

# **Market Statement of the Slovak Republic**

**to the 78<sup>th</sup> session of the ECE Committee on Forests and Forest Industry (COFFI),  
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**Ministry of Agriculture and Rural Development of the Slovak Republic  
National Forest Centre – Forest Research Institute Zvolen, October 2020**

## 1. General economic trends affecting the forest and forest industries sector (brief description)

Basic national and sectoral macro-economic indicators, including the overview of most important forest sector indicators in 2019 are given in Table 1-1. The growth of the Slovak economy continued also in 2019. The value of Gross Domestic Product (GDP) rose at current prices by 5.1% to €94.17 billion. The main reason for GDP growth was foreign demand, and personal consumption was also risen, particularly in the services sector. Sectoral GDP constituted 0.69% of national GDP.

Growth of investment at a national level by 8.0% was influenced especially by the growth of the Slovak economy and drawing on funds EU. Investments into forest estate and production operations totalled €61 million, representing a 27.1% increase from the previous year. At a national level, the percentage of sectoral investment increased from 0.25 to 0.30% of national investment. The sectoral workforce decreased by 0.55% as compared to 2018. Average monthly earnings of employees in economy of the SR increased year-on-year by 7.8% while in forest sector by 10.6%.

**1-1 Trends of selected indicators in forestry and its comparison with Slovak national economy**

Indicator	Unit	Year				
		2010	2015	2017	2018	2019
GDP in current prices	billion €	68.09	79.76	84.52	89.61	94.17
Of that: Forest Sector		0.39	0.57	0.61	0.62	0.65
Increment of GDP	%	6.2	4.6	4.3	6.0	5.1
Investment in current prices	mil. €	14,396	18,918	17,899	18,765	20,274
Of that: Forest Sector		41	51	52	48	61
Employment	thous. persons	2,170	2,267	2,372	2,420	2,450
Of that: Forest Sector		23.3	21.4	19.6	18.0	17.9
Average monthly salary	€	769	883	954	1,013	1,092
Of that: Forest Sector		632	868	914	980	1,084
Value-added labour productivity		27,543	29,099	32,304	33,485	34,407
Of that: Forest Sector		13,102	19,414	18,986	22,200	17,239

## 2. Policy measures taken in your country over the past 18 months

The Program Statement of the Government of the Slovak Republic from April 2020 adopted a strategy for rebuilding of the management in most forests towards "closer to nature" concept. During this election period, the government is committed to increase the share of the forests managed in accordance with principles of close to nature management. The instrument of reconstruction should be the management measures and procedures in line with the Pro Silva concept. The result should be stable forests with a balanced ecological, environmental, economic and social aspect. Reconstruction of Slovak forestry towards "closer to nature" should be a long-term process, which, however, is "necessary and cannot be postponed without devastating impact". Therefore "closer to nature management" becomes the basic strategy of the state in forest management.

The above-mentioned reconstruction will effectively support the adaptation of forests to climate change and their contribution to sequestration of atmospheric carbon, calamity resistance, as well as species, age and biotope diversity. Their erosion control, water-retaining and soil-forming functions will be strengthened and, in accordance with the results of epidemiological

studies on the beneficial effect of forests on strengthening immunity, their health and hygiene function - which is particularly relevant today. The important wood production function of forests will also be preserved to a sustainable extent, where the share of higher quality assortments is to be increased.

A state forest "eco-fund" is to be established to support close to nature management and ecological functions. Frameworks for the creation of pilot markets for selected forest ecosystem services should be prepared. Mentioned measures should increase the efficiency of forestry activities, especially the working professions, whose supply and quality are currently critically low. The eco-fund should also support the introduction of modern technology as well as the construction of forest roads meeting strict environmental criteria, which are a necessary condition for the closer to nature management.

Additional sectoral funding, in line with the government's "Value for Money" project, also reflects "New generation EU" measures to revive the economy and transform it into a green, digital and resilient economy. The following areas have been identified that require additional funding: Mitigation of forest enterprise losses due to catastrophic beetle bark outbreaks; Improving the existing forest road network; Improvement of machines and technologies used in forests sector; Improving water retention measures in the sector.

### **3. Market drivers**

Slovakia is an open economy and its development depends on demand in foreign markets, especially the EU markets. This fact was the reason also for economic growth in previous years up to 2019. Next development will depend on the post-COVID19 situation and in the development of demand in the markets of major trading partners. These factors will also affect the area of wood production and processing in Slovakia.

It will be needed to secure realization of relevant goals and measures above mentioned action plans for implementation of National programme of utilization of wood potential (NPUWP) as well as National Forest Program (NFP). In particular to implement measures to increase the competitiveness of the wood processing sector, focusing mainly on the development of higher added value sectors and those where there is a negative trade balance, such as the production of veneers (mainly non-coniferous), the production of fibreboard and Oriented Strand Board (OSB) boards, components for wooden houses, secondary paper products, and recycled paper processing.

In order to achieve a higher quality and degree of finalization of wood processing, it is also necessary to provide support for investment in production technologies also from public sources. Investment in technologies will contribute to higher added value production and higher wood finishing in domestic conditions, but also to increase labour productivity and competitiveness.

Therefore, it is also necessary to encourage the domestic processing of raw wood and sawnwood; to reduce timber exports, in particular by increasing the capacities of the domestic wood processing industry, in particular in the field of high quality wood processing and improving the consumer-supply relations. It is necessary to encourage the arrival of an investor into the processing capacity of the higher quality hardwood (non-coniferous sawnwood).

## 4. DEVELOPMENTS IN FOREST PRODUCTS MARKETS SECTORS

### a. Wood raw materials

#### *Timber supply*

In 2019, the total supply of raw timber reached a volume of 8.96 million m<sup>3</sup>. Timber sale is the most important source of earnings to preserve forest functions and maintain employment in the forest sector. It provides approximately 80% of the revenue and earnings for forest managing enterprises. In addition to the forest sector, timber is also a basic raw material for the timber processing industry (TPI), thus securing employment, earnings and revenue also in this sector of the national economy.

Table 4a.1 Log grade structure of softwood raw timber supply – **SOFTWOOD**

Grade	Slovakia	Export	Own con- sumption	Total	Percentage of grades (%)
	Thousand m <sup>3</sup>				
I grade logs	0.12	0	0	0.12	0
II grade logs	5.70	0	0	5.70	0.11
III grade logs	2,941.92	58.93	59.96	3,060.81	57.14
Paper-pulp & abrasive timber	10.62	0.00	0.00	10.62	0.20
Mining timber	7.67	7.61	0.00	15.28	0.29
Thin poles	4.95	0.00	0.21	5.16	0.10
Pulpwood	1,439.16	14.76	7.59	1,461.51	27.29
Energy wood	71.53	0.00	7.08	78.60	1.47
Fuelwood	246.23	0.85	3.02	250.10	4.67
Stumpage	246.94	11.97	1.25	260.16	4.86
Raw trunks	189.93	17.58	0.79	208.30	3.89
<b>Total</b>	<b>5,164.76</b>	<b>111.70</b>	<b>79.89</b>	<b>5,356.35</b>	<b>100</b>
Percentage (%)	96.4	2.1	1.5	100	-
State sector					
I and II grade logs	0.43	0	0	0.43	0.02
III grade logs	1,500.86	12.96	1.08	1,514.90	56.64
Pulpwood	796.87	1.85	0.56	799.27	29.88
Energy wood and fuelwood	103.75	0.00	6.61	110.36	4.13
Stumpage	160.99	0.00	0.00	160.99	6.02
Raw trunks	62.57	2.78	0.17	65.51	2.45
Other grades	15.48	7.61	0.17	23.26	0.87
<b>Total of state sector</b>	<b>2,640.95</b>	<b>25.21</b>	<b>8.58</b>	<b>2,674.73</b>	<b>100</b>
Percentage (%)	98.8	0.9	0.3	100	-
Non-state sector					
I and II grade logs	5.39	0	0	5.39	0.20
III grade logs	1,441.05	45.97	58.89	1,545.91	57.65
Pulpwood	642.30	12.91	7.03	662.23	24.70
Energy wood and fuelwood	214.00	0.85	3.49	218.34	8.14
Stumpage	85.96	11.97	1.25	99.17	3.70
Raw trunks	127.36	14.81	0.62	142.79	5.32
Other grades	7.75	0.00	0.04	7.79	0.29
<b>Total of non-state sector</b>	<b>2,523.81</b>	<b>86.50</b>	<b>71.31</b>	<b>2,681.62</b>	<b>100</b>
Percentage (%)	94.1	3.2	2.7	100	-

Table 4a.2 Log grade structure of softwood raw timber supply – **HARDWOOD**

Grade	Slovakia	Export	Own consumption	Total	Percentage of grades (%)
	Thousand m <sup>3</sup>				
I grade logs	2.82	1.39	0	4.22	0.12
II grade logs	10.97	5.70	0.01	16.67	0.46
III grade logs	1,233.59	115.81	7.31	1,356.71	37.68
Mining timber	5.60	0.21	0.00	5.80	0.16
Thin poles	2.04	0.00	0.54	2.58	0.07
Pulpwood	1,727.56	158.20	3.86	1,889.62	52.48
Energy wood	45.04	0.00	5.15	50.19	1.39
Fuelwood	213.94	1.76	5.04	220.74	6.13
Stumpage	41.36	0.28	0.15	41.79	1.16
Raw trunks	12.08	0.00	0.12	12.20	0.34
<b>Total</b>	<b>3,295.00</b>	<b>283.34</b>	<b>22.19</b>	<b>3,600.52</b>	<b>100.00</b>
Percentage (%)	91.5	7.9	0.6	100	-
State sector					
I and II grade logs	5.14	1.93	0	7.07	0.32
III grade logs	957.76	51.61	5.57	1,014.95	46.11
Pulpwood	957.66	52.04	0.91	1,010.61	45.91
Energy wood and fuelwood	135.64	0.00	7.17	142.81	6.49
Stumpage	17.06	0.28	0.00	17.34	0.79
Raw trunks	0.00	0.00	0.12	0.12	0.01
Other grades	7.57	0.21	0.54	8.32	0.38
<b>Total of state sector</b>	<b>2,080.83</b>	<b>106.07</b>	<b>14.31</b>	<b>2,201.21</b>	<b>100.00</b>
Percentage (%)	94.5	4.8	0.7	100.0	-
Non-state sector					
I and II grade logs	8.65	5.16	0.01	13.82	0.99
III grade logs	275.83	64.20	1.74	341.77	24.42
Pulpwood	769.90	106.16	2.95	879.01	62.82
Energy wood and fuelwood	123.35	1.76	3.02	128.12	9.16
Stumpage	24.31	0.00	0.15	24.45	1.75
Raw trunks	12.08	0.00	0.00	12.08	0.86
Other grades	0.07	0.00	0.00	0.07	0.00
<b>Total of non-state sector</b>	<b>1,214.16</b>	<b>177.27</b>	<b>7.87</b>	<b>1,399.31</b>	<b>100</b>
Percentage (%)	86.7	12.7	0.6	100	-

Table 4a.3 Structure of supply by softwood and hardwood assortments and total (thousand m<sup>3</sup>)

Supply	Slovakia	Export	Own consumption	Total
Softwood	5,164.76	111.70	79.89	5,356.35
Hardwood	3,295.00	283.34	22.19	3,600.52
<b>Total</b>	<b>8,459.76</b>	<b>395.04</b>	<b>102.08</b>	<b>8,956.87</b>

In 2019, domestic timber supply totalled 8.56 million m<sup>3</sup> (including own consumption by forest enterprises themselves). In supplies of softwood log grades, 57.1% of the total volume were III grade logs and 27.3% was pulpwood. Hardwood supplies has long been dominated by pulpwood which accounted for 52.5% of the total volume in 2019.

