Organizational and management mechanisms for the digital transformation of economic activities

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Abstract. The study is devoted to the development of digital technologies in the forest industry, which potential in Russia is practically not measured and belongs to the state ownership at all. The work revealed that forests are exposed to fires, illegal logging, flooding, the spread of diseases, etc. every year, which requires state and regional structures to constantly monitor and control the state of the forest fund. The study conducted an analysis of indicators related to the state of the forest fund, which revealed that in recent years, the volumes of forests and wood have not changed, but there is an increasing tendency to destroy them. Based on the results of the analysis, it was suggested that in order to effectively account for, analyze, monitor and control the forest in the forest industry, it is necessary to apply digital technologies that will allow for the effective implementation of annual forestry supervision. At the end of the study, the stages of digital forest taxation related to the control of the number of tree stands were presented.

1. Introduction

Forest is the main component of the natural ecosystem, which provides humanity with many resources and cleans the air masses of pollutants. In most countries, the forest is the basis of the economy, forms the value added of the country's gross domestic product and performs a system-forming function for many types of economic activity [1]. However, in recent decades, issues related to the conservation of forests have become particularly relevant, as foci of forest fire constantly arise, their illegal deforestation and sale of forests to foreign customers [2].

Today in the Russian Federation and countries of the world there are necessary resources that allow continuous monitoring of the state of forests in order to reduce foci of fires and illegal logging, control changes in the structure of wood and the volume of spread of their diseases, as well as record the number of forest resources provide the necessary measures for its protection [3-5]. It is possible to implement such technologies only by using autonomous digital devices that will collect, accumulate, store, process and transmit information. A similar practice is applied in the state and industry sectors,
which makes it possible to increase the efficiency of managing certain areas of activity and ensures the necessary stability of these areas.

In order to transform digital technologies into the forest industry, it is necessary to study the state of the forest fund of the Russian Federation and the share of lost forest fund, as well as develop mechanisms to introduce digital technologies into the forest industry [6-7].

In this regard, the authors of the study believe that the presented work is relevant and necessary in the modern changing world, and the development of digitalization mechanisms for the forest industry will provide the necessary control over the forest fund by state and branch ministries.

2. Methods and Materials
The presented research objective is to develop digital technologies of the forest fund in order to ensure accounting, analysis, monitoring and control of Russian forests. This goal allowed us to offer the following research tasks:

- Conduct an analysis of the forest fund in order to determine the current state of the Russian forest industry;
- To propose measures based on the use of digital technologies that allow accounting, analysis, monitoring and control of the forest fund.

The work used data from line ministries and state statistical bodies, and the applied scientific methods made it possible to solve the research tasks.

3. Results and Discussion
The Russian Forest Fund is the largest natural fund, which is located on the world map and allows you to ensure the sustainability of the environmental situation in the world. At the same time, the indicated potential is being transformed and changing every year, which requires the regional authorities to implement a policy change to supervise and preserve the forest fund for future generations. Today, for example, there is a state program “Development of forestry”, which was adopted until 2020, with the subsequent edition until 2024. The subjects of the Russian Federation also adopted regional programs for the protection of forests and the development of the forest fund in their territories.

The performer of the state program “Forestry Development” is the Ministry of Natural Resources of Russia, and the budget allocation from 2013 to 2024 will amount to 423 billion rubles. The goal specified in the program is to increase the efficiency of the use, conservation, protection and reproduction of forests, ensuring the satisfaction of consumers with the benefits and resources of forest funds while maintaining the ecological potential of the forest. Among the indicators of the program are conservation of forest cover, reforestation, an increase in payments to the budget system of the country, etc [8-9].

The program has two subprograms:
- Ensuring the use, conservation, protection and reproduction of forests;
- Strategic forest management.

Accordingly, the analyzed program is aimed not only at preserving the forest, but also at developing measures for the development of the forest fund digitalization issues are not considered in this program.

