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Current issues of the regional forestry planning on the example of the Sverdlovsk region (Russian Federation)

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Abstract. The publication addresses the problematic issues of the regional forestry planning. The object of research is the forest sector of the Sverdlovsk region. The subject of research is the mechanism of regional forestry planning. The purpose of the work is to describe the current mechanism of regional forest planning and make individual proposals to improve its functioning. One decade of experience in applying the first forestry plans of the subjects of the Russian Federation have shown their failure. The new forestry plans, developed in the subjects of the Russian Federation using a unified methodology for the period from 2018 to 2029, do not inspire optimism either. The main reasons for the failure of forestry plans are the lack of a scientific concept and the usage of a forest management approach in their development. The conclusions are drawn on a number of organizational and methodological problems associated with the development and implementation of the existing regional forestry planning mechanism, as well as on the need to develop an up-to-date scientifically proven methodological basis for planning in the forest sector at the regional level.

1. Introduction

Decentralization of forest management in the Russian Federation (RF), carried out by the Forest Code of 2006 [1], has led to the transition of the process of making administrative decisions from the federal to the regional level. In these conditions, the quality of managerial decisions that are made and implemented at the regional level, especially of a strategic nature, related to the development of the forest sector, is of particular importance.

The object of the study is the forest sector of the Sverdlovsk region, the production potential of which is one of the largest in Russia, not only due to its favorable economic and geographical position and the development experience of the basic branches of the forest industry, but also to the significant volumes of forest raw materials, as well as to a wide range of products. In almost every municipality of the region there are timber enterprises, most of which are city-forming. The solution of not only economic, but also social and environmental problems of the territories, small and remote settlements depends on the work of these enterprises.



The Sverdlovsk region belongs to multi-forest areas: the total wood stock is 2,096 million m³, and the forest cover of the territory is 68.7%. The annual allowable amount of timber felling is 24 million m³.

In the future, the forest sector should become one of the leading sectors of the region's economy. However, today its production capacities are not fully used. The region lags behind the other forest regions of the country in terms of production of the main types of products. Since the sector accounts for no more than 1.5% of the total volume of shipments of industrial production in the region, the Ural authorities do not recognize the forest sector as one of the prioritized sectors of the economy and disregard the fact that its resources are renewable, unlike, for example, the resources of the mining industry. To solve the urgent problems in the regional forest sector, it is necessary to conduct coordinated measures to develop forestry and the forest industry based on modern scientific developments in the area of forest administration. One of the most important structural elements of the forest sector management is the system of long-term planning of its sustainable development.

The practice of applying the mechanism of regional forestry planning has been reflected in the publications of the foreign researchers. It should be noted that the majority of the research on the discussed topic is local and is aimed to solve the specific sectoral problems. These problems could be connected with the irrational placement of the forest industries in the regions [2], inadequate determination of the volumes of the forest usage [3], or with the institutional problems that interfere with the forestry planning [4]. Meanwhile, the imperfection of the methodological tools for the regional planning in the forest sector in general constrains the development of the applied forest economy.

The purpose of the work is to describe the current mechanism of regional forest planning and make individual proposals to improve its functioning.

2. Methodology

The transfer of the primary authority for forest management from the federal center to the regions led to the emergence of a new mechanism in the system of forestry relationships - regional forestry planning.

In the Article 85 of [1], the forest plan of the subject of the RF is referred to as the document of the forestry planning. It was assumed that the forestry plans of the subjects of the RF developed for a ten-year period (2009-2018) will become a long-term program for forestry sector management in the new economic conditions.

The forestry plans were formed on the basis of materials from forestry regulations, which did not take into account such issues as the characterization of existing and future demand for forest resources, and the effectiveness of the proposed measures was not examined. In most cases, in the process of the forestry plans development, the declared volumes of forestry activity were not supported by financial resources. The overestimated planned volumes of forest usage were not consistent with estimates of the capacity of regional forest products markets and suggested harvesting economically inaccessible resources. As a result, the forestry plans developed by the subjects of the RF appeared as regional forest management projects, targeted at the ten-year planning (which also correspond to the validity period of the forestry regulations).

Since most of the forest plan measures were financed by budgetary funds, which are limited at the federal level by the three-year budgeting, assessing the effectiveness of measures outside the three-year period is inexpedient (it is difficult to provide reliable information about their further financial support).

It should be noted that the developers of the forestry plans on a competitive basis often became the organizations, whose specialists were not trained in this area, and were not familiar with the specifics of a particular region. Developers' lack of the appropriate normative bases created additional difficulty.