More detailed data on timber supply are given in Tables 4a.1-3 and Figures 4a.1-4.

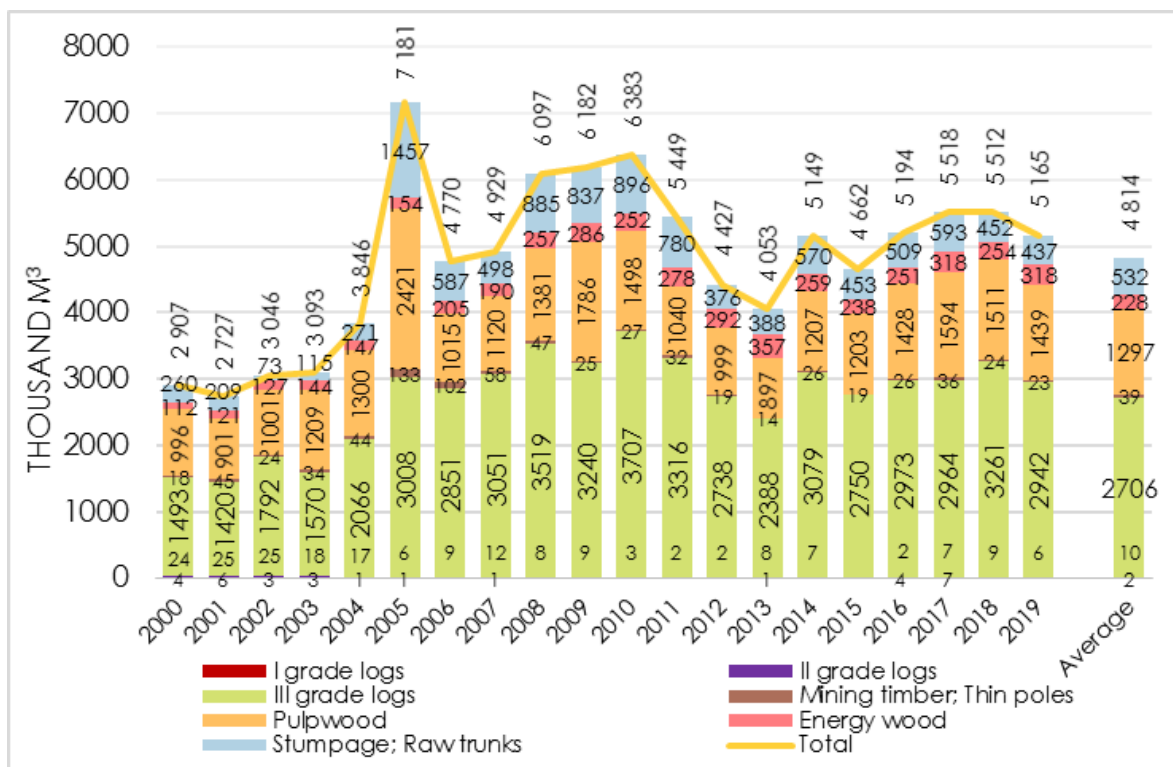


Figure 4a.1 Development of domestic supplies of softwood by the grade of assortment without own consumption and export (thousand m<sup>3</sup>)

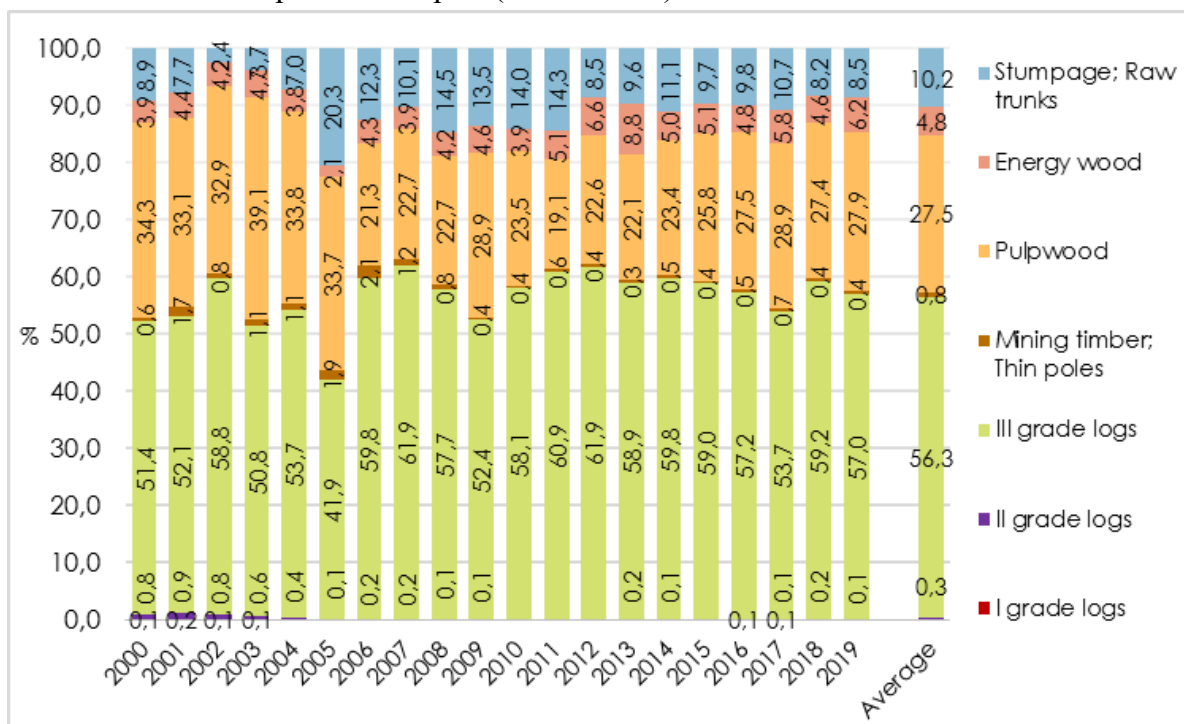


Figure 4a.2 Development of domestic supplies of softwood by the grade of assortment without own consumption and export (%)

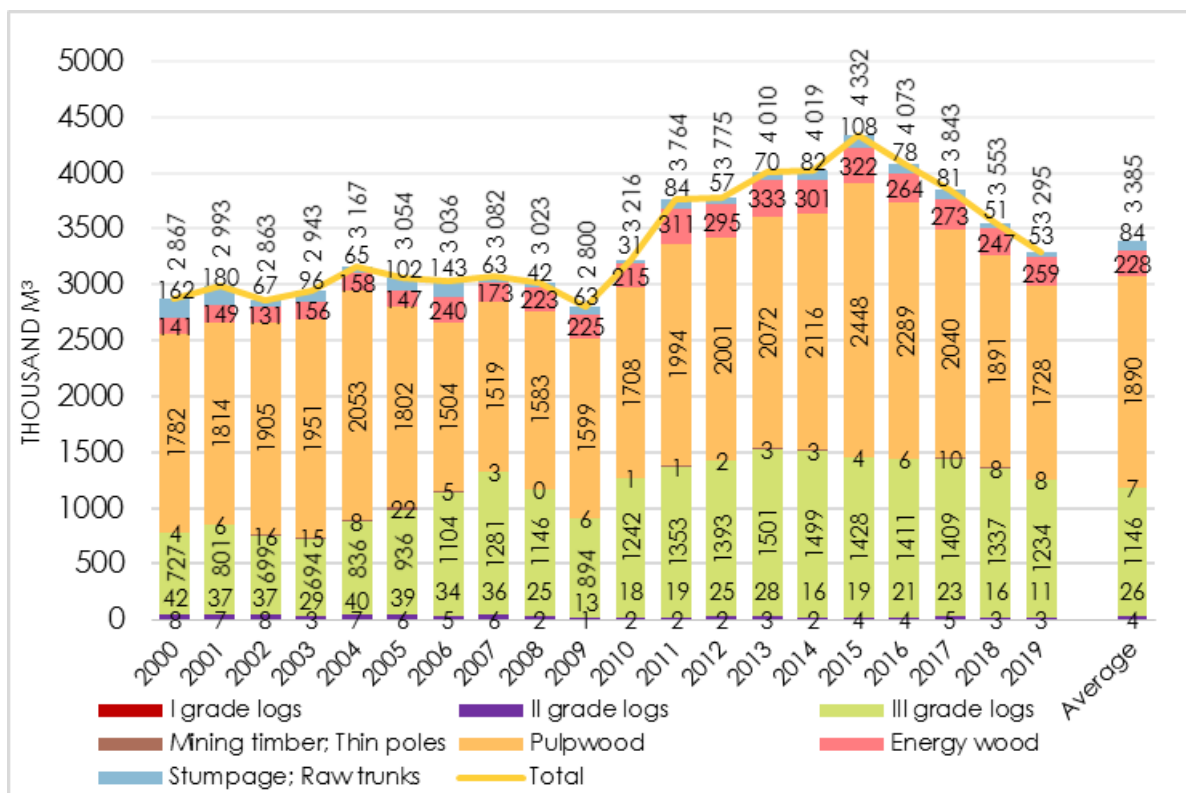


Figure 4a.3 Development of domestic supplies of hardwood by the grade of assortment without own consumption and export (thousand m³)

