

Market Statement of the Slovak Republic 2023

**to the Joint session of the ECE Committee on Forests and the Forest Industry
and the FAO European Forestry Commission – FORESTA 2023
held from 20 to 23 November 2023 in San Marino**

**Ministry of Agriculture and Rural Development of the Slovak Republic
National Forest Centre – Forest Research Institute Zvolen**

October 2023

1. General economic trends affecting the forest and forest industries sector

Basic national and sectoral macro-economic indicators, including the overview of most important forest sector indicators in 2022 are in Table 1-1.

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

Indicator	Unit	Year					
		2010	2015	2017	2020	2021	2022
GDP in current prices	billion €	68,76	80,13	84,67	93,44	100,32	109,65
of that: Forest Sector		0,39	0,57	0,62	0,60	0,72	0,91
Increment of GDP	%	6,7	5,2	2,9	-3,3	4,9	4,9
Investment in current prices	mil. €	14 453	18 971	17 896	18 210	19 254	22 331
of that: Forest Sector		41	51	52	39	39	47
Employment	thousand persons	2 170	2 267	2 372	2 399	2 385	2 427
of that: Forest Sector		23,3	21,4	19,6	16,8	16,8	16,7
Average monthly salary	€	769	883	954	1 133	1 211	1 304
of that: Forest Sector		632	868	914	1 022	1 206	1 491
Value-added labour productivity		27 543	29 099	32 304	34 356	36 299	40 277
of that: Forest Sector		13 102	19 414	18 986	13 046	18 936	24 409

The Slovak economy grew by 1.7% in 2022 as a result of the recovery after the COVID-19 pandemic. A higher recovery was mainly hindered by the energy crisis and high inflation, which causes a decrease in real incomes, and thus the recovery of consumer demand. The partial recovery of the Slovak economy also resulted in an increase in the number of jobs. Total employment in the Slovak national economy increased by 1.8% year-on-year. The average monthly nominal wage of an employee in the Slovak economy increased by 7.7% year-on-year. The growth of investments was mainly influenced by the revival and growth of the economy in the Slovak Republic. Year-on-year growth in investments was 16% and investments reached the value of 22.33 billion. € in current prices.

Table 1-2
Spring 2023 Economic Forecast (15/05/2023)

Indicator	2020	2021	2022	2023	2024
GDP growth (%)	-4,4	3,0	1,7	1,7	2,1
Inflation (%)	2,0	2,8	12,1	10,9	5,7

Slovak GDP is expected to grow by 1.7% in 2023, supported by a strong expansion of investment and by 2.1% in 2024 mainly due to a recovery in exports as supply chain bottlenecks are expected to disappear. Since the energy prices were mostly fixed in 2022, convergence with the market prices is set to push the inflation to 10.9% in 2023 and 5.7% in 2024. Core inflation remains strong, fuelled by rising prices of food and services. New measures, including those aimed at mitigating high energy prices, are projected to lead to an increase in the public deficit to 6.1% of GDP in 2023. It is then set to decrease to 4.8% as most of the measures are expected to be phased out.

Slovakia's large export-driven industry sector remains constrained by supply chain disruptions and increasing prices of inputs. In addition, Slovakia's main export markets are expected to grow at a slower pace. Both of these effects are set to reduce the contribution from export of goods to growth. At the same time, recovering consumer demand should lead to higher imports. In 2023, gradually easing supply constraints should support export growth.

Inflation continued to exceed expectations in the second quarter of 2022, driven by higher energy and food prices. Yet another sharp increase in regulated energy prices of natural gas for

households is set to drive inflation to 8.2% in 2023, following a 10.5% increase in consumer prices in 2022. Food, service and industrial good price increases are expected to persist also in 2023 but at a slower pace than in 2022. Without alleviating measures for gas prices and an agreement on price freeze for electricity, inflation in 2023 could be significantly higher.

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

On January 15, 2022, an amendment to the Nature and Landscape Protection Act was approved. On its basis, from April 1, 2022, property owned by the state, which is necessary to ensure the fulfillment of tasks according to the Act on Nature and Landscape Protection, as well as related rights and obligations, was transferred to the administration of national parks.

National parks are an important part of the national system of protected areas (PA). They are PAs declared by the Slovak government on larger territories, usually with an area of more than 10,000 ha. According to the Act on the Protection of Nature and Landscape, these should be territories with ecosystems substantially unchanged by human activity (however this condition applies only to a very limited extent in the case of Slovak National Parks) or in a unique and natural landscape structure. The law establishes the goal of NP protection, which is the preservation or gradual restoration of natural ecosystems, including ensuring the undisturbed course of natural processes on at least three quarters of the territory of the NP. This goal is to be ensured by the NP zoning. In practice, a no-intervention regime is established on at least three quarters of the territory of the National Park (i.e. the fifth level of protection). This significantly limits the management of forest stands in the National Parks and practically negates the currently valid provisions of the Nature and Landscape Protection Act on the validity of the third level of protection on the territory of the National Park, which allowed finer forms of forest management.

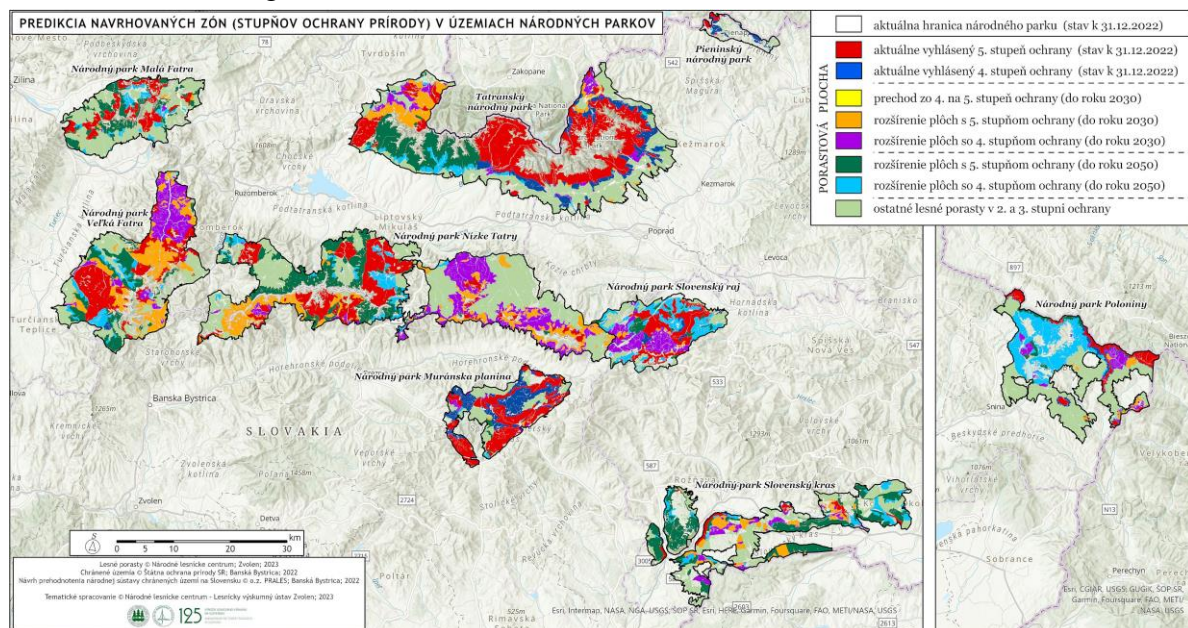


Figure 2.1 Prediction of proposed zones (protection levels - LP) in national parks territories in Slovakia (Source: PRALES, 2022: Proposal for re-evaluation of the national system of protected areas in Slovakia)

