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### Formation of the regional forest cluster in the Tomsk region

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#### Abstract

The Russian Federation contains 25% of the world's forest resources. This is about 82 billion cubic meters of reserves, and less than 1% is available. In the context of a market economy, Russia has to attract a large amount of investments for the transition of the timber industry to a more intensive development, including technical re-equipment and modernization of the production capacities for deep and rational wood processing, and creation of high value-added products. The paper describes the formation of a timber cluster in the timber industry in the Tomsk region and the economic interaction between its participants. The authors of the paper examine the role of organizations in the modernization of technological processes and in the transition to high-quality production.

*Keywords:* Innovation, cluster, Tomsk region, forestry, silviculture;

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#### 1. Introduction

After the collapse of the USSR and the transition to a market economy model, the forestry complex, which includes silviculture, logging, the mechanical processing and chemical treatment of wood, overcomes a crisis. In the late 1980s, the USSR occupied the second place in the world after the USA by volume of timber exportation. In 2006, Russia occupied the sixth place.

In the Tomsk region, the development potential of the forestry complex is very high. According to the government of the region, the level of wood logging does not exceed 10% of the total allowable cut. On the territory of the region, the actual infrastructure allows to transform only up to 40% of raw materials. That is why the main task for further development of the timber industry of the region is the creation of new industries for deeper and more complex wood transformation. From 2010 to 2016, the total investment in the development of the regional forestry complex was up to 22.6 billion rubles (Fig. 1) [3]. The impulse that made possible to reach a new level of timber transformation efficiency was the opening of a MDF (medium density fiberboard) modern production in Tomsk in 2011, with the designed capacity of 25% production of the Russian MDF market in 2012 [2,4].

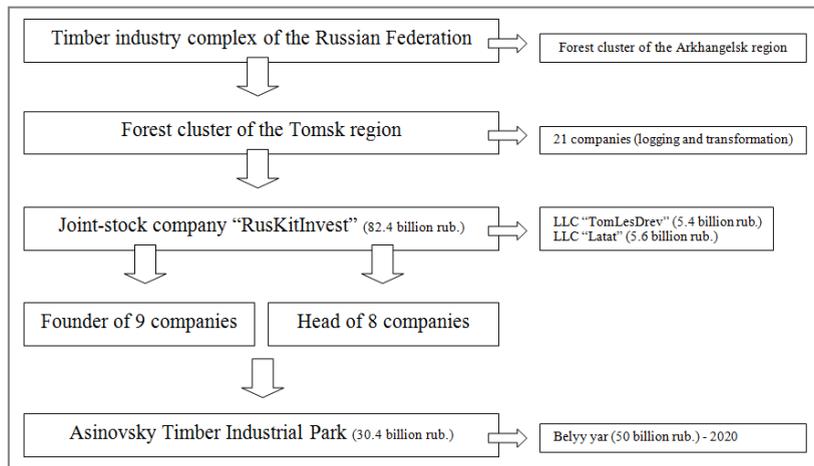


Fig.1. Formation of the forest cluster in the Tomsk region

The main aim of this paper is to identify the actual structure of the economic core in the cluster of the timber industry in the Tomsk Region.

## 2. Materials and methods

This paper examines the forest cluster in the Tomsk region. Firstly, detailed examination of the formation of the cluster was carried out. Secondly, analytical work concerning the mechanisms and instruments used for the creation of the cluster was done in order to undertake the analysis of possible integration of circular economy into the development strategy of the cluster in the future.

At the beginning, on the basis of three companies, it was planned to create a powerful block for producing timber boards. It was done by a joint-stock company *RosKitInvest* (established by the zone of technical and economic development of Yantai in China and the company *Hyunda-Sibir* in Russia). The third enterprise of the cluster was the limited liability company *Tomlesdrev* [2]. In addition to large enterprises, about 600 enterprises of medium and small sizes are currently engaged in activities that produce a wide range of products. The volume of export supplies of forest products by Tomsk participants in 2016 was up to 74.3 million dollars. In the exportation structure of wood products, the share of untransformed timber shipment was reduced from 15.9% in 2010 to 3.9% in 2016 [2].

At the moment the total amount of investments from the participants is more than 35 billion rubles, and this helps to generate about 4.5 thousand workplaces. If investors can accomplish all their plans, in 2020 the production of the entire range of fibreboards and related products will be about two million cubic meters per year [1].

Due to these factors, the strategy for creating a world forestry cluster has been formulated. The main source of financing is AVIC International Corporation with the aim of investing more than 30 billion rubles in the development of the Asinovsky forestry industrial park that consists of 6 factories of wood transformation. The project is supervised at the level of the governments of China and Russia. In 2008 these governments signed a memorandum "The creation of a forest industrial cluster on the territory of the Tomsk region with a volume of wood logging and transformation of 4,500 million cubic meters of timber per year" between the Tomsk Oblast Administration and the Yantai Northwest Forestry Company [1].