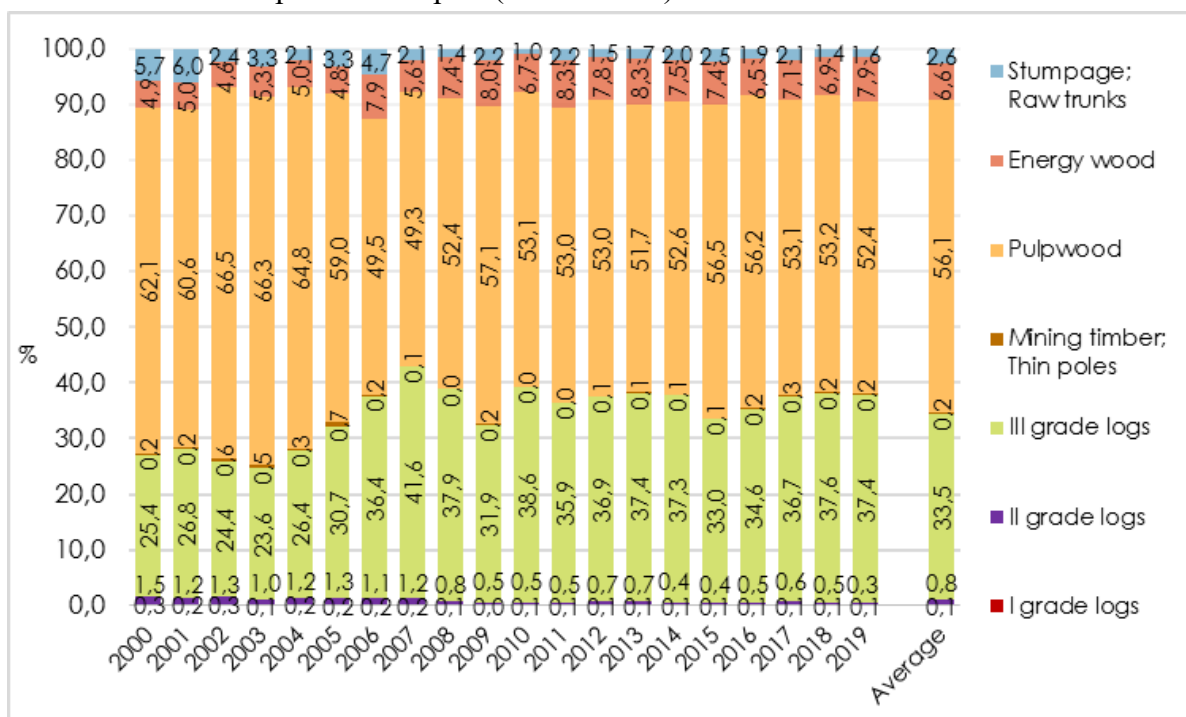


Figure 4a.4 Development of domestic supplies of hardwood by the grade of assortment without own consumption and export (%)

### Foreign timber trade

Preliminary data on foreign trade statistics show that 1.75 million m<sup>3</sup> of raw timber was exported in 2019 (Figure 4a.5). This figure represented the lowest export volume in the last 13 years. Forest enterprises exported 395 thousand m<sup>3</sup>, or 22% of the total export volume. The remaining 78% were exported by various non-forestry entities, commercial companies in particular. Timber was mainly supplied to the EU countries (Czech Republic, Austria, Poland, Hungary and Italy). Of the exported log grades, softwood IV-V log grades were most represented (812 thousand m<sup>3</sup>).

In 2019, 1.62 million m<sup>3</sup> of raw timber were imported to Slovakia (Figure 4a.6). This figure represented the highest import volume since 2003. The positive fact is that this increase was mainly attributed to an increased volume of I-III log grades of softwood and hardwood being imported.

In trading of raw timber log grades we can observe a positive trend of reducing the volume of exported timber whilst increasing the volume of imported higher quality log grades.

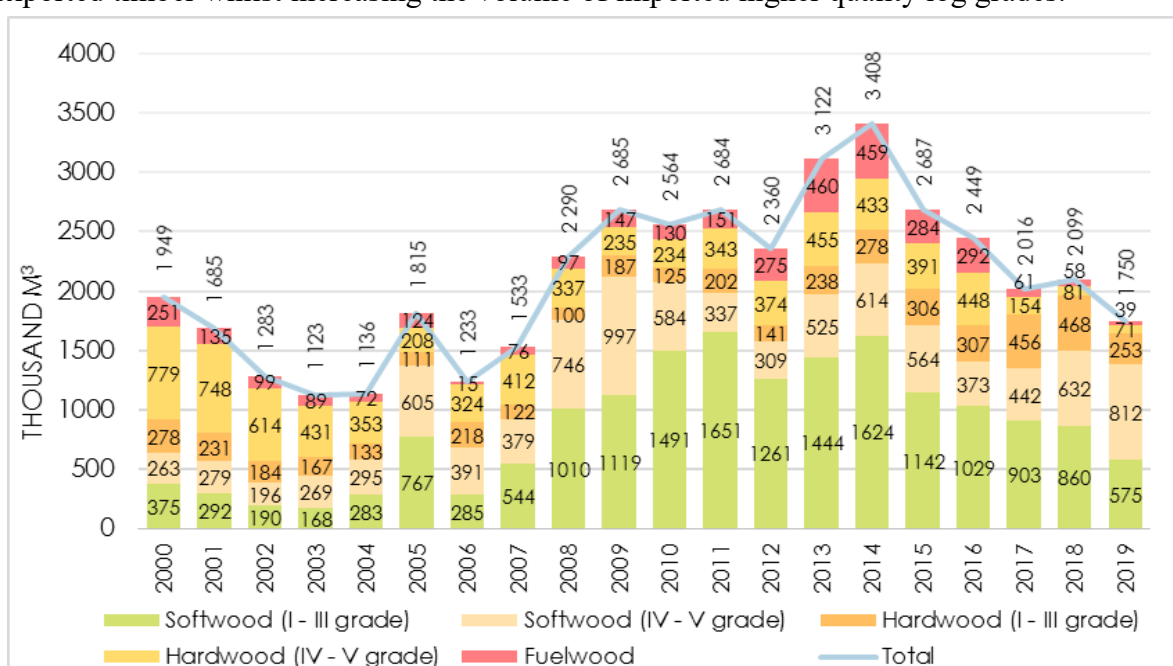


Figure 4a.5 Development of timber export (thousand m<sup>3</sup>)



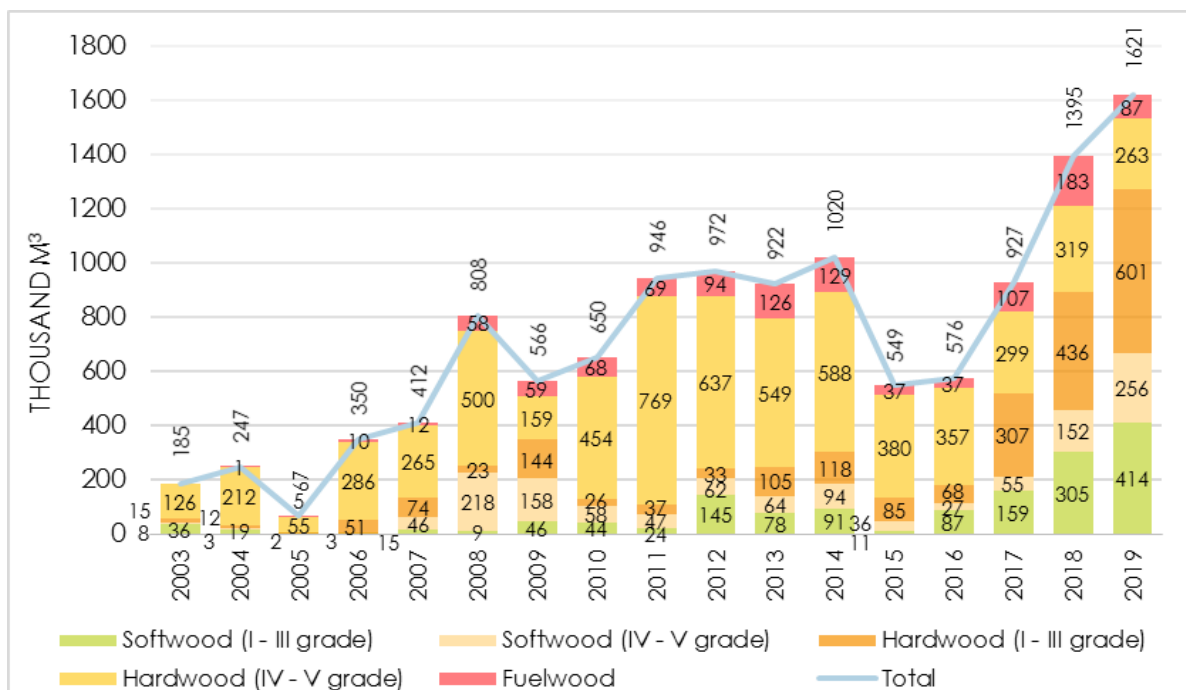


Figure 4a.6 Development of timber import (thousand m<sup>3</sup>)

### Timber prices

In 2019, the average price of hardwood in forestry of the SR was 54.67 €/m<sup>3</sup> and softwood fell to 43.51 €/m<sup>3</sup>. The average price due to the fall in the prices of softwood in 2019 decreased by 1.66 €/m<sup>3</sup>, resp. 3.4%, to a value of € 47.47/m<sup>3</sup>. The situation in the development of average hardwood prices is improving, which has been rising every year since 2015. On the contrary, the softwood prices have been decreasing since 2012 from the amount of 53.8 €/m<sup>3</sup> to the current 43.51 €/m<sup>3</sup> (Figure 4a.7). With regard to the development of the bark beetle calamity in the surrounding countries and the effects of the COVID-19 pandemic, a more significant decrease in the average prices of raw wood can be expected in the future as well.