Explanatory notes: Colours: red - current non-intervention 5th LP, dark blue - current 4th LP, yellow - transition from 4th to 5th LP until 2030, orange - extension of the 5th non-intervention LP until 2030, purple - extension of the 4th LP until 2030, dark green - extension of the 5th LP until 2050, light blue - extension of the 4th LP until 2050, light green - other forest stands in the 2nd and 3rd LPs.

3. MARKET DRIVERS

a. Trends in production indicators

Forest area

The area of forest land in the SR has been long-term increasing (Figure 3a.1). According to the data of the NFC's Compendium of Slovak Forestry Statistics (CSFS), in 2022 it was 2,027,483 ha. Since 1990, it has increased by 51 thousand ha, i.e. by 2.6%, which is, on average, 1.6 thousand ha per year.

Similarly to the forest land area, the area of forest stands is also increasing steadily, reaching 1,954,760 ha in 2022 according to CSFS data (Figure 3a.1). Since 1990, the area of forest stands has increased (mainly by land use change) by 33.1 thousand ha, which 1.7% gain, with an average annual increase of 1.0 thousand ha. According to the Act no. 326/2005 Coll. on forests, as amended (the Act on Forests), forest area also includes areas temporarily without trees due to forest regeneration as part of a rotation cycle or due to salvage logging after natural disaster. Forest cover, as a percentage of the forest land area of the total area of the SR (4.903 million ha, including water bodies), reached 41.3% in 2022. It has increased by 1% since 1990, 2.2% since 1970.

In addition to forests on forest lands 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. So, forest cover in Slovakia including forests on non-forest land would be about 45.7±0.9%.

Growing stock in forests

In 2022, according to the CSFS data, the total volume of growing stock on forest land of the SR was 482.8 million m³ (stem diameter of 7 cm and more under bark). Compared to 2021, it decreased by 4.5 million m³, i.e. by 0.9%. In 2022, for the first time, there was also a decrease in the stock of hardwood to the level of 291.4 million m³, 1.4 million less than last year. The decrease in softwood stocks, which has lasted for approximately ten years, continued, reaching 191.5 million m³ in 2022, i.e. 3 million m³ less than in the previous year (Figure 3a.2). The ratio of softwood and hardwood stocks was 39.7% to 60.3%. The growing stock per hectare decreased to 248 m³. For conifers, it was 277 m³, and for broadleaves 232 m³.

The current decrease in the volume of growing stock is a natural consequence of the gradual change in the uneven age structure of forest stands of the SR, associated with the actual shift in the age classes, that are overrepresented as for the area and volume, into the age at which their gradual regeneration is ongoing (Figure 3a.3). Such an uneven age structure resulted mainly from the high level of logging in the first half of the 20th century, i.e. in the period of war conflicts and socio-economic crises, bringing along large areas of clearings. The clearings were subsequently reforested and the resulting forest stands are, at the moment, 70 to 120 years old (belonging to the overrepresented age classes 8 to 12) and, inter alia, they are also the source of the actual increased timber-felling possibilities. The development of such an uneven age structure is associated with cyclical changes in the production-environmental indicators, including growing stock.

The yearly stand inventory (CSFS) confirmed this trend based on the annual figures on the growing stock in forest stands in the SR (Figure 3a.4). In the previous five-year periods, according to CSFS data, the trend of the gradual annual development in growing stock in forest stands of the SR, which was as follows: 1991-1995: + 5.9 million m³ annually, 1996-2000: + 6.4 mil. m³, 2001-2005: + 5.8 million m³, 2006-2010: + 4.6 million m³, 2011-2015: + 3.2 million m³; 2016-2020: + 0.76 million m³, in 2021 the annual increase in growing stock was +1.4 million m³, but in 2022 there has been a decrease in the stocks of conifers, and even in

hardwoods, by -4.5 million m³ in total. The same trend as in the total growing stock was observed also in the growing stock per hectare.

The above decreasing trend in the volume of growing stocks, which culminated in 2021 at 487.3 million m³ (a historical peak for at least the last century), will continue for the several next decades. The actual age structure of our forests with a surplus area of older forest stands in the age classes 8 – 15+, in which high growing stock is accumulated, will gradually shift, especially in production forests, in favour of younger age classes with lower growing stocks, as area of age classes 1 and 2 illustrates (Figure 3a-3).

Figure 3a.5 shows the volumes and proportions of growing stocks in forests of the SR by age classes and tree species. In younger forest stands (age classes 3 to 6), most of growing stock was formed by spruce followed by beech. In the higher age classes, the stock of beech was larger than those of spruce, oak and other conifers. In all age classes except the last one (15+), the highest growing stocks were in production forests. In age class 15+, the highest stock was in protective forests, a large part of which is located in protected areas.

49.7% of the total wood stock is located in the forests managed by state organisations (hereinafter: "state forests"), the rest (50.3%) is located in the forests managed by non-state forest managers (hereinafter: "non-state forests"). In state forests, there is currently a lower proportion of softwood stock (46.9%), while the proportion of hardwood stock is higher (51.6%). Compared to state forests, in non-state forests the growing stock located in mature stands (usually age classes 10 to 14) was 15.6 million m³ higher, of which 12.9 million m³ was softwood and 2.7 million m³ hardwood. From the above figures it is obvious that there is a higher actual potential for both softwood and hardwood logging in non-state forests.

Deadwood stock in forests

Deadwood is also an important component of forest ecosystems. It should be retained in forests to the extent appropriate to their required functions. According to the second cycle of NFI, there was 87.0 ± 5.7 mil. m³ of deadwood (standing snags, stumps, lying thick and thin deadwood), which averages 45.2 ± 2.8 m³ per ha. According to the State of Europe's Forests 2020 report, the stock of standing and lying deadwood thicker than 10 cm (without stumps and thin wood up to 10 cm) in the forests of the was 28.0 m³ per ha, which is the highest volume among the countries that reported on this indicator.

Carbon stock in forests

Healthy and resilient forests are important also from the point of view of their significant role in the carbon sequestration in their biomass, deadwood and litter (necromass), and in the soil. In 2022, carbon stocks in forests in living biomass, necromass and forest soil reached the value of 507.1 million tonnes (1.82 million tonnes less than in 2021). The decrease in the stock of carbon in living aboveground and underground biomass reflects the decrease in growing stock in 2022 in forests in the SR. The largest amount of carbon is stored in soil (270.5 million tonnes) and in aboveground tree biomass (164.2 million tonnes) (Figure 3a.6). Carbon stock in forests has been increasing for a long time (similarly to growing stock). As a result of the current trend in the age structure of forests, a decrease in the amount of carbon bound in individual balance categories will continue simultaneously with the decrease in growing stock in forests.

