Overview of Russia's Woodworking Industry










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ASSOCIATION OF TIMBER INDUSTRY MACHINERY AND EQUIPMENT PRODUCERS
LESTECH

LESPROM INFORM Professional woodworking journal

Total volume of roundwood logging in Russia

Russia may harvest
704 million m^3/year
According to the FAO: 670 million m^3/year

Harvesting in 2019: 219,15 million m^3

Plan for 2030: 286.1 million m^3/year





The country has resources, but lacks transport infrastructure for boosting logging volumes considerably



GENERAL OVERVIEW OF THE TIMBER PRODUCTS MARKET

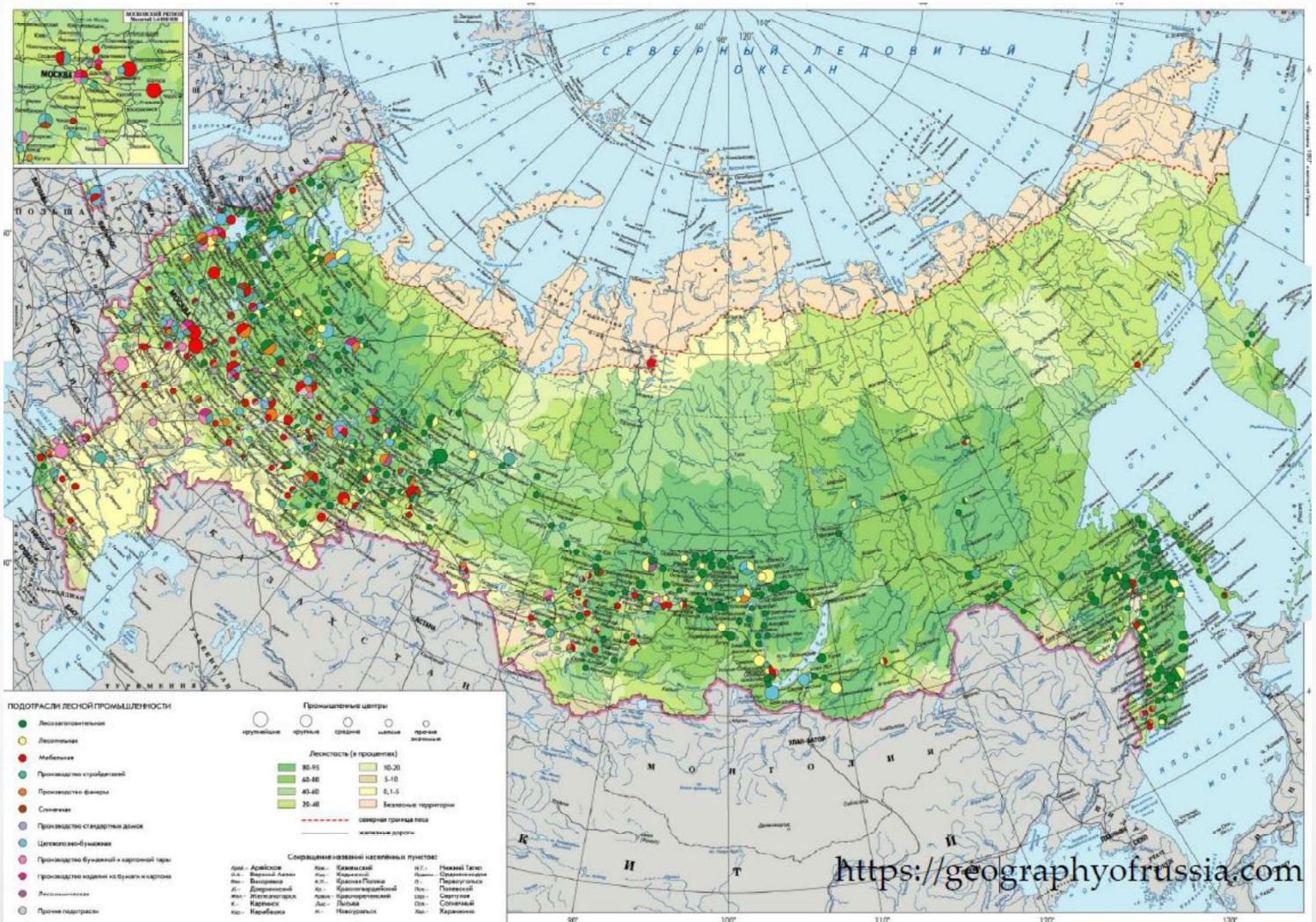
Products	Year						
	2010	2012	2014	2016	2018	2019	2020 Rosstat
Sawn timber, million m3	21.9/28*	21.2/29*	21.5/32*	22.8/33*	26.2/40*	29.9 / 37-40* (exports: 33)	28,6
Plywood, million m3	2.7	3.2	3.6	3.8	4.0	4.1 (exports: 2.744)	4,0
Chipboard, million conventional m3	5.4	6.8	6.8	7.3	9.7	10.0 (exports: 2.26)	9,9
Fiberboard, million m2	404	469	469	554	649	682 (exports: 161.9)	642
Pellets and briquettes, million t	No data	No data	0.89	1.0	1.44	1.6 (exports: 1.9)	2,0