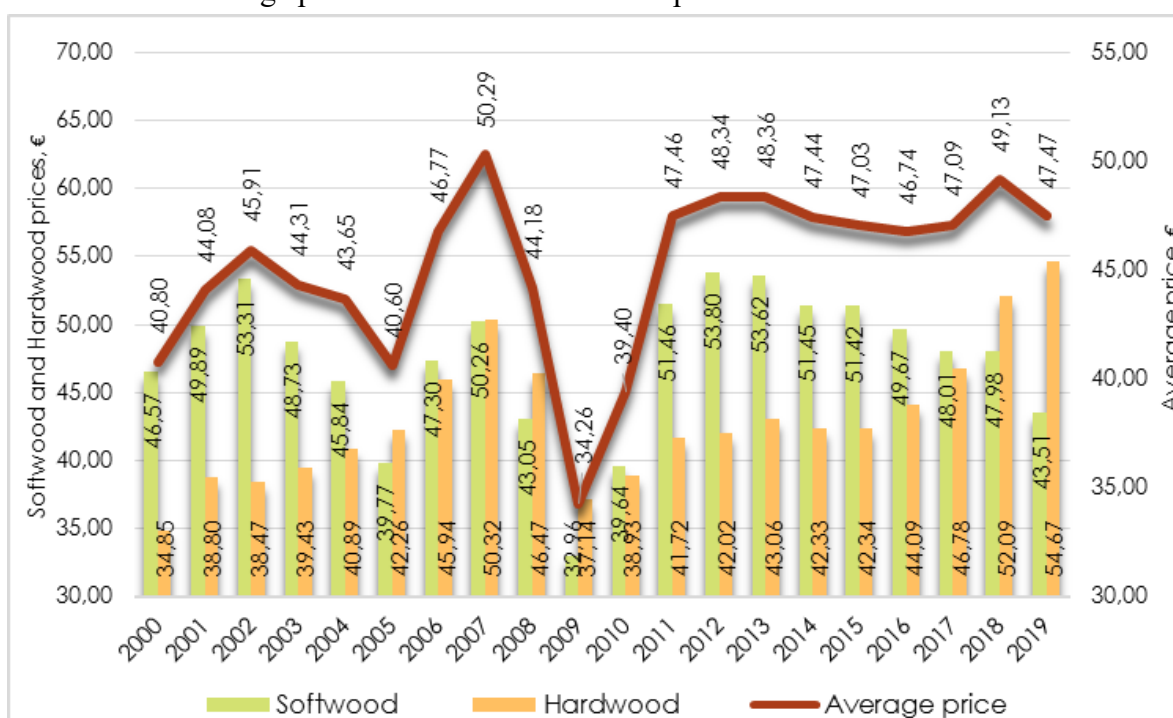


Figure 4a.7 Development of softwood, hardwood and average prices in forestry of the SR

## b. Wood energy, with a focus on government policies promoting wood energy

In 2019, the total supply of fuelwood biomass from forestry operations reached 1.37 million tonnes. Compared to 2018, it decreased by 40,000 tonnes. The supply of wood chips decreased by 30,000 tonnes. The supply of fuelwood decreased by 10,000 tonnes. Compared to 2015, when the volume of supplied fuelwood biomass was the highest (1.45 million tonnes), the volume fell by 5.5%. The decrease was chiefly caused by stagnating domestic consumption and lower demand for forest wood chips compared to wood chips from timber processing industry and chips from non-forest land due to their higher production costs. Another contributing factor was the change in the consumption of fuelwood with the timber processing industry increasing its consumption using its own wood-processing residue. Wood chips from forestry operations are supplied by private companies producing them or by business companies who buy and then resell them.

In 2019, the total consumption of solid fuelwood biomass (fuelwood, wood chips, fine-grained and lump residues from wood processing, briquettes and pellets) reached 2.89 million tonnes. Compared to the previous year, it decreased by 40,000 tonnes.

The percentage of forest fuelwood biomass decreased from 48.1% of the total woody fuels consumption to a current 47.4%. The main consumers of fuelwood biomass, which is the dominant renewable energy source in Slovakia, are companies in the timber processing and pulp and paper industries, the general population, central heat sources and the energy sector. The heat produced is mainly used for heating and industrial purposes. The share of wood fuels in the total consumption of primary energy sources in Slovakia decreased from 1.9% to 1.8%. The reasons for the decline in consumption are mainly the impact of global warming, rationalisation measures in heat consumption, stagnation in the construction of new heat sources, and the impact of the amendment to Act No. 309/2018 Coll. on renewable energy sources.

As a result of the decrease in the production and consumption of forest woody fuels and biomass, the economic situation of forest owners and forest enterprises has deteriorated. The situation is further worsened by a significant decrease in the prices of softwood log grades, while the prices of wood for energy use are slightly increasing. At present, approximately 50% of the usable fuelwood biomass on forest land is not utilised. It is wood unsuitable for mechanical and chemical processing, the occurrence of which is related to the high extent and frequency of natural disturbances in forests and subsequent incidental felling, mainly in coniferous (spruce) forests. This increases the potential volumes of available hardwood (less felling in broadleaved forests), the log grade structure of which includes a higher proportion of fuelwood biomass. This situation is not in line with the Integrated National Energy and Climate Plan for 2021-2030, which set the goal of increasing the share of renewable energy sources to 19.2% compared to approximately 11.5% at the moment.

Table 4b.1 Woody biomass for energy production

Year	Chips <sup>1)</sup>		Fuelwood and others <sup>2)</sup>		Total	
	1,000 tonnes	TJ	1,000 tonnes	TJ	1,000 tonnes	TJ
2019	530	5,035	840	7,980	1,370	13,015
2018	560	5,320	850	8,075	1,410	13,395
2017	580	5,510	845	8,028	1,425	13,538
2016	610	5,795	830	7,885	1,440	13,680
2015	615	5,843	835	7,933	1,450	13,776
2010	250	2,375	695	6,602	945	8,977
2005	120	1,140	640	6,080	760	7,220
2000	5	48	471	4,475	476	4,523
1990	2	19	368	3,496	370	3,515

Note: <sup>1)</sup> Chips and woody biomass for the production of chips; <sup>2)</sup> Fuelwood and wood used for energy from woody residue, felling debris and dead trees.

### c. Certified forest products

Under the both PEFC and FSC schemes, 1.294 million ha of forests, or 66.4% of the total forest area in Slovakia, were certified at 31 December 2019; of that under PEFC scheme it was 1.216 million ha. To date, 273 certificates have been issued on participation in forest certification under the PEFC and FSC schemes; of that 263 under PEFC. The PEFC Slovakia had 22 members at 31 December 2019 in three chambers: Forest Owner (Lessee) Chamber, Chamber of Timber Processors and the Chamber of Other Stakeholders.

In 2019 the number of Chain-of-Custody certified companies was 128, of that 10 according to FSC.

Table 4c-1 Area and share of certified forests by PEFC and FSC

Forest certification schemes	Area and share of certified forests (ha / %)				Number of issued certificates
	Certification by one scheme	Doubled certification (both PEFC and FSC)	Total	Share of the forest area	
PEFC	1,085,569	130,398	1,215,967	62,36	263
FSC	78,254		208,652	10,70	10
Total	1,163,823	130,398	1,294,221	66,37	273

Source: PEFC Slovensko, 2020; FSC, Facts & Figures, January 2020.

Table 4c-2 Area and share of forest certified by PEFC according to forest users/managers

Kind of forest users / managers	Forest area (ha)		Share of PEFC certified forests (%)		Number of certificates
	Forest area used/managed	Of that certified by PEFC	Within the user	According to the users	
State	1,000,522	996,221	99.57	81.93	148
Private	162,964	36,220	22.23	2.98	40
Community	597,834	72,034	12.05	5.92	47
Church	16,706	0	0	0	0
Agri-cooperative	7,156	0	0	0	0
Municipal	164,799	111,489	67.65	9.17	28
Total PEFC	1,949,983	1,215,966	62.36	100.00	263

### d. Timber processing industry

In 2019, demand for timber products continued to grow on international markets. This trend was also reflected in an increased volume of domestic timber processing, an increase in imports of raw timber, including higher quality log grades, and a lower volume of exported timber.

The total volume of domestic timber processing reached 8.828 million m<sup>3</sup> (7.207 million m<sup>3</sup> of homegrown timber and 1.621 million m<sup>3</sup> of imported timber) which was 71,000 m<sup>3</sup> less than in 2018.

Since 2016, a positive trend has been observed in the annual increase of domestic consumption of more valuable softwood and hardwood logs of I-III grade, with a decrease in the consumption of lower quality softwood and hardwood logs of IV-V grade that was particularly noticeable in 2019. Consumption of fuelwood has not changed in the last three years.

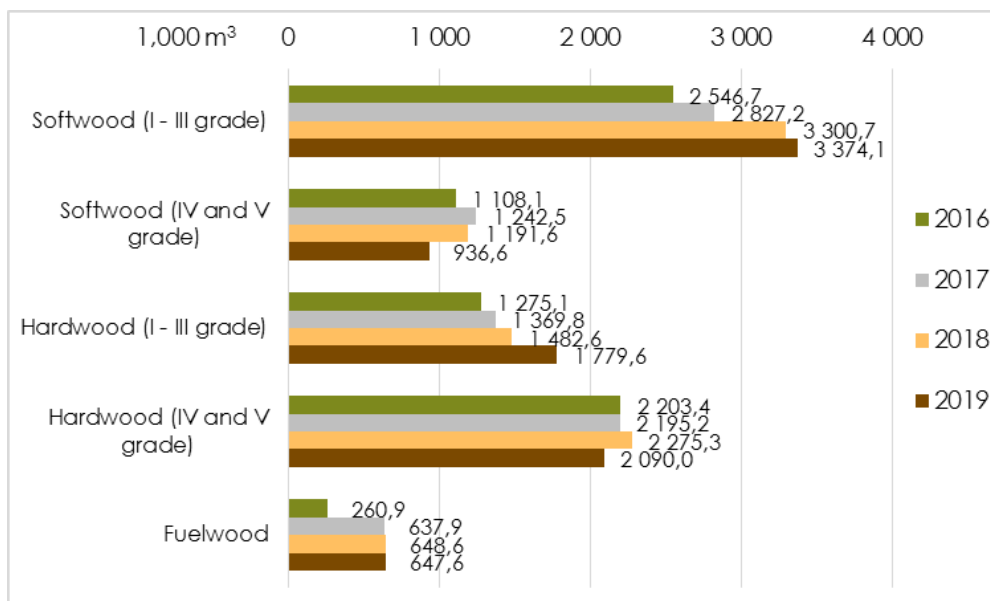


Figure 4.d-1 Domestic consumption of raw timber

Source: NFC 2016-2019, Quarterly timber supply statistics Les D (MARD SR) 2-04, Statistical Office of SR – data for 2016-2019; preliminary data for 2019.