The disadvantages of forestry planning included the absence of reliable information on regional forest resources and the information regarding the dynamics of forest product volumes (forestry plan indicators for a ten-year period were established on the basis of a very successful pre-crisis 2007, when all branches of the forest sector were characterized by high growth rates), which impeded the achievement of the intended results. For the entire period of applying the first forestry plans, the Articles 85 and 86 of [1] were not amended, which confirmed the lack of demand for plans as forest administration tools in the subjects of the RF.

Deficiencies of the existing concept of regional forestry planning led to the fact that forestry plans, were not integrated into the federal strategy for the development of the forest sector in terms of both numerical indicators and their achievement period. Taking into account the failure of forestry plans, in a number of subjects of the RF, regional programs and strategies for the development of the forest sector were developed. They determined economic and social target for forest development.

In 2018, new forestry plans were developed in accordance with the new federal document and the methodology proposed in it [5]. There are some positive aspects in the new methodology. For instance:

- 1) in the economic section of the forestry plan a subsection appeared, based both on the analysis of the correspondence of the raw material base with the investment projects and on the prognostication of the competitive distribution of sales markets;
- 2) comparison of the costs of events with the expected results is envisaged (expected revenues and expenses, disaggregated by different levels of budgeting);
- 3) at the initial level, the concepts of “market value of the used forest resources”, “market value of the products of processing of forest resources”, “transport accessibility of forests” are introduced;
- 4) a section on the environmental component of forestry planning is presented;
- 5) a section regarding the methodology for the compilation of the forest plan is provided.

At the same time, the general forest management approach was preserved (including the duration of the validity period of the forestry plan). As before, forestry plans lack comprehensiveness between the branches of the forest sector, and the market-economy principles for forestry are not used. Due to a lack of understanding of the market approach to the key issues of forestry planning, a sterling economic section of the forestry plan, that would take into account the development trends of the forest products market and provide an assessment of the effectiveness of its implementation within the new methodology, has not been formed again.

Based on this, one can hardly expect an increase in the importance of forest plans as documents providing an opportunity to assess the effectiveness of regional authorities in the area of forestry relationships. Forestry plans are unlikely to turn into a “working” document for practical activities in the area of forest administration.

2.1. Regional forest management in Sverdlovsk region

Forest management plays the most important role in the strategic forestry planning system. It implies an economic assessment of forest resources, including: quantitative and qualitative estimation of forest plantations; estimation of the amount of the required forestry activities; estimation of the volumes of forest usage and of its distribution on the territory of the region. As in most regions of the RF, the state of the forest management in the Sverdlovsk region is assessed as unsatisfactory.

To evaluate the forest resource potential, in order to effectively manage forests, it is necessary to ensure funding and organization of the regional forest management. A significant obstacle to attracting investment in the forest sector of the economy is the fact that the assessment of the majority of the forest areas in the Sverdlovsk Region was conducted more than 20 years ago.

In 2014, for the first time in ten years, the region received 85 million rubles from the federal budget for forest management activities. Territory examination started in Novolyalinsky, Turinsky and Rezhevsky forest areas, primarily because in the Turin forest area the forest management data was collected more than 20 years ago and was outdated, Rezhevsky forest area was characterized by intensive forest usage, and the territory of the Novolyalinsky forest area was attractive for investment, as a wood processing plant is located there.

In 2015, the region took part in co-financing forest management at the expense of the regional budget for the first time. These works were planned to be conducted within three years, that is, by 2017, and after that the data on about 7% of the territory of the regional state forest fund could be considered updated. Unfortunately, this turned out to be impossible, mainly due to the fact that the work was carried out by private entities that had no experience in this work, no qualified forest managers, and no updated

databases. Currently, at their own expense, tenants only conduct taxation of the forest areas, which is only a small part of forest management activities.

In the beginning of 2019, the forest area that was examined less than 10 years ago was 244,500 ha, which amounted to 1.5% of the total land area of the regional state forest fund. The consequences of obsolescence of forest management materials result in the inaccuracy of information on the forest resources (quantitative and qualitative characteristics), decline in revenues of the consolidated budget, unattractiveness of the forest lease, termination of leases of forest fund plots (legal costs). Investors abandon their potential projects. In 2016, the government of the Sverdlovsk region discussed the development of a state targeted regional forest management program on the terms of co-financing federal budget, regional budget, and forest fund tenants. However, the program was never approved and the investment of the region in solving the forest management problem remained extremely small.