Data: Rosstat (Russian Statistic Service)
* - according to expert estimates

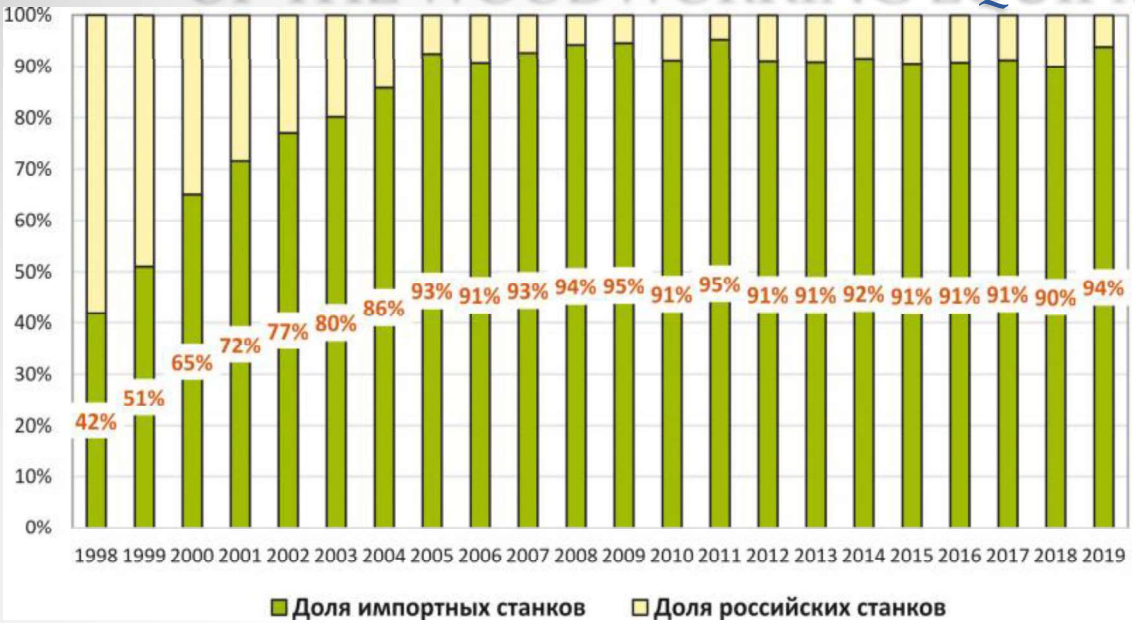
Industrial Production Index: woodworking and wood products output, except furniture: +2.2% in 11 months of 2020 y-o-y
Furniture industrial production index: +5.1%