A sectoral statistical survey for 2019, which also included enterprises with less than 20 employees, put timber processing industry (TPI) revenue at €3.684 million. At the same time, there were 32,184 jobs in the industry. The pre-tax profit was €149 million in 2019.

Despite the positive development of economic indicators and growth in the volume of domestic timber processing, there was no significant increase in the competitiveness of the majority of mechanical timber processing companies and in the growth of added value. Due to a lower efficiency of timber processing, domestic enterprises are mostly subcontractors supplying unfinished products with a lower level of finalisation to foreign companies. Only a small percentage of top quality roundwood (I-II grade) is currently being processed in Slovakia. The annual domestic volumes of these grades are approximately 8.7% for hardwoods and 7.5% for softwoods. Except for a few multinational companies operating in Slovakia, no significant investments in the modernisation of processing facilities have been made. There is a continuing demand in Slovakia for softwood roundwood and hardwood pulp, which is partly covered by imports.

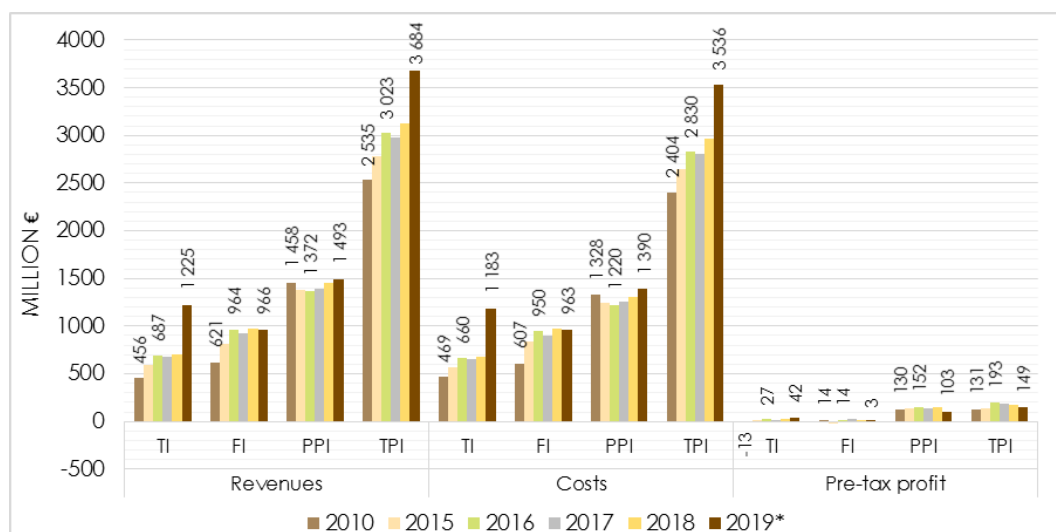


Figure 4d-2 Selected sectoral economic parameters

Source: Ministry of Economy of SR 2010, SO SR 2014 -2019 (Record Prod 3-04 and Prod 13-04); \*) 2018 data is preliminary and includes also statistical Prod 13-04 data for small enterprises.

Note: TI - Timber industry, PPI - Pulp and paper industry, FI - Furniture-making industry, TPI - Timber processing industry. Figures are given for the years 2010, 2016 and 2019.

Missing processing capacities, particularly for hardwood logs of I-III grade and softwood logs of I-II grade, are a consequence of developments in the sector after 1989 and the persistent lack of funding for their expansion. After 1989, there was a sharp decrease in the TPI production figures (only 46% of the 1989 volume in 1993). Large facilities for the processing of hardwood roundwood (Zvolen, Pezinok, Vranov nad Topľou, Žarnovica) were closed or transformed into significantly smaller processing units. At present, less than 500,000 m<sup>3</sup> of hardwood sawlogs and only a fraction of the best quality roundwood timber is processed in Slovakia. The production of high value added timber products such as sliced and peeled veneer, plywood and fibreboard for the furniture industry is almost non-existent at the moment. A lack of financial resources and investment in the majority of domestic sawmills producing sawlogs, their insufficient technological infrastructure (both in terms of quality and capacity) and a lack of modern innovative processes all limit substantial improvements in the existing processing capacity of these sawmills. Larger and medium-size multinational sawmills operating in Slovakia do not have similar problems.

On the other hand, the pulp and paper industry is one of the best performing sectors of the national economy. A total of eleven producers represented in the Union of Pulp and Paper Industry of the Slovak Republic cover 100% of paper production and most of the production of goods in the entire industry. Pulp is produced in Mondi SCP in Ružomberok, the largest integrated mill producing pulp and paper in Slovakia, and in Bukóza Holding Group in Hencovce. Metsa Tissue Slovakia and SHP Harmanec are the largest processing facilities of waste paper in Slovakia.

Slovak timber processing industry has processing capacities that are sufficient for processing the entire volume of softwood harvested in the country. Their structure, size and distribution are influenced by developments before 1990 and the establishment of new operations in the last two decades. The largest sawmills processing softwood roundwood in Slovakia include Rettenmeier Tatra Timber s.r.o. Liptovský Hrádok, PRP s.r.o. Tomášovce, Amico Drevo s.r.o. Oravský Podzámok, P.F.A s.r.o. Lozorno and Spektrum s.r.o. Hliník nad Hronom.

Analyses of preliminary data on 2019 customs statistics show that the current trade balance of the forest sector and timber processing industry reached a surplus of €846.89 million in 2018. The trade surplus in the export of raw timber (€63.29 million), sawnwood (€134.61 million) and waste paper (€21.93 million) is considered negative. Similarly undesirable is a negative trade balance in the production of veneer (€14.29 million), where hardwood veneer in particular is widely imported, and secondary paper products (€21.64 million) with imports of cardboard, packaging and specially treated papers. A positive sign is the trade surplus in the category of products with high added value, such as panels (€60.41 million) - we export plywood and particleboard, but import oriented strand board (OSB) and fibreboard, pulp and paper (€169.54 million) and secondary timber products (€388.63 million) - we export mainly joinery, furniture and other timber products.

Based on the above trade balance, the main priority for the development of the forest-timber processing sector should be the modernisation of existing equipment and technological processes to increase productivity and competitiveness of timber processing units. The timber processing industry as a whole is forced to respond to changes in demand on the European market by innovation of its processes and products and adjustments of its production structure. It is important to support further development of industries with high value added products, especially those with a negative trade balance such as veneer production (hardwood in particular), fibreboard and oriented strand board (OSB) production and industries involved in the production of secondary paper products and processing of waste paper.

An important environmental aspect of timber production and its use is the fact that timber and wood products, especially those with a long lifespan, are able to sequester CO<sub>2</sub> for decades. Increasing the amount of carbon stored in timber and wood products is an internationally widely recognised measure to mitigate climate change. Therefore, it is important and desirable to use timber and wood for the widest possible range of purposes and for as long as possible in a variety of products. Carbon from wood is released back into the atmosphere only when products become waste or fuel. In 2018, 3.009 million tonnes of CO<sub>2</sub> was stored in timber and wood products. At the same time, 2.108 million tonnes of CO<sub>2</sub> was released into the atmosphere from obsolete timber and wood products no longer in use. The overall balance is thus positive as the volume of CO<sub>2</sub> bound in timber and wood products has increased by 0.9 million tonnes.

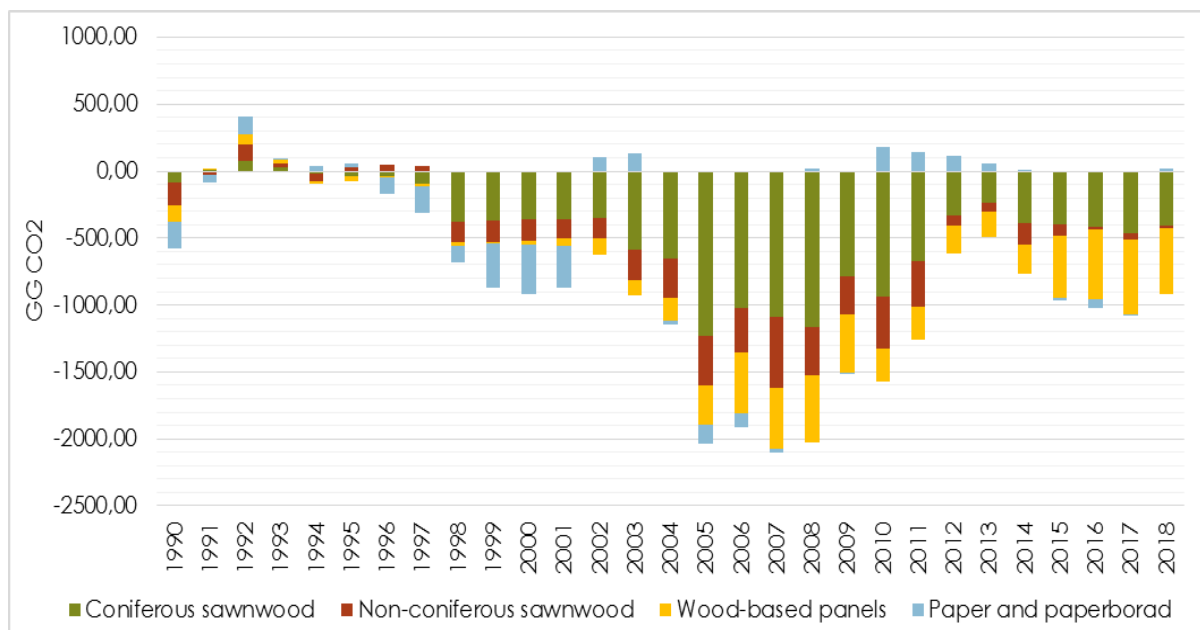


Figure 4d-3 Balance of mass of "capture" and "emissions" of CO<sub>2</sub> (in Gg CO<sub>2</sub> eq.) in main categories of wood and timber products

Source: Forestry Case Studies 69/2019.

Note: "Capture" represents CO<sub>2</sub> bound in wood and timber products with a delayed release into the atmosphere with a negative value in the balance; "emissions" represent volumes of CO<sub>2</sub> released into the atmosphere from used up wood and timber products with a positive value in the balance.

#### e. Sawn softwood

5.C	SAWNWOOD, CONIFEROUS	1,000 m <sup>3</sup>	2018	2019	2020 estimate	2021 forecast
	Production		1,300	1,263	1,250	1,225
	Imports		303	292	300	315
	Exports		794	847	800	775
	Apparent consumption		808	708	750	765

The highest volumes of coniferous sawnwood were imported from the Russian Federation and the Ukraine. Exports were mainly directed to EU.