Wood increment in forests

In 2022, the total current increment (TCI) of wood on forest land of the SR reached a volume of 11.99 million. m³, i.e. 6.22 m³ per ha. Annual TCI means the volume of wood that accrue in the forests during one year. Since 2015, a trend of an annual decrease of TCI (in total and per hectare) has been observed (despite a slight increase in TCI in 2022).

Harmful agents in forests

Abiotic harmful agents in forests

Wind, snow, rime, drought, high water table and other abiotic agents in 2022 damaged trees in forest stands with the timber volume of 696 thousand m³, of which 448 thousand m³ was softwood. Of the conifers, spruce was the most damaged (369 thousand m³) and of the broadleaves, it was beech (109 thousand m³). Wind was the most significant harmful agent (510 thousand m³). In addition to the above-mentioned volume of damaged trees in 2022, 108 thousand m³ of timber of the trees damaged by abiotic agents from the previous year was still remaining unsalvaged in the stands. During 2022, 726 thousand m³ of timber of trees damaged by abiotic agents was salvaged (including part of the remnants from previous years). The development of the wood volume of trees damaged by abiotic harmful agents is presented in Figure 3b.1.

Biotic harmful agents in forests

In 2022, the trees of the volume of 2,016 thousand m³ of timber were damaged by biotic harmful agents, of which bark beetles and other animal pests accounted 1,852 thousand m³. Including the balance from 2021 (121 thousand m³), the volume of timber of damaged trees was 2,137 thousand m³, of which 1,978 thousand m³ was salvaged. The development of the wood volume of trees damaged by biotic harmful agents is presented in Figure 3b.2.

Game is also an important biotic harmful agent contributing to damage of forest stands. In 2022, the damage to forest stands was estimated at 1.637 million. € that is 0.888 € million more than in 2021. Game damage mainly results from excessive populations of deer and wild boar and, in recent years by the expansion of fallow deer.

Measures taken against harmful agents

The main measures to protect forests against harmful agents were timely and thorough salvaging of wood of trees damaged by harmful agents, its removal from the forests, chipping, burning of woody debris and targeted application of certified pesticides and auxiliary preparations. Protective measures against game damage include mainly regulating its populations. The trend of hunting the main game species is increasing; compared to 2010, the number of red deer shot increased three times, fallow deer seven times, and wild boar by 34%. The above-mentioned measures contributed to the steadily decreasing incidence of secondary harmful agents and the damage caused by them. In 2022, the volume of salvage cuts and its share of total felling (35.1%) were the lowest during the last 20 years.

Forest fire protection

According to the records of the Fire Institute of the Ministry of the Interior of the SR, 297 forest fires were registered in 2022, with a total damaged (burnt) area of 1,210 ha (0.006% of the forest stand area) and financial loss reaches 1,197 thousand €. Compared to 2021, in which the lowest number of forest fires and the lowest burned area since 2000 was recorded, the values of indicators increased several times in 2022. The most commonly the causes of forest fires were unknown (71 cases), of known triggers, grass and brush burning (68) prevailed, followed picnic fires (32 cases). In 2022, forest fires were the most frequent in March (115 times) and July (51 times).

b. Limiting conditions of nature conservation

The European NATURA 2000 network consists of two partially overlapping sub-networks: special protection areas (SPAs) and sites of Community importance (SCIs), in which there are 955 thousand ha of forest stands. In the protected areas of the national network, approximately 790 thousand ha of forest stands are located. There are 1.16 million ha of forest stands in both national and European networks of protected areas.

Within other internationally protected areas, i.e. in the UNESCO natural heritage sites, 37,000 ha of forest stands is protected. The European and national networks overlap on approximately 775,000 ha of forest stands. As of December 31, 2022, 23 SPA's management programs were in force, the remaining 18 still awaiting approval. The area of forest stands by levels of protection and PA categories is presented in table 3.1.

According to Ministry of the Interior of the Slovak Republic, in 2022, based on 159 applications, compensations for not allowing the standard forest management were paid in the total amount of €4.459 million.

Table 3.1 Protected forest stand area by category and level of protection

Protected area category		Level of protection (1,000 ha)					Total
		1	2	3	4	5	
Protected Landscape Areas (PLAs)		0	318,3	0,1	0	0	318,4
National Parks (NPs)		0	0	168,7	0,3	0,1	169,0
Buffer zones of NPs		0	127,0	0	0	0	127,0
Zones of PLAs and NPs	A	0	0	0	0	13,6	13,6
	B	0	0	0	7,7	0	7,7
	C	0	0	29,8	0	0	29,8
	D	0	17,4	0	0	0	17,4
Small-scale Protected Areas (SSPAs)	(National) Nature Reserves ((N)NRs)	0	0	0	9,7	73,3	82,9
	(National) Nature Monuments ((N)NMs)	0	0	0	0,4	0,4	0,8
	Protected Landscape Elements (PLEs)	0	0	0	0	0	0
	Protected Sites (PSs)	0	1,1	2,9	1,2	0,2	5,4
	Buffer zones of SSPAs	0	1,0	16,5	1,4	0	19,0
Sites of Community Importance (SCIs) – outside national PA network		0	80,5	0,5	0,3	0,3	81,6
Special protection Areas (SPAs) – outside SCIs and national PA network		291,7	0	0	0	0	291,7
Total		291,7	545,3	218,5	21,0	87,9	1 164,4