The rate of exports

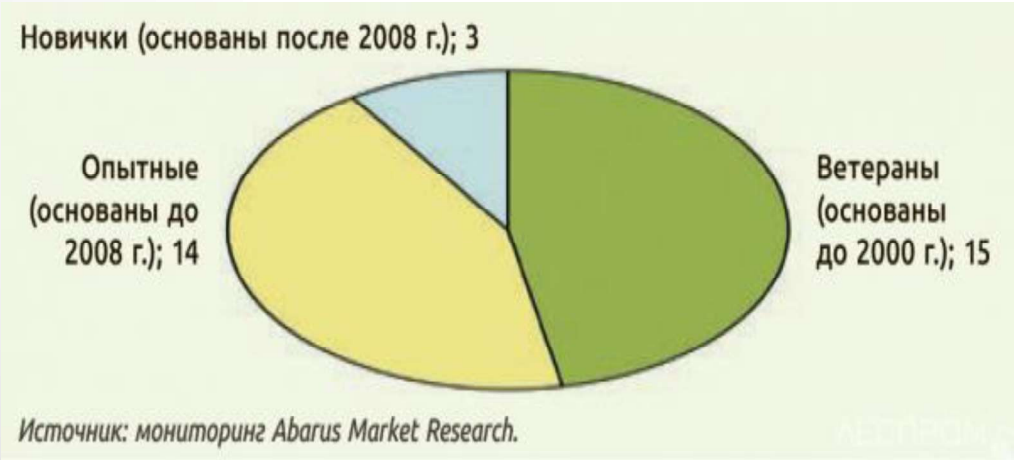
Domestic consumption lags far behind the wood products output, which are mainly exported to China and European countries



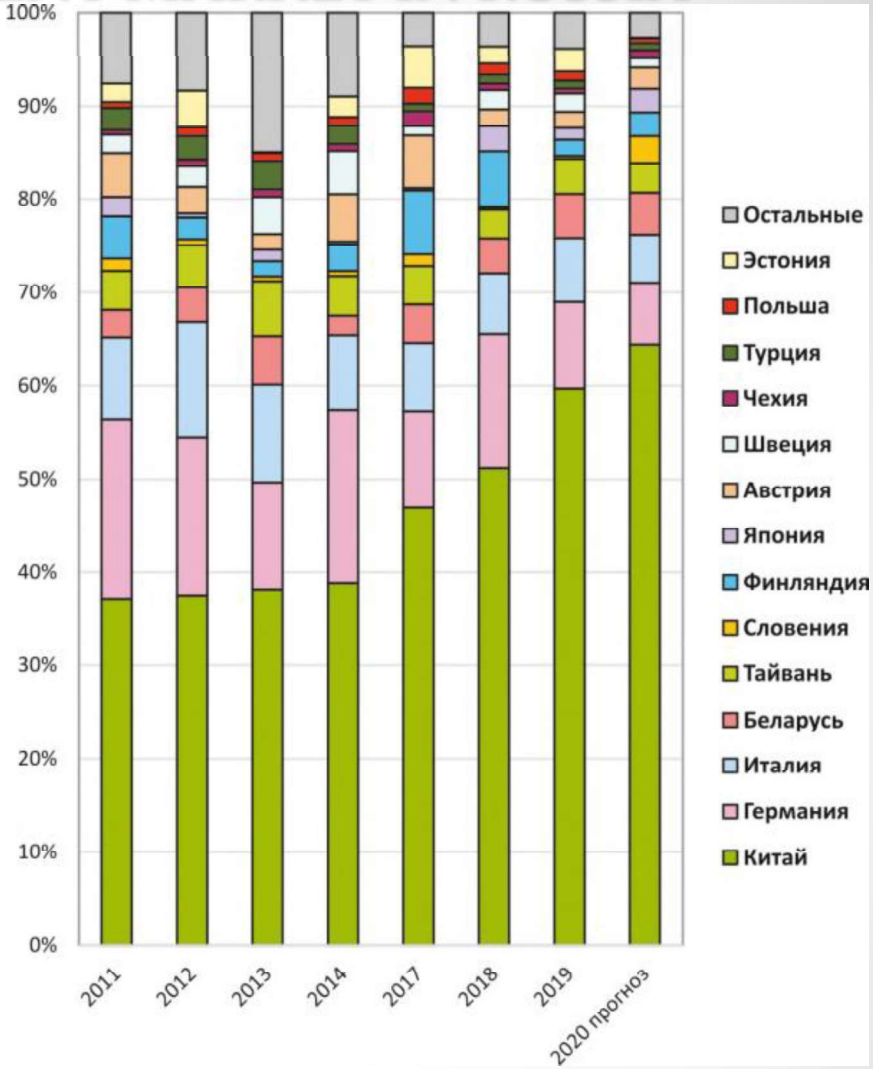
GENERAL OVERVIEW OF THE WOODWORKING EQUIPMENT MARKET IN RUSSIA



Share of imported woodworking machinery in the Russian market, %: imp./Rus.