#### f. Sawn hardwood

5.NC	SAWNWOOD, NON-CONIFEROUS	1,000 m <sup>3</sup>	2018	2019	2020 estimate	2021 forecast
	Production		430	390	400	400
	Imports		27	132	50	60
	Exports		149	126	140	150
	Apparent consumption		308	396	310	310

Import and export of sawnwood realizes mainly in EU markets.

#### g. Wood-based panels (particle board, fibreboard and MDF, OSB, plywood)

- Veneer sheets

7	VENEER SHEETS	1,000 m <sup>3</sup>	2018	2019	2020 estimate	2021 forecast
	Production		18	18	20	20
	Imports		22	19	20	20
	Exports		13	10	10	10
	Apparent consumption		27	26	30	30

- Plywood

8.1	PLYWOOD		2018	2019	2020 estimate	2021 forecast
	Production	1,000 m <sup>3</sup>	472	453	450	450
	Imports		75	71	75	75
	Exports		132	129	125	125
	Apparent consumption		415	395	400	400

- Particle board

8.2	PARTICLE BOARD		2018	2019	2020 estimate	2021 forecast
	Production	1,000 m <sup>3</sup>	630	652	650	650
	Imports		246	237	240	240
	Exports		610	638	630	630
	Apparent consumption		266	251	260	260

- Fibreboard

8.3	FIBREBOARD		2018	2019	2020 estimate	2021 forecast
	Production	1,000 m <sup>3</sup>	0	0	0	0
	Imports		233	220	225	225
	Exports		38	22	25	25
	Apparent consumption		195	198	200	200

## h) Pulp and paper

9	WOOD PULP		2018	2019	2020 estimate	2021 forecast
	Production	1,000 m <sup>3</sup>	686	653	665	665
	Imports		150	159	160	160
	Exports		220	230	225	225
	Apparent consumption		616	582	600	600

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12	PAPER & PAPERBOARD		2018	2019	2020 estimate	2021 forecast
	Production	1,000 m <sup>3</sup>	839	806	820	820
	Imports		443	434	440	440
	Exports		651	649	650	650
	Apparent consumption		632	591	610	610

## 5. STATE AND DEVELOPMENT IN WOOD RAW PRODUCTION POTENTIAL IN SLOVAKIA

The area of forests growing on forest land in Slovakia is 1,949.98 thousand ha. In addition to forests on forest land there is about 288±39 thousand ha of forests on the non-forest land (agricultural, other) that were identified within the National Forest Inventory and Monitoring (NFIM) of the SR 2015-2016. The forest cover in Slovakia including forests on non-forest land is more than 45%. The volume of growing stock according to the data of Forest Management Plans was 483.0 mill. m<sup>3</sup> in 2019. The volume of growing stock has been increasing in the long term – as compared to 2000 and 2010 it has increased by 17.8% and 4.5% respectively in 2019 (Figure 5-1). The main reason for this increase is the current uneven age composition of forests with over-normal share of forests older than 70 years (age classes: 8th and higher) (Figure 5-2). The present increasing trend is caused mainly by the development of growing stock of

broadleaved tree species volume of which is still rising. The volume of coniferous growing stock has been decreasing since about 2010 (Figure 5-1). Volume of growing stock by age classes and tree species in 2019 is depicted in Figure 5-3 and development of growing stock by age classes in Figure 5-4.

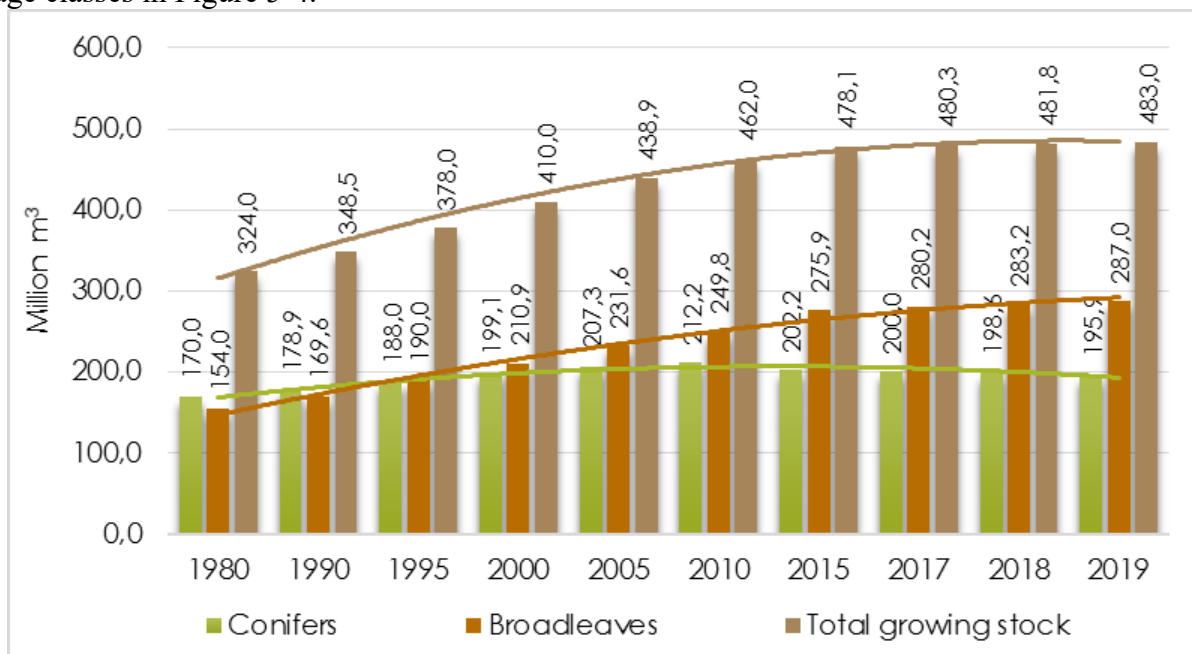


Figure 5-1 Total growing stock by groups of tree species (conifers, broadleaves) and per ha

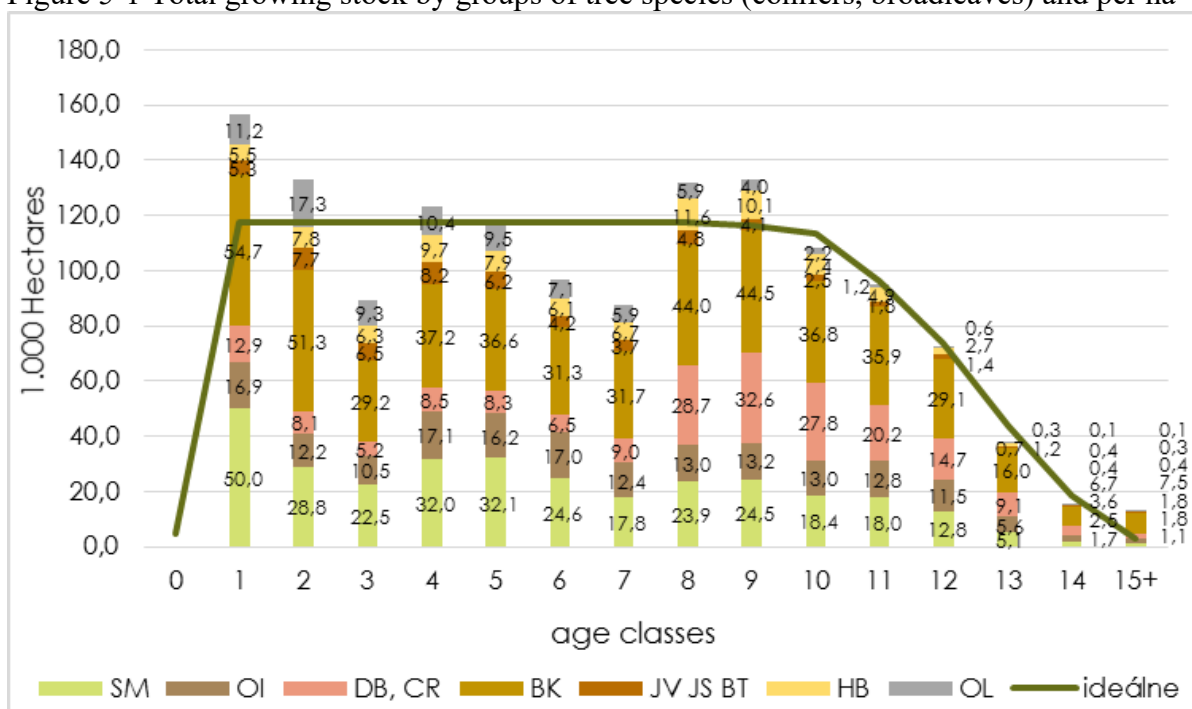


Figure 5-2 Proportion of age classes by tree species in commercial forests and its comparison to normal (ideal) area of age classes (2019)

Notes: SM – Norway Spruce, OI – Other conifers, DB – English/Sessile oak, CR – Turkey oak, BK – European beech, JV – Maples, JS – European ash, BT – Elms, HB – Hornbeam, OL – Other broadleaves



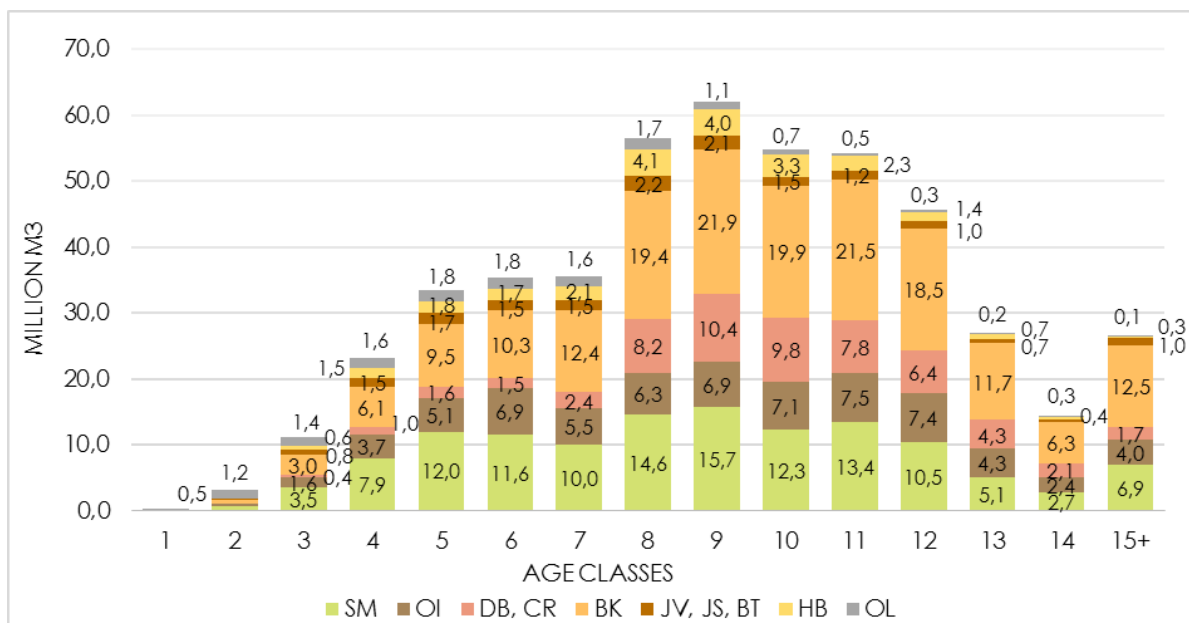


Figure 5-3 Volume of growing stock in all forests (commercial, protection and special purpose) by age classes and tree species (2019)