Source: Ministry of Environment SR at 31 December 2022

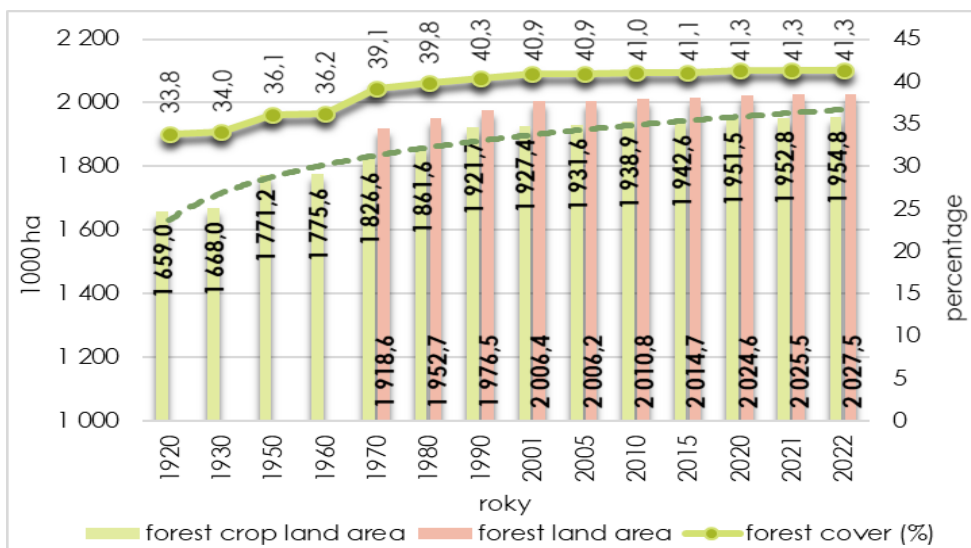


Figure 3a.1
Development of forest area and forest cover

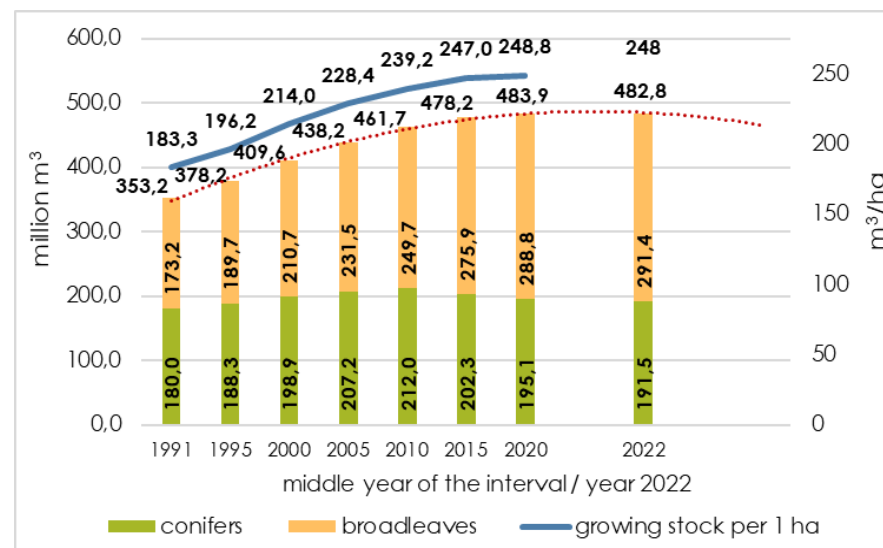


Figure 3a.2
Development of timber growing stock

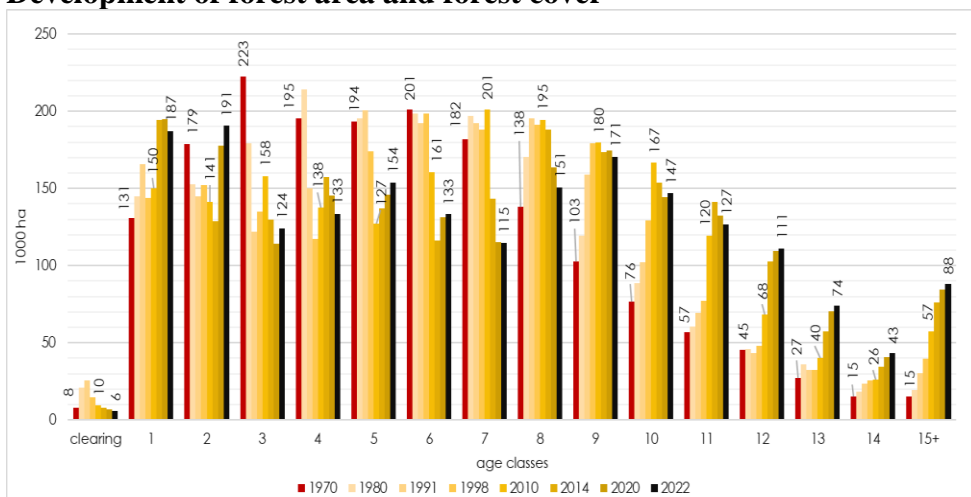


Figure 3a.3
Development of forest area by age classes

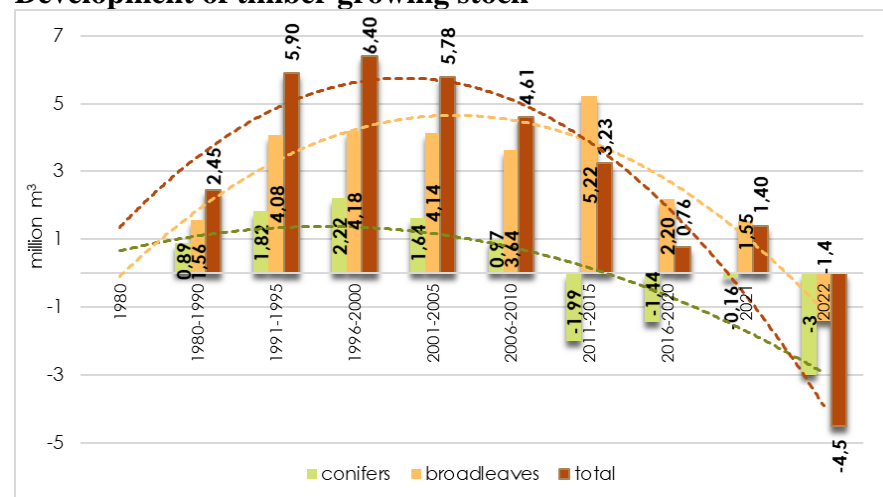


Figure 3a.4 Development of the average annual change in growing stock by the indicated periods and tree species groups

