of 21st century: the decision
was taken on incorporating the lands of forestry
enterprises subordinated to the Ukrainian Ministry of
Agroindustrial Policy and Foods in the publicly owned
forestry enterprises. But this incorporation has not
been made by now.

The Cabinet of Ministers of Ukraine and the
President Administration have taken the decision to
transform a number of departments and ministries
with departmental forest lands in possession.
However, a large part of forestry lands still remain
to be administered by the entities which operation
has nothing to do with forestry. The above said gives
evidence of the need to launch reforms of the forestry
lands with changing the structure of owners and users
by way of mergers, creating new market-oriented,
joint-stock, private and other categories of entities.

The important role in this process can be assigned
to the State Statistics Service of Ukraine. It refers to
change in the format of statistical reports that have
to be made online and not on paper, with the minimal
impact of the subjective factor, i.e. a public servant.
Entities using and owning forestry lands must provide
complete records of processes involved in rehabilitation
of wood and non-wood resources generated from
forestry activities for the online register. If it is so done,
the statistical reporting on forestry lands rehabilitation
will become sound and unbiased, thus eliminating the
existing drawbacks. We are convinced that the area
of private and leased lands which share in the land
structure still remains small needs to be enlarged at the
expense of public forestry lands.

The attempt to transfer forest land in the private
property was made in the Carpathian macro-region as
early as at the beginning of 1990s. But subsequently,
due to extra logging by new owners, breaking the
balance of resource potential, abuse and corruption,
small privatization was stopped. We believe that
restitution can be a key to rational solution of
problems related with private ownership of forestry
lands. It refers to return of the rights for forests,
an nihilated by the communist power, to their former
owners. A retrospective analysis shows that prior to
establishing command and administrative principles
of management in the Carpathian macro-region, small
private owners of forest lands could organize highly
effective rehabilitation and exploitation of forest
potential along with taking measures for preservation,
improvement and protection of forest resources,
including the land. Besides that, they were regular tax
payers (annual payment for land plot).

Apart from the restitution, which cannot be fully
realized due to the absence of persons with the respective
right, we believe that a viable measure would be leasing
of forestry lands. First and foremost, it concerns long-
term leasing, because the rehabilitation process in
this sector is long-lasting. The leasing can become the
trial period for the subsequent privatization of a land
plot by a lessee. Special emphasis should be made on
the terms of use of the leased forest lands that should
be specified beforehand in a leasing contract. Our
studies show that the prevalence of public ownership
on forestry resources in the Carpathian macro-region
is unable to implement the present-day priorities of
preservation and protection of lands in the forestry
sector. Moreover, the number of violations of forestry
regulations have been increasing day-to-day (Table 2,
by data from [15]).

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of illegal loggings</th>
<th>Damage inflicted to forestry enterprise, million UAH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>11101</td>
<td>7287</td>
</tr>
<tr>
<td>Zakarpatskyi</td>
<td>1098</td>
<td>473</td>
</tr>
<tr>
<td>Ivano-Frankivskyi</td>
<td>452</td>
<td>663</td>
</tr>
<tr>
<td>Lvivskyi</td>
<td>1692</td>
<td>1552</td>
</tr>
<tr>
<td>Chernivetskyi</td>
<td>102</td>
<td>95</td>
</tr>
<tr>
<td>Total macro-region</td>
<td>3344</td>
<td>2783</td>
</tr>
</tbody>
</table>

Table 2

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Radical transformations are first and foremost required in the forest lands that are in public ownership, which major share fails to be properly protected and rehabilitated. Moreover, public forestry enterprises have always demanded subsidies, as their operation is loss-making. When the Ukrainian-Sweden project “Support to Programs of Reforms in Forestry Sector of Ukraine (UFSPM)” was implemented, the essential drawbacks highlighted by forum participants included the dominance of public ownership of forest lands and their ineffective management. While the public forestry remains to be subsidized, the extra profits gained from timber sales are deposited by business firms and physical persons who do not incur costs on forestry management and developing forestry infrastructure [9]. Unfortunately, such destructive modes of behavior are deeply rooted in Ukraine, in spite of decisions taken by top power bodies and concerned with measures to improve management at forestry enterprises and organizations and increase their own financial returns. It refers to the urgent need to reduce the burden on the central budget by lifting the subsidies to the enterprises engaged in cultivation and rehabilitation of wood and non-wood products of forests, implementation and protection of forestry resources.

The modern practices of budget support to European forestry companies shows that the total budget subsidies to them amount to 1–2% of the total costs of a forestry company, with a stable yearly downward tendency. Subsidies to public forestry companies are usually given for the following purposes: fulfillment of commissions from parliament and government; support to the actions conditioned by the Forestry Code of Ukraine; forest rehabilitation and afforestation; environmental protection; drawing up the rules on forest management and consultations for private forest owners [10, p. 17]. It means that financial assistance of the government in European countries, contrary to Ukraine, is target-oriented, whereas the share of budget funds in the total costs is low.