Notes: SM – Norway Spruce, OI – Other conifers, DB – English/Sessile oak, CR – Turkey oak, BK – European beech, JV – Maples, JS – European ash, BT – Elms, HB – Hornbeam, OL – Other broadleaves

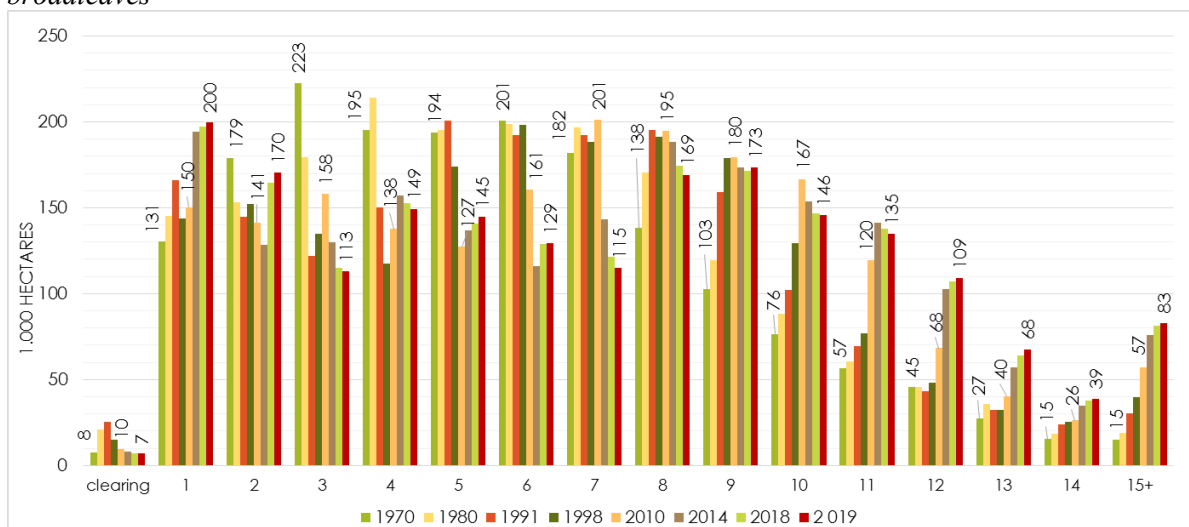


Figure 5-4 Development of growing stock by age classes since 1980

Due to the current state and development of forests in Slovakia we can observe some important facts:

- 1) gradual increase of planned felling (blue columns in the Figure 5-5) mainly because of the current uneven age composition;
- 2) permanently higher volume of actual felling (green columns) till 2010 as compared with the planned felling mainly because of high volume of incidental felling (red columns);
- 3) lower volume of actual felling as compared to the volume of total current increment (green line) (Figure 5-5).

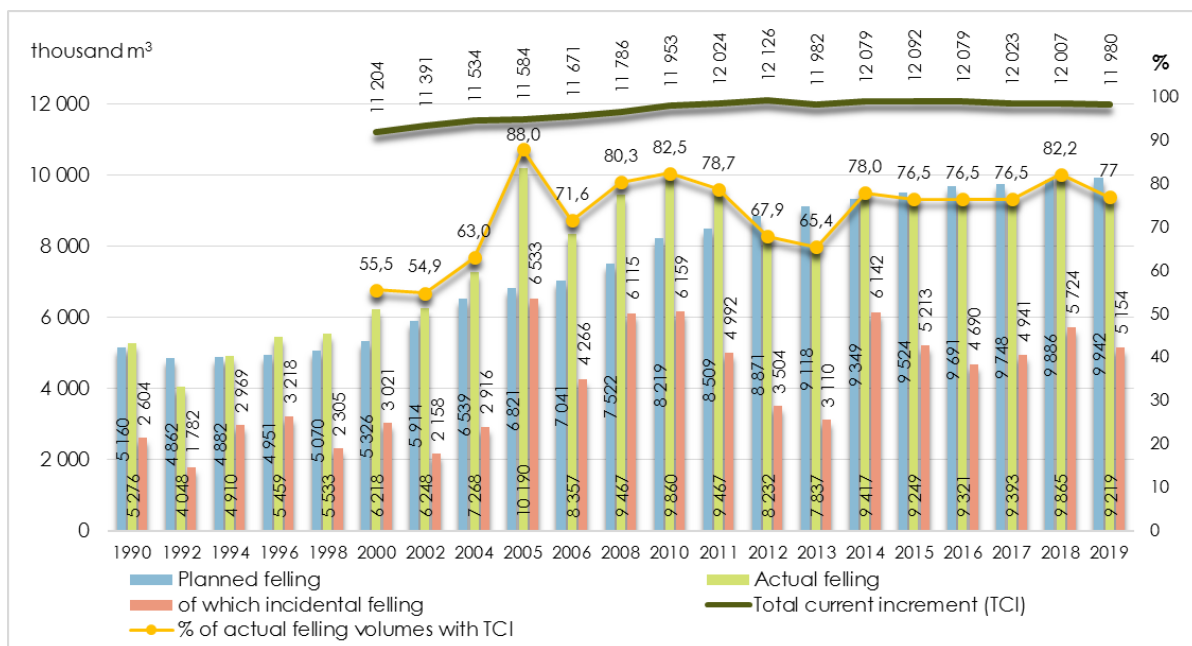


Figure 5-5 Trends in timber felling divided to „planned“, „actual“, of which „incidental“, compared to the „total current increment“ (TCI)

Prognosis of timber felling is shown in Figure 5-6. It nearly approaches to 9 million m<sup>3</sup> annually until 2035.

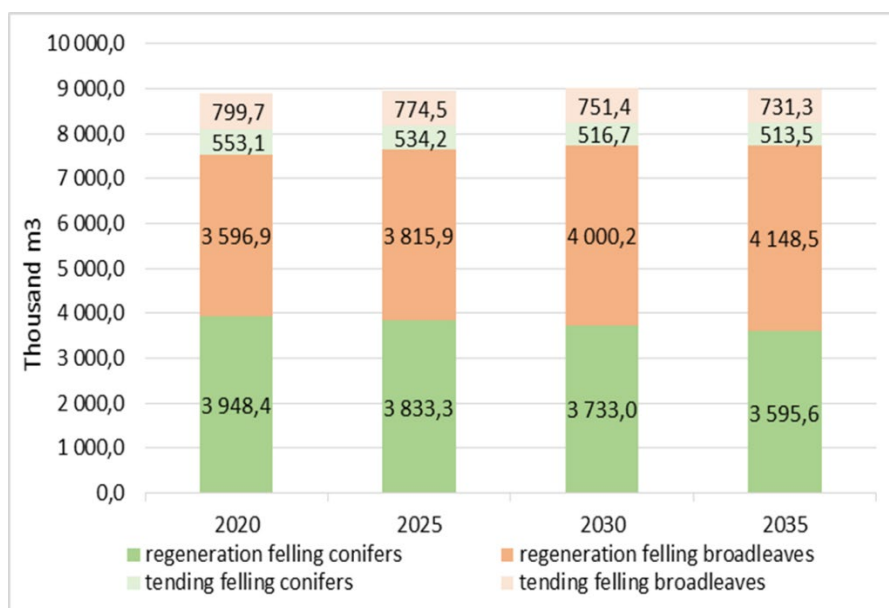


Figure 5-6 Prognosis of timber felling divided to „regeneration“ and „tending“ and by main groups of tree species: „conifers“ and „broadleaves“

Figure 5-7 illustrates the development of incidental fellings in Slovakia since 1960, broken down by groups of damaging agents that clearly demonstrates high frequency and intensity of damaging agents to which are forests exposed over the last 15-20 years.

It can be seen from the figure that if the wood damaged by abiotic damaging agents, in particular wind, is not thoroughly removed and the forest hygiene is not achieved, it will inevitably result in the damage caused by biotic damaging agents, in particular insects.

