

## PROBLEMS OF STATE MANAGEMENT OVER FOREST COMPLEX AS A FACTOR OF IMPROVING ECOLOGY AND WAYS TO THEIR SOLUTION: DOMESTIC AND FOREIGN EXPERIENCE

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This article presents the role of forest complex in economy of a country, reflects basic problems of state forest complex management, influence of forest complex upon improvement of ecology, concept of usage and reproduction of forest resources. Considering the fact that activity of forest industry if based upon usage of replenished forest resources, we should devote our attention to questions of ecology. The main attention must be devoted to the necessity of using forest in complex fashion, as it serves as foundation of preserving natural complex and, therefore, increasing stability of social-economic development of territories. The work also touches upon main problems of forest complex and services, included into it. References are presented to key approaches and specific features of forestry management system in USA, Canada, Finland, and Italy. It is shown that modern system of state forest usage in Russian Federation is defined by Forest code of Russian Federation and based upon the principle of distributing responsibilities between levels of state authority, first of all, between Russian Federation and subjects of Russian Federation. In the conclusion of this material we formulate the concept of successful measured that will provide for development of forestry in economy that are possible only at the foundation of complex approach in two areas: forest usage and forest industry that will have a positive effect upon overall improvement of economy.

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Within economy of a country forest complex occupies an important position. It includes forestry and sectors of forest industry on procurement and processing of wood, plays a significant role in social-economic development of many regions, and defines export positions of a country at the world market.

The intensified influence of human upon natural territorial complexes, particularly destruction of forest in industrial scale, started the worldwide processes of change in climate, water balance, depletion of flora and fauna. Along with growth of ecological problems, forest become not only a factor of production, but also an important factor of stability in social-economic development of countries and territories. This phenomenon defines the necessity to draw attention of scientists and practitioners towards complex usage of forest as a recreational resource and foundation of preserving natural complex.

However, in our opinion, insufficient attention is devoted to aspect of managing complex forest usage in terms of transition towards postindustrial economy, developing instruments of motivating business subjects to use forest resources in complex and develop technologies of function for this mechanism in practice of managing forestry. Supposedly, complex usage of forest resources will enable increase in intensity of forest complex development in a region and stability of social-economic development of territories.

As we know, the conception “forest complex” was used for the first time in 1972 in works by All-union conference “Usage and reproduction of forest resources in Far East”. During the period from 1976 to 1992 a number of works was published, and they contained different opinions on the content of this conception.

Besides, forest complex includes different services that carry out protective, sanitary-aesthetic, water supplying, recreational function of forest that are not all organized as sectorial operators, but their significance in national business complex grows continuously.

Significance of forest industry in the country, economy is determined not only by huge deposits of wood and local prevalence of forest resources, but also by wide integration of it with different sectors of economy – construction, industry, transportation, agriculture, and communal service.

Russia is one of the largest forest empire of the world, it concentrates almost ¼ of the world’s wood deposits. In 2018 in combination with forest it formed 883 million ha, embracing 776,1 million ha, or 45% of the country territory, wood deposits were estimated as 82,1 billion m<sup>3</sup>.

Within the structure of industrial production of Russia forest industry complex occupies the seventh place in output volume, and fifth – in amount of export. At the same time the most important part forest sector plays in economy of European North, many-forest

regions of Eastern and Western Siberia, at Far East this sector is the least popular one – industrial fuel and base metal.

Forest complex represents a totality of activity and production types in the area of business environment, a single object of labour (forest resources), and consecutive implementation of production processes according to their usage, reproduction, and protection.

The existing concepts and definitions touch upon various aspects of usage and reproduction of forest resources. The main concept of forest sector must reflect conditions, required to organize stable forest usage. Therefore, the main objective of forest complex is “procurement of forest product in maximum amount with minimal costs at the foundation of rational usage of forest resources” [4].

Forest industrial complex is a complex that includes: wood procurement subjector – procurement of wood, its initial procession, rafting and wood procession; wood procession – production of wood, plywood, wooden boards, carpenting objects, wood storage, etc.; cellulose-paper industry; furniture and wood procession industry [6].

Efficient management of forest structure requires a strict system of rules and principles.

Nowadays forest complex includes:

- Considering assortment of forest industry, subsectors (forestry, wood procession, cellulose-paper industry, hydrolysis), industrial, and wood processing industry;
- Production of wood materials (collection and procession of byproducts, hunting and fishing);
- Export of wood;
- Regarding scientific-research institutes of forestry and training staff for sectors of forestry;
- Construction works;
- Repair services with elements of machinery [7].

Besides, forest complex includes various services that maintain protective, sanitary-aesthetic, water managing, recreational function of forest. Not all of them are organized as sectorial operators, but their role and significance in national business complex grows continuously.

Russian forest industry is presented by such sectors as wood procession and paper industry, wood procurement, and wood procession. These sectors form around 4% of total volume of industrial product output in Russian Federation (4% of export revenue, 8% of staff number, and 2,3% of basic assets cost [5].

Within structure of forest we can outline the following complexes: forestry, forestry,

and each of them should be studied as an independent system of management.

Forest complex provides multiplication, protection, and usage of forest resources. The leading component is forest reproduction of trees and bushes. Forest output power is defined by annual growth of wood that can be used in production of wood materials. It is related closely with production of wood that terminates reproduction process in forestry. Forest production creates a foundation for preparation of woodcutting materials [3].