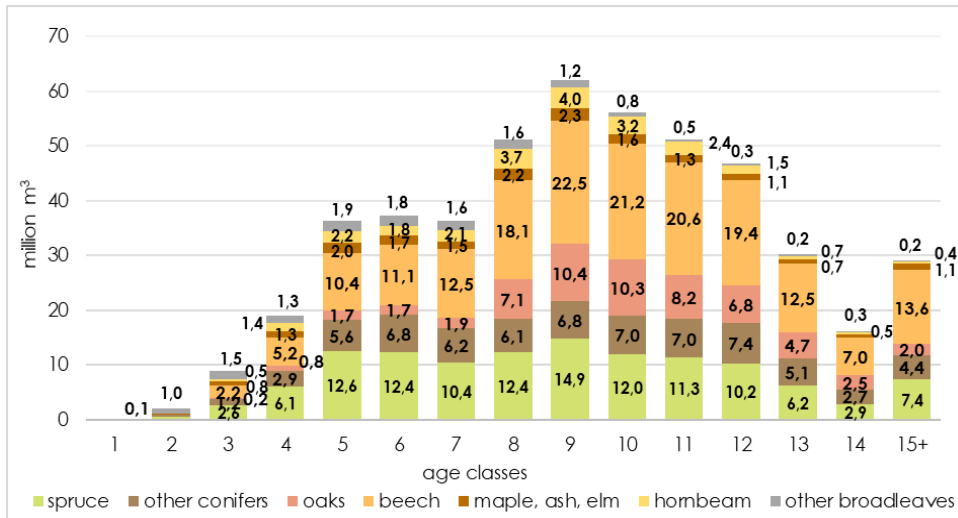


Figure 3a.5
Growing stock by age class and tree species

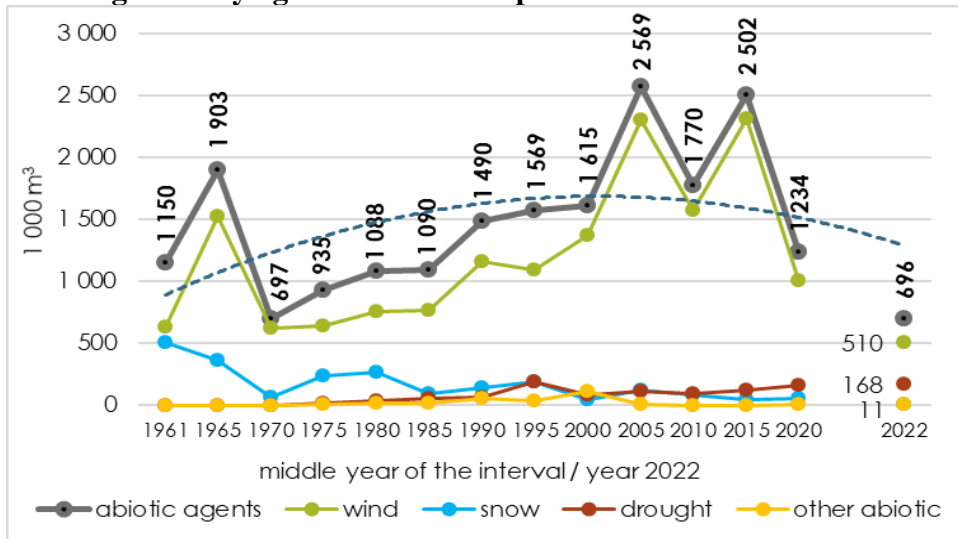


Figure 3b.1
Volume of trees damaged by abiotic agents

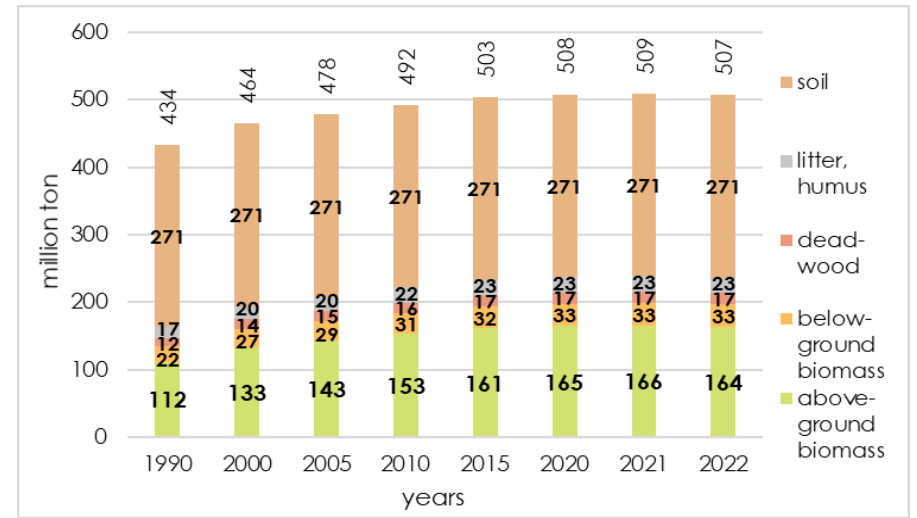


Figure 3a.6
Development of carbon stock in forests

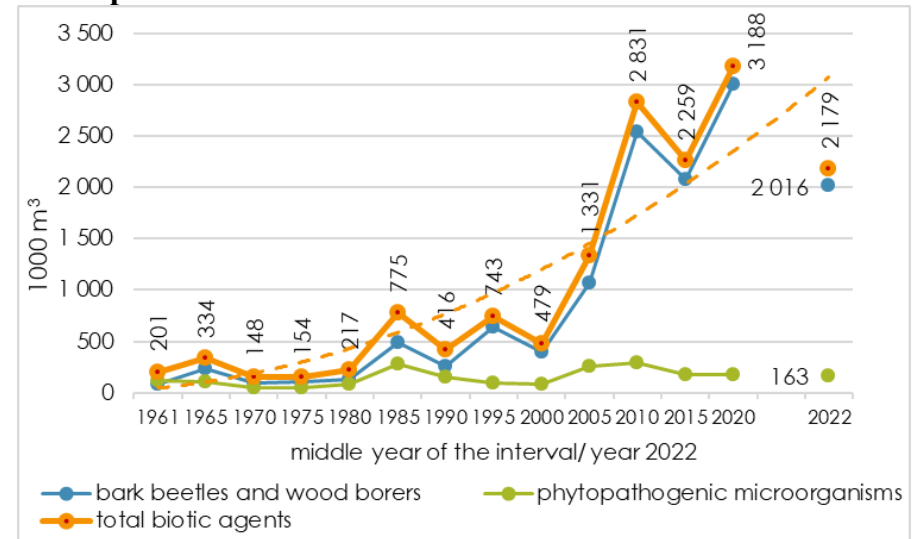


Figure 3b.2
Volume of trees damaged by biotic agents

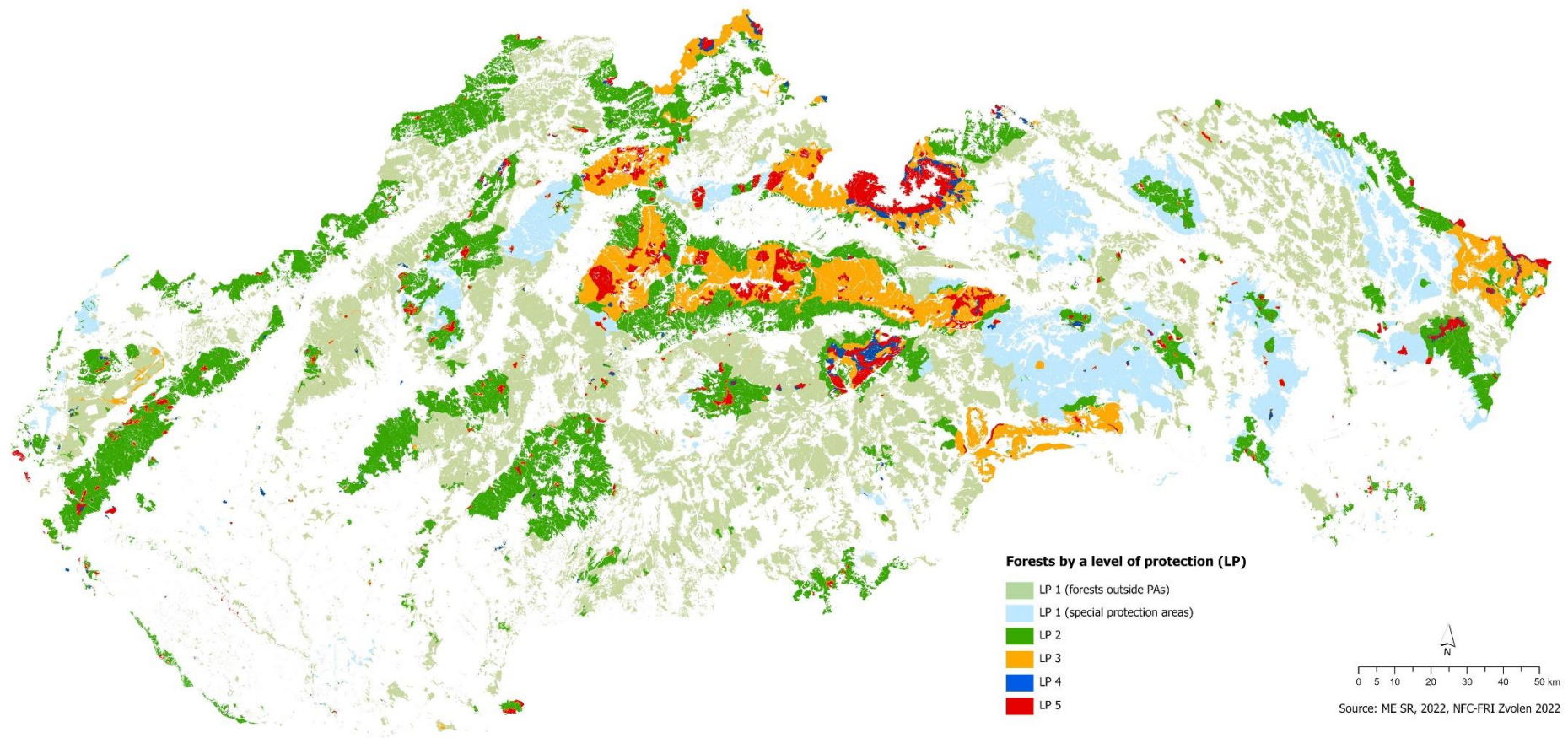


Figure 3c.1
Forests in Slovakia by a level of protection

d. Trends in timber felling

Timber is an important resource, an environmentally friendly, renewable, recyclable and strategic material of the future. Its sound use and processing supports economy and increases employment. In addition, by storing carbon in forests, in harvested wood products and using wood as a substitute for non-renewable materials and energy sources, the forestry and timber sector contributes significantly to mitigating climate change. Revenues from the sale of harvested timber are used to ensure the proper care of forests, their regeneration, silviculture and protection, as well as for the development, maintenance and reconstruction of the forest-road network, investments into machinery and technologies, and more.

In 2022, 7.687 million m³ of wood was felled in the SR. (Figure 3d.1), which was only 0.046 million m³ more than last year. This total volume consisted of 48.3% of softwood and 51.7% of hardwood. State forest organisations logged 51.8%, and non-state entities the remaining 48.2%. 2.755 million m³ (35.8% of the above volume) was felled as an aftermath of forest disturbances by harmful agents, of which 65.7% was softwood and 8.0% hardwood. It was the lowest share of salvage logging since 2002.

Logging was carried out either according to the FMP's prescriptions as so-called intentional felling (both intermediate and regeneration) or as incidental (salvage) felling resulting from unplanned events such as disturbances. The term extraordinary felling was used when forest land was converted to other land use or deforested for the purpose of building forestry buildings and facilities. Figure 4.4-2 shows the distribution of actual felling volumes within felling categories, forest types (coniferous, broadleaved) and type of use (state, non-state).