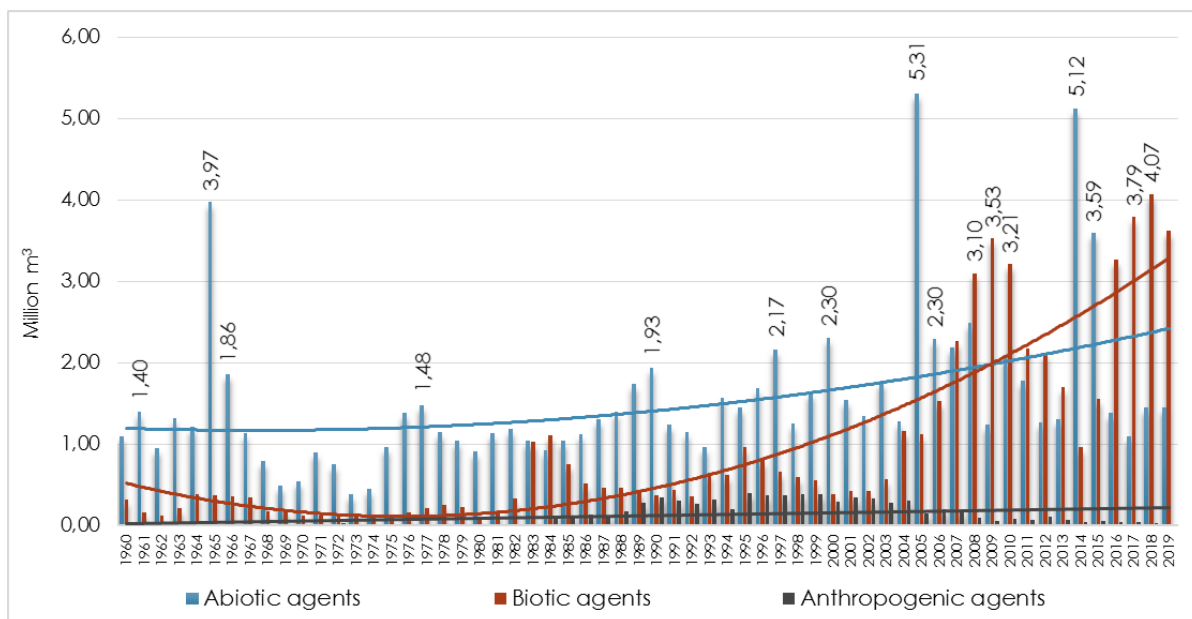


Figure 5-7 Development of the incidental fellings (thousand m<sup>3</sup>) according to main groups of damaging agents

Source: National Forest Centre; Forest Protection Service, 2019

**UNECE****TF1****TIMBER FORECAST QUESTIONNAIRE**  
**Roundwood**

<b>Country:</b> Slovakia	<b>Date:</b> 16. 09. 2020
<b>Name of Official responsible for reply:</b> Martin Moravčík	
<b>Official Address (in full):</b> National Forest Centre - Forest Research Institute Zvolen; T. G. Masaryka 22; 96092 Zvolen; Slovakia	
<b>Telephone:</b> +421 45 5314181	<b>Fax:</b>
<b>E-mail:</b> <a href="mailto:martin.moravcik@nlcsk.org">martin.moravcik@nlcsk.org</a>	

Product Code	Product	Unit	Historical data		Revised	Estimate	Forecast
			2018	2019	2019	2020	2021
1.2.1.C	<b>SAWLOGS AND VENEER LOGS, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	3 856	3 535	3 535	3 350	3 300
	Imports	1000 m <sup>3</sup> ub	305 #	300 #	414	450	500
	Exports	1000 m <sup>3</sup> ub	860 #	850 #	575	500	475
	Apparent consumption	1000 m <sup>3</sup> ub	3 301	2 985	3 374	3 300	3 325
1.2.1.NC	<b>SAWLOGS AND VENEER LOGS, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	1 515	1 432	1 432	1 750	1 775
	Imports	1000 m <sup>3</sup> ub	436 #	400 #	601	500	450
	Exports	1000 m <sup>3</sup> ub	468 #	450 #	253	450	400
	Apparent consumption	1000 m <sup>3</sup> ub	1 483	1 382	1 780	1 800	1 825
1.2.1.NC.T	<b>of which, tropical logs</b>						
	Imports	1000 m <sup>3</sup> ub	0 #	0 #	0	0	0
	Exports	1000 m <sup>3</sup> ub	0 #	0 #	0	0	0
	Net Trade	1000 m <sup>3</sup> ub	0	0	0	0	0
1.2.2.C	<b>PULPWOOD (ROUND AND SPLIT), CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	1 647	1 462	1 462	1 300	1 300
	Imports	1000 m <sup>3</sup> ub	152 #	175 #	256	300	250
	Exports	1000 m <sup>3</sup> ub	632 #	500 #	812	700	700
	Apparent consumption	1000 m <sup>3</sup> ub	1 167	1 137	906	900	850
1.2.2.NC	<b>PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	2 029	1 890	1 890	2 200	2 225
	Imports	1000 m <sup>3</sup> ub	319 #	315 #	263	300	300
	Exports	1000 m <sup>3</sup> ub	81 #	150 #	71	100	100
	Apparent consumption	1000 m <sup>3</sup> ub	2 267	2 055	2 082	2 400	2 425
3	<b>WOOD CHIPS, PARTICLES AND RESIDUES</b>						
	Domestic supply	1000 m <sup>3</sup>	1 305 C	1 270 C	1 270	1 250	1 225
	Imports	1000 m <sup>3</sup>	425 C	316 C	316	350	350
	Exports	1000 m <sup>3</sup>	679 C	474 C	474	500	500
	Apparent consumption	1000 m <sup>3</sup>	1 052	1 112	1 112	1 100	1 075
1.2.3.C	<b>OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	24	31	31	20	25
1.2.3.NC	<b>OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	8	8	8	10	10
1.1.C	<b>WOOD FUEL, CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	262	329	329	280	275
1.1.NC	<b>WOOD FUEL, NON-CONIFEROUS</b>						
	Removals	1000 m <sup>3</sup> ub	261	271	271	290	290


Please return (preferably by e-mail) to Timber Section no later than 11 September 2020.

By e-mail to [stats.timber@un.org](mailto:stats.timber@un.org).

Questions? Please contact Alex McCusker at the above address or telephone +41 22 917 2880.

The historical data are from the most recent Joint Forest Sector Questionnaire (blank) or the Timber Forecast Questionnaire (#). For explanations please see cover letter.

These data are flagged with E, R, N or C for secretariat estimate, repeat, national estimate or calculated totals (from subitems). If there is no flag, this indicates officially supplied data.

 <b>UNECE</b>  <b>TF2</b> <b>TIMBER FORECAST QUESTIONNAIRE</b> <b>Forest products</b>		Country: Slovakia		Date: 16.09.2020	
		Name of Official responsible for reply: Martin Moravčík			
		Official Address (in full):			
		National Forest Centre - Forest Research Institute Zvolen; T. G. Masaryka 22; 96092 Zvolen; Slovakia			
		Telephone: +421 45 5314181 Fax:			
		E-mail: <a href="mailto:martin.moravcik@nlcsk.org">martin.moravcik@nlcsk.org</a>			

Product Code	Product	Unit	Historical data		Revised 2019	Estimate 2020	Forecast 2021
			2018	2019			
6.C	SAWNWOOD, CONIFEROUS						
	Production	1000 m <sup>3</sup>	1 300	1 263		1 250	1 225
	Imports	1000 m <sup>3</sup>	303	292		300	315
	Exports	1000 m <sup>3</sup>	794	847		800	775
	Apparent consumption	1000 m <sup>3</sup>	808	708		750	765
6.NC	SAWNWOOD, NON-CONIFEROUS						
	Production	1000 m <sup>3</sup>	430	390	390	400	400
	Imports	1000 m <sup>3</sup>	27	50 E	132	50	60
	Exports	1000 m <sup>3</sup>	149	126	126	140	150
	Apparent consumption	1000 m <sup>3</sup>	308	314	396	310	310
6.NC.T	of which, tropical sawnwood						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	0	0		0	0
	Exports	1000 m <sup>3</sup>	0	0		0	0
	Apparent consumption	1000 m <sup>3</sup>	0	0		0	0
7	VENEER SHEETS						
	Production	1000 m <sup>3</sup>	18 C	18 C		20	20
	Imports	1000 m <sup>3</sup>	22 C	19 C		20	20
	Exports	1000 m <sup>3</sup>	13 C	10 C		10	10
	Apparent consumption	1000 m <sup>3</sup>	27	26		30	30
7.NC.T	of which, tropical veneer sheets						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	5	5		5	5
	Exports	1000 m <sup>3</sup>	0	0		0	0
	Apparent consumption	1000 m <sup>3</sup>	5	4		5	5
8.1	PLYWOOD						
	Production	1000 m <sup>3</sup>	472 C	453 C		450	450
	Imports	1000 m <sup>3</sup>	75 C	71 C		75	75
	Exports	1000 m <sup>3</sup>	132 C	129 C		125	125
	Apparent consumption	1000 m <sup>3</sup>	415	395		400	400
8.1.NC.T	of which, tropical plywood						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	2	1		2	2
	Exports	1000 m <sup>3</sup>	0	0		0	0
	Apparent consumption	1000 m <sup>3</sup>	2	1		2	2
8.2	PARTICLE BOARD (including OSB)						
	Production	1000 m <sup>3</sup>	630	652		650	650
	Imports	1000 m <sup>3</sup>	246	237		240	240
	Exports	1000 m <sup>3</sup>	610	638		630	630
	Apparent consumption	1000 m <sup>3</sup>	266	251		260	260
8.2.1	of which, OSB						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	82	80		80	80
	Exports	1000 m <sup>3</sup>	1	1		0	0
	Apparent consumption	1000 m <sup>3</sup>	81	79		80	80
8.3	FIBREBOARD						
	Production	1000 m <sup>3</sup>	0 C	0 C		0	0
	Imports	1000 m <sup>3</sup>	233 C	220 C		225	225
	Exports	1000 m <sup>3</sup>	38 C	22 C		25	25
	Apparent consumption	1000 m <sup>3</sup>	195	198		200	200
8.3.1	Hardboard						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	21	18		20	20
	Exports	1000 m <sup>3</sup>	1	0		0	0
	Apparent consumption	1000 m <sup>3</sup>	20	17		20	20
8.3.2	MDF/HDF (Medium density/high density)						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	125	116		120	120
	Exports	1000 m <sup>3</sup>	37	22		25	25
	Apparent consumption	1000 m <sup>3</sup>	88	94		95	95
8.3.3	Other fibreboard						
	Production	1000 m <sup>3</sup>	0	0		0	0
	Imports	1000 m <sup>3</sup>	86	87		90	90
	Exports	1000 m <sup>3</sup>	0	0		0	0
	Apparent consumption	1000 m <sup>3</sup>	86	87		90	90
9	WOOD PULP						
	Production	1000 m.t.	686 C	653 C	653	665	665
	Imports	1000 m.t.	150 C	159 C	159	160	160
	Exports	1000 m.t.	220 C	226 C	230	225	225
	Apparent consumption	1000 m.t.	616	586	582	600	600
12	PAPER & PAPERBOARD						
	Production	1000 m.t.	839 C	806 C		820	820
	Imports	1000 m.t.	443 C	434 C		440	440
	Exports	1000 m.t.	651 C	649 C		650	650
	Apparent consumption	1000 m.t.	632	591		610	610
5.1	WOOD PELLETS						
	Production	1000 m.t.	131	135		135	135
	Imports	1000 m.t.	48	45		45	45
	Exports	1000 m.t.	163	161		160	160
	Apparent consumption	1000 m.t.	16	19		20	20