The organizational and functional structure of the forestry park consists of two parts. The first is plantation, logging, production, trading and auxiliary Russian enterprises. The second part is the Chinese International Corporation AVIC, one of the largest trading structures of China (Fig. 2). As a result, the joint-stock company "RusKitInvest" was established in 2008 (Fig. 3).

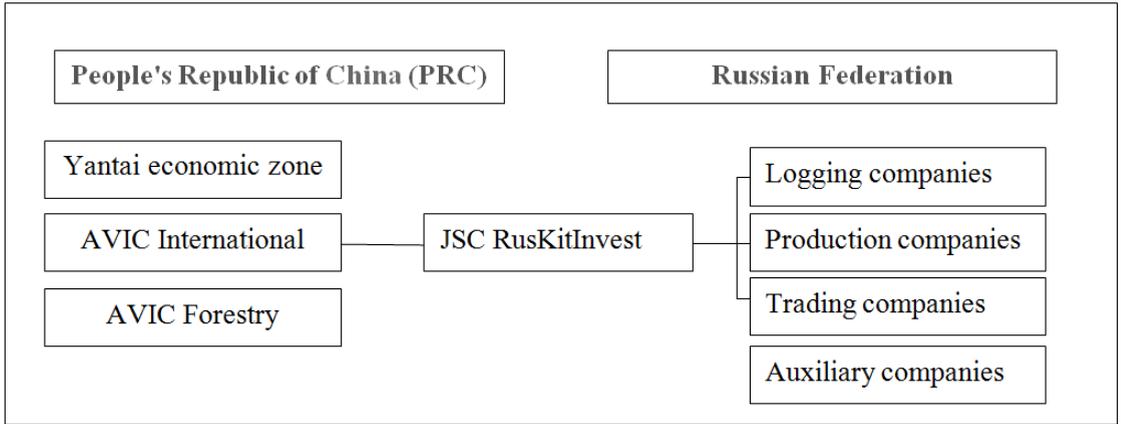


Fig.2. Organizational and functional structure of the Asinovsky timber industrial park [4, translated by B. Kalioujny]

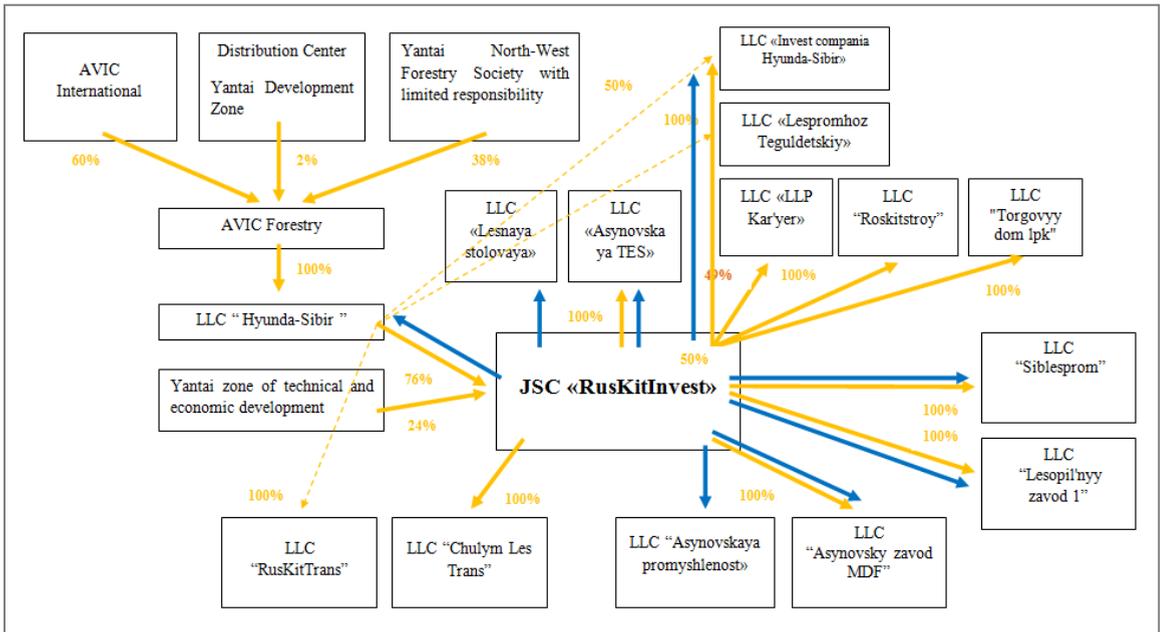


Fig.3. Organizational and functional structure of the company JSC "RusKitInvest" [5]

### 3. Conclusion

Today the organizational and functional structure of the forestry cluster in the Tomsk region is

mostly based on an international partnership between Russia and China. As a result, a joint-stock company "RosKitInvest" was established in 2008. The enterprise unites 17 companies, which deals with planting, logging, transforming, transporting and selling timber products to China. This is the schema of a holding company, which allows the owners to reduce risks and to get the benefits of tax incentives. Regarding to further development of the company and the cluster, it is necessary to understand in details all the logistics, from producing raw materials to selling finished products, in order to identify and estimated possible closed cycle in the organization of the production, and to integrate new ones.

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