From the data presented in Figure 3d.2, the gradual reduction of logging after 2010 can be seen, as well as decreasing share of logging on net annual increment, which was 13.4% lower compared to 2010.

Since 1990 (during 33 years), an average of 7.39 million m³ of timber, which represents 102.4% of the volume planned, has been felled annually. The total annual logging exceeded the volume planned in FMPs especially in the period 1994 - 2011 (due to the high proportion of incidental - salvage logging). Since 2020, logging is lower than planned by more than 2 million m³ per year. During the entire presented period, the annual timber felling did not exceed the volume of TCI in the respective year and, on average, it reached 62.5% of its volume. The proportion of felling to TCI was the lowest (55%) in 2000-2003 and the highest (over 80%) in 2005, 2010 and 2018.

The current uneven age structure of forests in the SR causes cyclical changes in the development of basic production indicators, including felling possibilities. It is expected that annual timber felling in all forests in Slovakia could be until 2035 balanced, about 9 million m³. However, species structure will gradually change with the decrease of conifers felling (from 4.4 to 4.1 million m³) and the increase of broadleaves felling (from 4.5 to 4.9 million m³) in 2035.

Norway spruce is the most widespread and economically important coniferous tree species in Slovakia. Its logs belong to the most important assortments of forestry in terms of delivered quantity. Spruce wood is versatile in construction, carpentry, furniture, pulp and paper and chemical industries, and energy. Therefore, also from the point of view of ensuring the wood production function and economic viability of forestry and timber sector, maintaining its optimal representation in forests of the SR is highly desirable. For these reasons, it is necessary to adopt and implement effective measures for a principal change of management of the commercial spruce forests, including shortening the rotation periods, reconstruction and gradual rebuilding of their current structure to the forests closer to nature.