We believe that modern forest management should become an effective tool for economic business planning, without which the state cannot provide its resource, determine the amount of timber taken, charge an adequate fee for it and carry out investment planning.

A business assessment of the forest resource potential as a method of forest administration cannot be considered based solely on the objectives of regional forestry planning. A number of issues that need to be addressed, when forming the procedures for valuing forest resources, should be predetermined at the federal level of forest administration, including strategic planning of the development of the forest sector of the country.

The Strategy for the Development of the Forest Complex of the Russian Federation until 2030, approved in 2018, established the following: "It is necessary to clarify the organization and financing of forest management activities with a focus on the full federalization of this function. The forestry (forest park), as a territorial unit of the state forest management, should become the object of forest management. The forest management should be carried out by state organizations." [6].

The opinions of experts regarding the changes that are currently taking place in the organization of forest management differ. Some believe that transforming it again from the regional to the federal level will improve the situation in the forest sector, while others see the new convenient schemes for corruption in the changes. The time will show, what will the transfer of powers for forest management result in. To start this process, a number of proposals and amendments, that provide the transfer of forest management functions to the federal level, have been introduced to the LC RF.

In any case, conducting ongoing forest management activities in the Sverdlovsk region (and other subjects of the RF) is urgently needed to organize the rational use of forest resources, and to increase both the profitability of the forest sector and the investment attractiveness of the region. Conducting forest management activities in the Sverdlovsk region will reflect the general picture of the sanitary condition of the forest fund of the region and will positively affect the ecological state of the region, since, the reliable information about the forest stands ensures timely conducted forestry activities aimed at reproduction of the forests. The proper forest management will become the basis of regional forestry planning.

2.2. The main documents for the forest sector development planning of the Sverdlovsk region and their relevance.

The first document in the list of regional forestry planning is the "Forest Plan of the Sverdlovsk Region for 2018-2029" [7]. The document was developed according to the new federal standard methodology in 2018 and approved by the authorities in 2019.

This document did not fully take into account the shortcomings of the previous forestry plan. In the absence of reliable information on forest resources, qualified scientific personnel involved in its development, in a lack of understanding of the real volumes of financial support, and with a generally maintained forest management approach in its development, the new forestry plan cannot become a fully working document in the area of forest administration.

The experience of applying the previous forestry plan in the Sverdlovsk region (for the period 2009-2017) [8] revealed many methodological and organizational flaws associated with its development and

implementation in practice. An analysis of the achievement of indicators of the region's first forestry plan confirms that an artificially constructed system of target indicators cannot be considered as an effective tool for state administration of forest resources.

Forestry plans have not become a tool that would be able to orient the forest sector towards producing products that are competitive in the domestic and foreign markets. As can be inferred from the table 1, none of the targets set in the 2015-2017 in the forestry plan for the production of major types of forest products were actually achieved in 2015 or 2017. This is the evidence for the inefficiency of the current forestry planning in the region.

Table1. Data on actual production volumes of the main types of forest products in comparison with the indicators of the forest plan of the Sverdlovsk region 2015-2017.

| Product name | 2015 year, (actual production) ^a | Forest Plan Indicator, 2015 [8] | Plan completion percentage | 2017 year, (actual production)* | Forest Plan Indicator 2017 [8] | Plan completion percentage |
|---|---|---------------------------------|----------------------------|---------------------------------|--------------------------------|----------------------------|
| Lumber, thousand m ³ | 270.2 | 1500 | 18.0 | 312.9 | 1700 | 18.4 |
| Plywood, thousand m ³ | 238.9 | 290.0 | 82.3 | 233.6 | 310.0 | 75.3 |
| Particle board, thousand m ³ | 24.8 | 150.0 | 16.5 | 37.7 | 250.0 | 15.1 |
| Fiberboard million m ² | 12.5 | 14.5 | 86.2 | 10.3 | 15 | 68.6 |
| Paper and cardboard, thousand tons | 38.1 | 87.0 | 43.7 | 46.8 | 90.6 | 51.6 |

^aAccording to the data of the Ministry of Industry and Science of the Sverdlovsk region <http://mpr.midural.ru/about/structure/> date accessed 05.09.2020

The Table 1 shows that the least successful fulfillment of the planned values are the production of Lumber (18.0%) and Fiberboard (10.3%) in 2015, and the production of Lumber (18.4%) and Particle board (15.1%) in 2017.