The usefulness and significance of forest resources is great for each country, society or individual. Apart from wood, it refers to non-wood resources which importance has significantly grown amidst the accelerating globalization and integration processes. Global forest eco-systems, i. e. the lungs of the planet, have been regarded as a central factor in preventing negative effects of global warming and emergency situations, as the main absorber of greenhouse gases, the natural filter for ground and underground waters. These are immanent natural properties of forests, which are more significant now than the cut wood [11, p. 88].

It should be said that non-wood forest resources are significantly overlooked by the society, and a method for their assessment is yet to be developed. But we are convinced that preservation of forestry resources should be integrally linked with their rehabilitation. Solutions for the above problems are a subject of the authors’ present-day effort expected to have long-term effects.

Conclusions. The current regulations on rehabilitation of forestry potential in Ukraine as a whole and the Carpathian macro-region in particular do not comply with the requirements of modernity, which is clearly demonstrated by the increasing areas of forest logging by the main users, the growing sales of woods without the required rehabilitations and preservations of forest plants or forest wood. Also, the lands that used to be forest plantations in Ukraine have been rapidly decreasing. In EU countries there have been vice versa tendencies. The predatory loggings of forests, the reducing numbers of plant and animal species and their populations, overlooking of the non-wood component in Ukraine are the consequences of the obsolete model of forestry management, created in times of the USSR and adapted for the market-based economic system. Retrospective studies show that the forestry sector management in Ukraine is characterized by physical elimination of forest wood given the complacent attitudes of government and public, chaos, abuse, thefts when

The existing management foundations in the forestry sector fail to ensure protection and rehabilitation of forest resources. It is obvious that they need to be radically reformed, with emphasis on the priority of preservation and rehabilitation of resources produced on the lands of forestry enterprises. Besides that, the structure of owners and users of forestry lands must be transformed. This calls for restructuring and mergers of administrative departments which functions have nothing common with rehabilitation of forests and protection of forest lands. The reforming measures should be based on professionalism. We are convinced that forestry resources will be better preserved and rehabilitated in a balanced manner after diversification of property forms and creation of small and medium forestry enterprises with non-public forms of ownership.

Further studies will be devoted to constructing a mechanism of required reforms and elaborating a practical background for its proper statistical support.
1. Pochemu lesa v bohatykh stranakh oberehaui, a v bednykh unychtozhaiut. [Why forests are protected in the rich countries, and are destroyed in the poor]. expert.ua. Retrieved from www.expert.ua/me&holu_narodnaya-analitika/0/831-pochemu-lesa-bogatih-stranah-oberegayut--a-v-bednih-unichtazhayat... economist [in Russian].


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Збереження й відновлення лісогосподарських ресурсів у Карпатському макрорегіоні: статистичний аспектор

Збереження земельних лісогосподарських угідь в Україні та загалом у світі нині перебуває в полі зору багатьох вітчизняних ученнях, владних і бізнесових структур, промислівців тощо. Значний інтерес
до лісогосподарської продукції виявляють державні органи, місцеві органи самоврядування, приватні виробничі структури. Одним із найбільш суттєвих чинників, які негативно впливають на відновлення та збереження лісогосподарських ресурсів, є модель функціонування лісогосподарської сфери в Україні в цілому та Карпатському макрорегіоні зокрема. Їдеться про засади організації відтворювального процесу, які були сформовані ще у період функціонування командно-адміністративної моделі господарювання і практично без змін перенесені у нинішній ринковий механізм. Однак, як засвідчують дослідження, ринкова й командно-адміністративна моделі господарювання несумісні.

Доведено, що забезпечення високоекофективного використання, відновлення, збереження та охорони лісогосподарських ресурсів залежить від участі в цьому процесі держави, місцевих територіальних громад і бізнесу. Передусім це стосується формування сучасних засад організації фінансової допомоги, субсидування лісогосподарських підприємств і приватних власників. Збитковість підприємств і установ лісового господарства вказує на потребу побудови й управління в цій важливій сфері. Обґрунтовано, що для формування такої моделі необхідним є актуальне, надійне і доступне інформаційне підтримання, а це передбачає удосконалення чинної системи збирання, оброблення й аналізу статистичних даних. Хронічна збитковість у вітчизняному лісовому господарстві при одночасному збільшенні обсягів рубки лісу, наростанні обсягів реалізації лісодеревини, що сприяють незаконному збагаченню окремих осіб, причетних до урядових структур і органів місцевої влади, свідчить про неправильно використання лісогосподарської сфери тіньових, корумпованих структур. Означено потребує не лише перегляду чинної, а й формування нової лісогосподарської політики із запозиченням ознакої збереження, використання, відновлення та охорони лісогосподарських ресурсів, найважливішими з яких є земля. Передусім слід змінити приоритети організації та управління у лісогосподарській сфері. Зазначені зміни мають бути спрямовані на досягнення прибутковості лісогосподарських підприємств, диверсифікацію форм власності, збереження й охорону лісогосподарських ресурсів для нинішнього та майбутніх поколінь.

Ключові слова: лісогосподарська сфера, рубка лісу, реалізація лісодеревини, модель функціонування, статистична звітність, Карпатський макрорегіон, фінансова допомога.

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