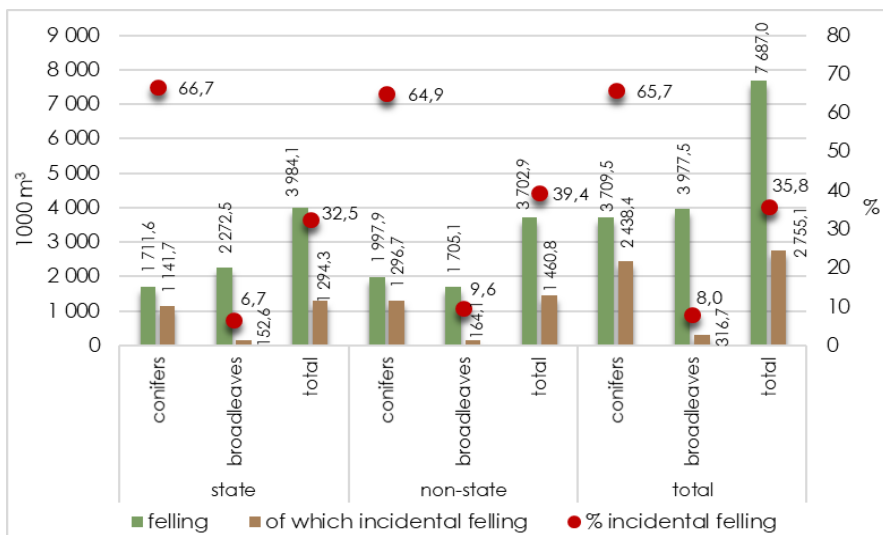


Figure 3d.1
Timber felling and of which incidental felling

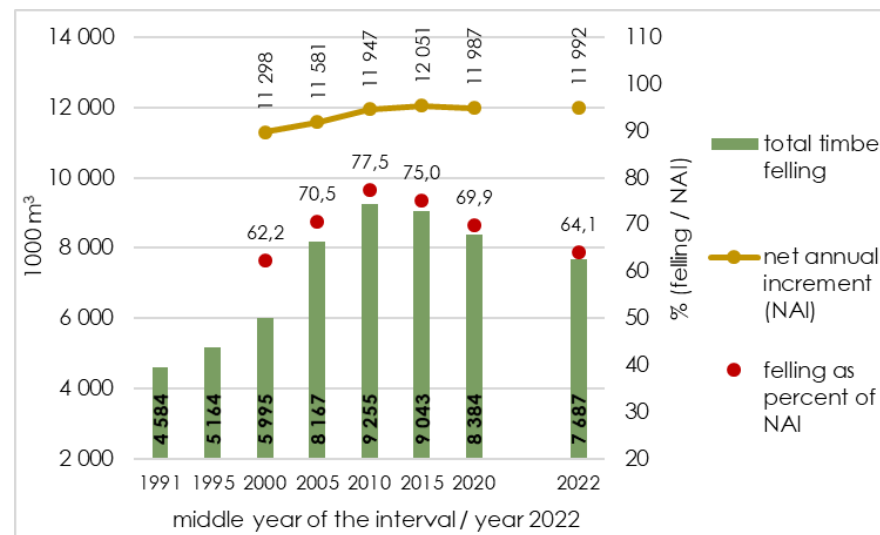


Figure 3d.2
Timber felling and its comparison with net annual increment

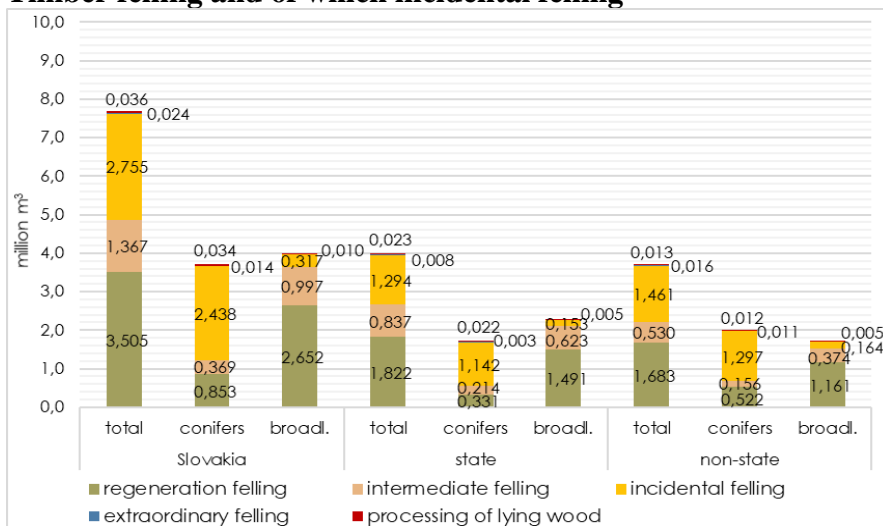


Figure 3d.3 Timber felling by its type, broken down into state and non-state forests and total

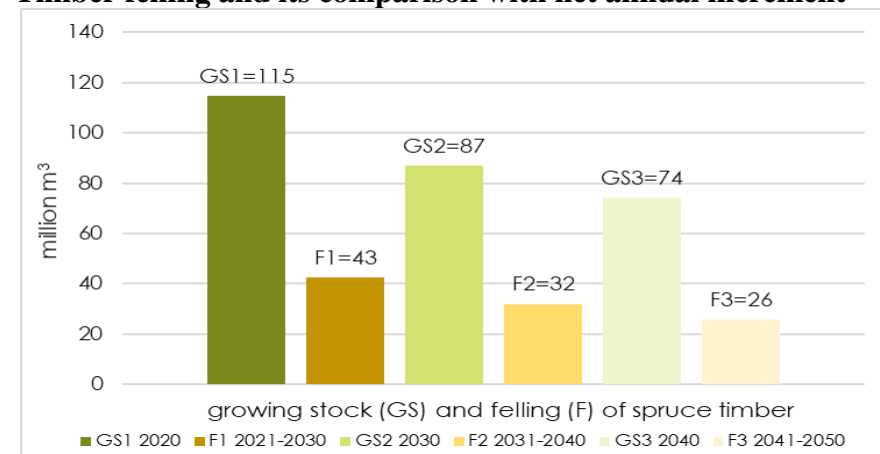


Figure 3d.4 Forecast (till 2050 in 10-year intervals) of the development of growing stock and felling of spruce in the case of continuation of the current extent of incidental (calamitous) felling in forests with predominant representation of spruce

4. DEVELOPMENTS IN FOREST PRODUCTS MARKETS SECTORS

a. Wood raw materials

Supply of raw wood

Timber is the most important source of income in forestry, necessary to maintain their functions, including the supplies of timber to the wood-processing industry (WTP) as well as employment, sales and income in the entire forest-timber sector. In 2022, the total supply of raw wood reached a volume of 7,435 thousand m³, of which 7,086 thousand m³ to the domestic market (of which domestic sales 7,035 thousand m³ and in-house consumption 50,6 thousand m³).

Compared to 2021, timber supply to the domestic market decreased by 227 thousand m³. Softwood deliveries (Figure 4a.1) decreased by 279 thousand m³, while deliveries of hardwood increased by 52,6 thousand m³. Within the softwood supply to the domestic market without in-house consumption, III grade logs had had long-term predominance with a share of 60.0%. In the supply of hardwood (Figure 4a.2), pulpwood predominated with the share of 49.3% over III-grade logs with the share of 38.3%. The share of the highest quality logs of I and II grades was 1.1% in the supply of hardwood and 0.25% in the supply of softwood in 2022.