Woodworking machinery producers in Russia: veterans, experienced, newbies



Woodworking machinery imports by country, %

Source: *Abarus Market Research*
Lesprominform magazine #8 (154), 2020

General trends in the timber industry

1. Consolidation of enterprises. Wider planning horizon which follows the growth of investments
2. Technological integration of logging and woodworking enterprises
3. Industrial utilization of pulpwood and thin logs which requires specialized processing lines
4. Growing automation and optimization of all production processes
5. Processing non-marketable logs, in accordance with legal requirements
6. Professional staff training with the help of university specialists as well as equipment producers
7. Introducing management optimization systems which help arrange production taking into account all the limitations and characteristics of raw wood which is planned for logging in the long-term perspective

Sawmilling production

1. Stabilization of production levels, as available wood resources are limited
2. Competition for wood resources
3. Export orientation of middle-size and large enterprises
4. Production diversification
5. Consolidation and mergers with logging companies
6. Startup of new capacities may lead to internal competition between Russian mills for export markets

Logging and woodworking companies are integrating; single-unit sawmilling capacity is growing



Small enterprises provide local customers





Middle enterprises face difficulties amidst low demand in the home market and tightening requirements from the foreign customers

Other trends, according to the sawmilling equipment suppliers:

- Low share of greenfield projects
- Major requests for construction or modernization come from the existing market players planning expansions

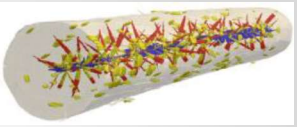
Development trends the industry needs to stay competitive	Constraining factors
Building mills of larger capacity	Absence of Russian producers of sawing equipment with feeding speed of 40+ m/min
Using bandsaw tools	Lack of specialists able to handle such equipment; mentality
Introducing equipment with high levels of automation and motorization	Lack of qualified personnel. High cost of equipment (esp. taking into account currency rates). Second-hand lines are available, which makes initial investments lower, but also decreases future profitability
Domestic market development **Abandoning the standards specifying usage of 4, 5 and 6-m logs.**	Low wood consumption culture. Mill owners are not willing to install separate lines to produce lower-margin side board products for packaging, pallets etc.
Construction of pulpmills, panel mills, chip-consuming boilers	High investments needed. Absence of state programs for comprehensive usage of wood
Building mills “in-forest”, shortening the wood hauling distance	Low number of enterprises using cogeneration boilers Lack of qualified personnel ready to work in shifts in remote forestry villages

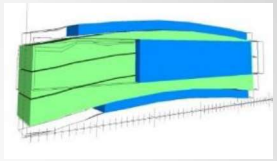
Sawmilling equipment market trends

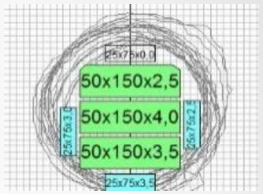
Middle-scale and large enterprises producing 75,000 m3 of sawn timber annually and more

1. Developing enterprises under modernization

- Mechanized and automated equipment
- Installation of systems for evaluating the dimensional and qualitative characteristics of each assortment (X-Ray, 3D scanners) and systems for positioning roundwood and beams taking into account their shape, including curved sawing
- Use of bandsaw equipment upon exploring new forest regions
- Focus on processing thin logs and sawing shorter wood, starting from 3 and 4 meters
- Quality control systems for performing technological operations (measurement of dimensions and humidity of assortments in the pass-through mode with automated scanners)
- Waste management with heat and electricity generation and biofuel production
- Establishment of own tool grinding areas
- Creating different drying flows for central and side sawn timber
- Implementation of remote support systems for prompt consultations, diagnostics and maintenance of equipment

















Sawmilling equipment market trends

Middle-scale and large enterprises producing 75,000 m3 of sawn timber annually and more

2. New mills constructed by the logging companies far from the infrastructure

- Equipment: second-hand or using the technologies from the 1990s-2000s with minimal optimization; can be manufactured or shipped to Russia in a minimum time and does not require qualified personnel
- Use of circular sawing equipment
- As part of the enterprise, several specialized small or medium sawmill lines can be used
- Waste disposal with thermal energy generation. Depending on the distance from the transport infrastructure, production of biofuels is also possible
- Possibility of further line modernization
- Sawn timber is mostly dried only to 18-20% humidity