The second document related to forest planning is the "Strategy for the development of the forest industry of the Sverdlovsk region until 2020" [9]. It is idle and non-viable; its provisions are irrelevant, and were not reconsidered. Activities and reporting in the forestry planning in the region are now carried out in accordance with the state program "Development of forestry in the Sverdlovsk region until 2024" [10]. This document is fully coherent with the State Program of the RF in the area of forestry development [11], but it does not affect the issues of forest business.

All the regional forest planning documents mentioned above require a revision. One of the main shortcomings of the forest sector management is the lack of comprehensiveness and consistency in forestry planning at the regional level (as, indeed, at the federal level). Communication with forest experts from other subjects of RF confirms that a similar situation with the regional forestry planning documents is not unique to the Sverdlovsk region.

3. Discussion

The transfer of the basic credentials of forest administration to the subjects of the RF served as the reason for the fact that the forestry planning was based on the forestry plans of the subjects and the regulations of the forest territories. All previously running programs were ignored. Due to the change in the forest administration structure, forestry regulations were developed instead of the forest management projects. During the development of these regulations, significant changes have occurred both in terms of

planning indicators and in the scientific and technical level of conducting forestry. The reasons for this were the haste to complete the work, the low quality of a number of new regulatory documents and the lack of proper control by the authorities in the area of forestry relationships.

The ten-year period of application of forestry plans by the subjects of the RF showed complete failure of these documents. The newly developed and accepted for a decade forestry plans are also only a declaration of the region's long-term intentions for forest resource management. The declared principles are not supported by organizational and economic levers of influence on the mechanism of obtaining adequate forest income in the region.

Other documents related to planning the work of the forest sector in the subjects of RF often either contain outdated information or perform an informative function.

In addition, as mentioned above, an important problem remains to obtain reliable information on the reserves and condition of regional forest resources, which is necessary when providing a forest fund for use, designating measures for the protection, conservation and reproduction of forests, determining the amount of income from the use of forests. Unfulfillment of the forest management is the reason for the impossibility of preparing relevant documents for regional forestry planning.

To improve the situation with forest planning in the subjects of the RF, it seems useful to study the successful experience of foreign researchers working in this direction. Noteworthy are models and tools for integrated forest management and forest policy analysis [12], application of relax-and-fix heuristic in the aggregation of stands for tactical forest scheduling [13]. Reviewing the performance of adaptive forest management strategies with robustness analysis [14] offers a promising approach to identifying robust management strategies that can deal with uncertainties.

4. Conclusion and recommendations

There is a need to conduct in-depth theoretical and applied research on the system analysis and on the revision of the existing approach to regional forestry planning. The relevance of further research on this topic is justified by the fact that during the transition to market relations there is no methodology for transferring the regional forest sector to the principles of innovative development. There is no clear system of objectives, which would be determined not only by the contemporary, but also by the future trends.

It is important to formulate a new approach to the long-term development strategy of the regional forest sector of the economy. The content of this approach should consist of changing the current forms and methods of management.

The object of planning should be the forest sector of the economy as the complex of all branches of the forest industry and forestry. Only in this case will it be possible to balance the economic interests of all participants of forest relationships - the state, investors, entrepreneurs and population.

The forestry plan of a subject of RF should not perform the functions of a regional forest management project, as defined by the current regulatory documents, but should instead become an instrument for conducting a national forest policy based on principles and indicators traditionally used in economic planning. It should become a program for the socio-economic development of the region, and its validity period should not exceed five years. At the same time, representatives of all groups of participants in forest relations in the regions should be involved in the forestry planning process.

Based on the domestic and foreign experience, forestry planning should not be a substitute for forest management projecting, which has its own objectives (Article 68 of [1]), but become economic planning. It is important that:

- development of the forestry plan is carried out by the methods of the program-targeted organization;
- regional forestry planning subordinates to the objectives of the federal targeted programs for the development of the forest sector, as well as to the current and future plans for socio-economic development of territories;
- forestry plan is developed by state authorities of a subject of the RF;
- annual assignments of the forestry plan become the criteria for evaluating the effectiveness of the execution by the state authorities of the subjects of RF of the powers delegated to them. Forestry plan

must be approved by the federal executive authority in the area of forest relations (currently it is done by the Federal Forestry Agency) and become the basis for concluding bilateral agreements between the above parties.

Prior to the development and approval of the forestry plans, research should be conducted aimed at creating scientific methodological recommendations for the long-term forestry planning at both federal and regional levels, and all necessary regional forest management activities should be completed.

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