Forest complex also includes forest hunting business. Forest hunting is the most efficient, therefore, in order to establish rational usage and reproduction of not only vegetative resources, but also animals, complex forest hunting campaigns are organized frequently.

Production in field of utilizing waste, related to procurement of turpentine, occupies a middle place between forestry and forest industry. It is usage of lively pine tree standings and includes production of stump resin. Regarding wood processing industry within forestry, subsidiary of a company bears auxiliary nature and is primarily designed to process low-value wood [2].

Forest sector is a source of forest resources. This form of nature usage plays a special role in preservation and improvement of ecology. Particularly, forests play a critical role in processing carbon dioxide and maintenance of planet's oxygen deposits, collection of fresh water resources, protection of soil from wind and water erosion. Forest have an effective impact upon temperature and wind conditions of territories, amount and unity of fallout, mass of air, clean from dust and hazardous admixtures.

The existing sectorial structure of forest complex in Russian Federation is incomplete, as it is directed towards procurement and procession of mainly large wood materials. However, not all sales have been discovered in regard to fine wood. It is related to the fact that cellulose-paper and hydrolysis industries, being the major consumers of fine grain wood, are not sufficiently developed. For the same reason waste of wood procurement and wood procession is not used sufficiently [1].

In this regard experience of Italy is interesting, as there most forestry authorities have been transited to local level of government [8]. Unlike Canada, where most of forest areas are private property (no less than 60%, rest of forests are in ownership of local authorities). Forest usage in Italy is defined by extreme stability, particularly due to the fact many problems are

regulated by documents, accepted 200 years ago. Management is carried out within plans, confirmed and developed by municipalities with minimal finance from state budget. The major function of local executive authorities is comparable with staff composition and structure of former Russian forestry. Besides, within structure of forest management body it is possible that one of forest police specialist will carry out functions of controlling usage of forest resources [8].

In USA the structure of state forest usage really emerged in early 1920-ies, during centuries before that, until 1905, forest service has been founded at the level of federal government. Until then problems of reproduction and protection of forests were almost ignored at the level of governments and authorities, and forest resources were considered as almost inexhaustible. The key feature of forest management system in USA is active and legally-fixed participation of citizens and various institutions of civil society in making key decisions in the area of managing forestry. Particularly, it is necessary to discuss with citizens and social organizations problems of preparing documents on planning measures targeting usage, protection, and reproduction of forest resources.

Nowadays Forest service of USA is under jurisdiction of federal ministry of agriculture. Particularly, authorities of this service include:

- preserving productivity of forests;
- protecting wildlife and recreation areas;
- protecting cargo [8].

Most of forests in USA are under private property (no less than 75% as per 2016) [8].

Experience of Finland in organizing state forest usage is considered exemplary among experts. Finland achieved a significant progress in this area of national economy.

Structure of forest management in Finland includes only 6 organizations of different legal-organization forms. Ministry of forestry and agriculture is the main institution within structure of managing forestry in Finland that is responsible for developing state policy strategy, and programme in field of managing and using forest resources. Ministry of forestry and agriculture includes 13 regional centers and specialized organizations, Center of developing forestry Tapio. Practical realization of state policy of Finland in the area of forest usage is delegated to territorial branch of Ministry of regional forest centers, created by 13 parts [8]. These centers mostly create possibilities for improvement in quality of forest sites, support forest owners, prepare plans for their usage and

exploitation, and also maintain control and supervision functions.

State forests are under jurisdiction of a special state trust, called “Forest service”. This service also provides economic exploitation and usage of state forests and organizes and maintains operation on processing and reproducing forest resources. At the same time the trust has different sources of income and financing in its activity. The most work on protecting and reproducing forest resources is financed from the revenue of exploiting forest resources in state ownership. Besides, it received subsidies for realizing separate authorities in the area of protecting and preserving forests.

In Finland 60% of forest are under private property. There are 735 thousand forest owners in the country, average size of territory equals 30 ha, the state owns 25% of forests and only 10% of large enterprises. Area of forests that must be assigned annually for procurement of wood, forms 550 thousand ha, area of forest reproduction – 160-170 thousand ha, natural afforestation – 37%, this data is confirmed by regional forest government.

On the whole, modern system of state forest usage in Russian Federation is defined by Forest code of Russian Federation and based upon the principle of dividing authorities between levels of state power, first of all, Russian Federation and its subjects.

Delegating authorities in managing forestry of Russian Federation is designed for establishing a system within which subjects of Russian Federation will play a specific role in standard state system of managing forestry. According to this solution by founders of Russian Federation, there are subjects of Russian Federation, authorized to manage 93% of all forests in Russian Federation, including:

- organization of state protection of forests and forest control;
- development and review of plans and rules within forestry system
- organization of forestry, forest resources, and forest usage;
- organization of forest usage system and forestry at the territory of Russian Federation.

Activity of forest industrial complex is based upon usage of reproduced forest resources, therefore, when we speak of managing forest industrial complex, we should address problems of ecology. Successful realization of measures, designed for development of forestry in economy, is possible only within complex approach in two areas – forest usage and forest industry, and will have a positive effect on overall improvement of ecology.

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