Sawmilling equipment market trends

Small mills producing up to 30,000 m3 of sawn timber annually

- Lots of small enterprises based on a single bandsaw or circular saw and edging equipment with an annual production volume of up to 10,000 m3
- Russian-made sawmilling lines
- Imported vertical bandsaws used as first-pass log cutting equipment
- Circular sawing equipment is predominantly used for sawmilling
- Disposal of waste with thermal energy generation
- Production of fuel briquettes or, much rarer, of pellets
- Deliveries mainly for the domestic market; sawn timber of natural or 18-20% humidity

Plywood production

Plywood production volumes in Russia are limited by resources available and stay stable

General development trends of large enterprises

- Investments in modern information technologies that allow to identify bottlenecks, keep track of working hours and predict possible equipment failures (among other things, with telemetry)
- Modernization of equipment to improve the efficiency of raw materials use, including computer vision; veneer sorting by quality, humidity and density; introduction of combined technologies of spindle and spindle-free peeling, which allows to increase the yield, maintain high productivity and involve thin logs







Plywood production

Small enterprises typically use Russian equipment or acquire economy-class Chinese lines which were earlier considered only as final core peelers





Chipboard and fiberboard production

As with plywood production, small enterprises typically acquire economy-class Chinese equipment.

Large mills might be interested in buying the whole range of machines to decrease or stop formaldehyde emissions and to increase water resistance of panels. Also, there is high interest in panel density evaluation systems at every stage of production. This is due to the growing share of low-quality wood with decay and cut under the age of ripeness, which leads to declining durability of products.

Expert assessment of technological challenges in chipboard production

1. Reduction of panel toxicity
2. Reduction of resin consumption during the production
3. Reduction of panel swelling
4. Intensification of the hot pressing process
5. Reducing the consumption of wood raw materials
6. Processing of low-quality wood
7. Warping of panels
8. Unstable humidity of dry chips
9. Attributing special properties (bio- and fire resistance, electromagnetic protection)
10. Reduction of liquid absorption by panel surface
11. Dust and resin spots on the panel surface
12. Under-grinding

Challenges are listed in descending order of importance
Research has been completed by V.V. Vasilyev in the St. Petersburg State Forestry Technology Academy
Source: http://spbftu.ru/wp-content/uploads/2020/03/230-12.pdf

Biofuels production

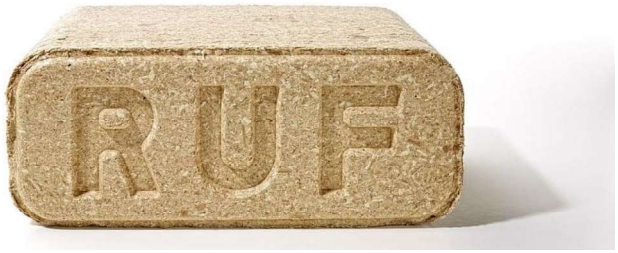


Resources for the biofuel industry are available

Constraining factors:

- Lack of the domestic pellet market
- High cost of briquettes compared to firewood against the background of low purchasing capacity
- Mistakes in choosing technologies in terms of Russian economy
- Low prevalence of torrefaction and carbonation technologies

0.5 - 1 t/hour



2-3 t/hour



Over 1.5 t/hour



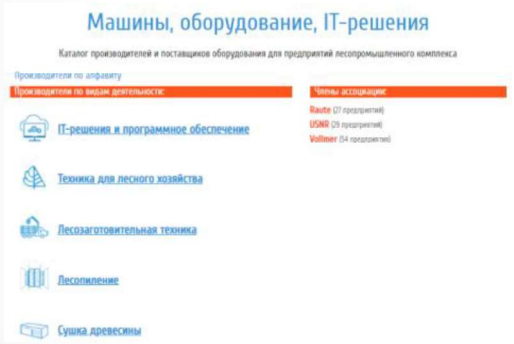
LESTECH: Russian Timber Industry Machinery & Equipment Producers Association

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