Further, it is advisable to consider the potential of the forest fund and the dynamics of its change over five years (figure 1) [10].

From the presented figure it can be seen that the area of forest fund lands and lands of other categories on which forests are located has increased by 3.6 million hectares over five years, and the total timber stock has not changed. However, it is worth noting that the increase in the area of land on which forests are located does not indicate forest growth, since various factors such as floods, fires, illegal logging, etc., affect the forest fund, which reduces the actual forest fund.

Consider the volume of forest destruction by various factors (figure 2) [10].
The figure shows that over the period under review, the number of dead forest stands has decreased almost twice, the number of forest fires is also decreasing, however, qualitative indicators are increasing, for example, the number of forest areas covered by fires and the volume of burned forest stands have doubled. Of course, the current situation negatively affects the country’s forest fund, and an increase in quality indicators indicates the need to find measures to monitor and control the forest fund.

Today, the conservation of the forest fund is carried out by various mechanisms, for example, nature reserves, nature conservation areas are formed, illegal deforestation is prohibited, the rules for finding a person in the forest zone are tightened, etc [11-13]. However, these measures do not lead to...
the planned indicator, which requires the state and industry structures to introduce new mechanisms for the conservation and protection of the forest fund from various negative consequences. In this regard, for operational monitoring of the state of the forest fund, it is necessary to introduce digital technologies in the assessment of Russian forestry.

According to the authors of the research, accounting and analysis of the forest fund have to be performed using modern digital technologies, which today are partially used in the forest industry. One of the most effective methods for assessing the number of forest stands, the level of forest use and the percentage of deforestation is taxation, which is, determining the amount of forest fund and the amount of trees used [14]. One of the tools for conducting taxation is a topographic survey or aerial survey, which allows you to provide an effective way to monitor and control the forest fund. In our opinion, it is advisable to provide the following procedure for the forest fund taxation [15]:

- separation of the forest fund in the territory in order to streamline the taxation process;
- search and use of modern digital technologies in forest taxation (topographic survey, use of unmanned devices, aerial photography, etc.);
- development of regional and state programs aimed at forest taxation;
- empowerment to carry out measures on taxation of forests of state, regional, legal and physical persons;
- selection and conclusion of agreements for the conduct of measures on taxation of forests among legal entities and individuals;
- entering the received data into the state information system and granting rights for the protection and restoration of forests responsible on a territorial basis;
- optimization and unification of forest taxation processes;
- creation of an information system that allows for continuous monitoring and monitoring of the state of the forest fund.

As a result, the digital forestation taxation can be represented in the form of the following figure (figure 3) [15].

![Figure 3. Digital forestry taxation.](image)

Thereby, in the opinion of the authors of the study, accounting and analysis of the forest fund is the main state task, due to which it will be possible to ensure the conservation of forests for future generations and ensure the necessary socio-economic and environmental stability. At the same time, in a changing external environment and the principles of state and industry management in forestry, it is also advisable to use digital technologies, due to which streamlining of the process of collecting, accumulating, processing and storing information, as well as increasing the effectiveness of control over changes in the forest fund will be achieved.
4. Conclusion
The presented study was devoted to the development of digital technologies in the forest industry. The work revealed that the forest fund of the Russian Federation is constantly undergoing various changes that are associated with the occurrence of fires and illegal logging, changes in the structure of wood and their disease. Because of the analysis of the forest fund, it was revealed that the volume of land occupied by forests and the total volume of wood reserves does not change, while there is an increase for destruction. In this regard, the work established that in the forest industry it is necessary to use digital technologies to preserve the forest fund for future generations. Digital technologies will help to collect, accumulate, process, store and use the collected information about the forest fund. It was proposed in the work that in order to ensure monitoring and control over the forest, it is necessary to apply forest taxation, which consists in determining the number of tree stands and it is advisable to implement these measures using digital tools. In conclusion, the study proposed stages of forest fund taxation, which includes a sequence of actions aimed at accounting, analysis, monitoring and control of Russian forests.

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