Table 4a.1

Log grade structure of SOFTWOOD raw wood supply in 2022

Grade	Slovakia	Export	Own consumption	Total	Percentage of grades (%)
	Thousand m ³				
I grade logs	3,30	0,02	0	3,32	0,09
II grade logs	5,68	0,02	0	5,70	0,16
III grade logs	2 104,46	9,08	31,47	2 145,01	59,85
Paper-pulp & abrasive timber	0	0	0	0,00	0
Mining timber	1,73	0,49	0	2,22	0,06
Thin poles	14,45	0,87	0,18	15,49	0,43
Pulpwood	736,75	9,48	1,62	747,85	20,87
Energy wood	27,62	0	0,55	28,16	0,79
Fuelwood	223,47	0,01	7,36	230,83	6,44
Stumpage	50,58	16,80	0	67,38	1,88
Raw trunks	337,78	0	0,24	338,02	9,43
Total	3 505,81	36,77	41,41	3 583,98	100
Percentage (%)	97,82	1,03	1,16	100	-
State sector					
I and II grade logs	0,69	0,02	0	0,71	0,04
III grade logs	1 154,91	4,92	0,87	1 160,69	68,84
Pulpwood	392,76	2,16	0,40	395,32	23,45
Energy wood and fuelwood	96,93	0	1,55	98,48	5,84
Stumpage	1,93	0	0	1,94	0,11
Raw trunks	11,22	0	0,18	11,40	0,68
Other grades	16,12	1,36	0,02	17,50	1,04
Total of state sector	1 674,56	8,45	3,02	1 686,03	100
Percentage (%)	99,32	0,50	0,18	100	-
Non-state sector					
I and II grade logs	8,29	0,02	0	8,31	0,44
III grade logs	949,55	4,17	30,60	984,31	51,86

Pulpwood	343,99	7,32	1,22	352,53	18,57
Energy wood and fuelwood	154,16	0,01	6,35	160,52	8,46
Stumpage	48,65	16,80	0	65,45	3,45
Raw trunks	326,56	0,00	0,06	326,62	17,21
Other grades	0,05	0,00	0,16	0,21	0,01
Total of non-state sector	1 831,25	28,32	38,39	1 897,96	100
Percentage (%)	96,49	1,49	2,02	100	

Source: Quarterly timber supply statistics Les D (MARD SR) 2-04, 2023

Table 4a.2

Log grade structure of HARDWOOD raw wood supply in 2022

Grade	Slovakia	Export	Own consumption	Total	Percentage of grades (%)
	Thousand m ³				
I grade logs	7,93	1,94	0	9,87	0,26
II grade logs	27,44	5,83	0,01	33,28	0,86
III grade logs	1 350,88	120,55	4,36	1 475,79	38,32
Mining timber	4,61	0	0	4,61	0,12
Thin poles	2,61	0	0,29	2,9	0,08
Pulpwood	1 740,49	181,86	1,81	1 924,15	49,96
Energy wood	50,11	0	0,89	51	1,32
Fuelwood	296,51	0,34	1,68	298,54	7,75
Stumpage	36,82	1,68	0,17	38,67	1
Raw trunks	12,58	0	0,03	12,61	0,33
Total	3 529,97	312,21	9,23	3 851,42	100
Percentage (%)	91,65	8,11	0,24	100	-
State sector					
I and II grade logs	9,23	3,17	0	12,39	0,56
III grade logs	1 052,33	62,15	4,25	1 118,73	50,13
Pulpwood	863,52	44,58	0,62	908,72	40,72
Energy wood and fuelwood	180,57	0,05	1,92	182,53	8,18
Stumpage	1,53	0	0,17	1,70	0,08
Raw trunks	0	0	0,03	0,03	0
Other grades	7,22	0	0,29	7,51	0,34
Total of state sector	2 114,38	109,94	7,28	2 231,60	100
Percentage (%)	94,75	4,93	0,33	100	-
Non-state sector					
I and II grade logs	26,14	4,61	0,01	30,76	1,9
III grade logs	298,56	58,41	0,11	357,07	22,04
Pulpwood	876,97	137,28	1,19	1 015,44	62,69
Energy wood and fuelwood	166,05	0,30	0,65	167,00	10,31
Stumpage	35,29	1,68	0	36,97	2,28
Raw trunks	12,58	0	0	12,58	0,78
Other grades	0	0	0	0	0
Total of non-state sector	1 415,59	202,27	1,96	1 619,82	100
Percentage (%)	87,39	12,49	0,12	100	

Source: Quarterly timber supply statistics Les D (MARD SR) 2-04, 2023

Table 4a.3**Structure of SOFTWOOD and HARDWOOD assortments supply and total in 2022 (thousand m³)**

Supply	Slovakia	Export	Own consumption	Total
	Thousand m ³			
Softwood	3 505,81	36,77	41,41	3 583,98
Hardwood	3 529,97	312,21	9,23	3 851,42
Total	7 035,78	348,98	50,64	7 435,40

Source: *Quarterly timber supply statistics Les D (MARD SR) 2-04, 2023*

Foreign trade in raw wood assortments

According to the preliminary data of the foreign trade statistics (customs statistics), 1,888 thousand m³ of raw wood was exported in 2022.

The export of raw wood (Figure 4a.3) decreased by 175 thousand m³ compared to 2021. In exports, heading mainly to EU countries (Romania, the Czech Republic, Italy, Poland and Austria) and to China, the logs of IV and V softwood quality grades (40.6% of total exports) and I to III hardwood quality grades (25.4%) prevailed. Of the above-mentioned volume, forest managers and owners exported only 349 thousand m³ (36,8 thousand m³ of softwood and 312,2 thousand m³ of hardwood), i.e. 18.5% of the total volume of exports. The remaining 81.5% was exported by various non-forestry entities, mainly trading companies. In 2022, the volume of timber exports was 130 thousand m³ lower than the average annual export in the period 2018-2022.

In 2022, 2,841 thousand m³ of raw wood were imported to the territory of the SR (Figure 4a.4), which was 387 thousand m³ (15.8%) more than last year, or by 779 thousand m³ more compared to the five-year average of imports in the period of 2018-2022. The positive trend of growing import of timber continued, together with the increase in the import of higher-quality timber of softwood and hardwood I - III grades, of which 2,000 thousand m³ was imported (70% of the total volume of raw wood imports). In softwood, the import of spruce saw logs from the Czech Republic prevailed. Hardwood was imported mainly from Poland.

Domestic consumption of raw wood assortments

The total volume of domestic consumption and processing of raw wood (supplies + import - export) in 2022 reached 8,388 thousand m³ and, compared to 2021, it increased by 332 thousand m³, i.e. by 4.1% (Table 4a.4).

Table 4a.4 Raw timber consumption in 2022 (1,000 m³)

Grade	Domestic production	Import	Export	Domestic consumption
Softwood logs (quality class I to III)	2 559,4	1 130,0	512,0	3 177,4
Softwood logs (quality class IV and V)	765,5	705,0	766,0	704,5
Hardwood logs (quality class I to III)	1 570,2	870,0	479,0	1 961,2
Hardwood logs (quality class IV and V)	1 931,7	53,0	107,0	1 877,7
Fuelwood	608,6	83,0	24,0	667,6
Total	7 435,4	2 841,0	1 888,0	8 388,4

Source: *Quarterly timber supply statistics Les D (MARD SR) 2-04, Statistical Office of the SR 2021; Joint Forest Sector Questionnaire (JFSQ 2022), tentative values for 2022.*

Since 2016 (Figure 4a.5), the domestic consumption of softwood and hardwood logs of I to III grade has increased and, contrary, the consumption of firewood as well as softwood and hardwood logs of IV and V has decreased. The domestic consumption has increased despite the lower felling volumes in 2020 - 2022, mainly due to the continuing positive trend of increasing raw-wood imports. However, the ongoing decreasing trend of timber felling with rather

constant production of the timber industry will result in a shortage of raw wood and an increase in its average monetization in the coming years.

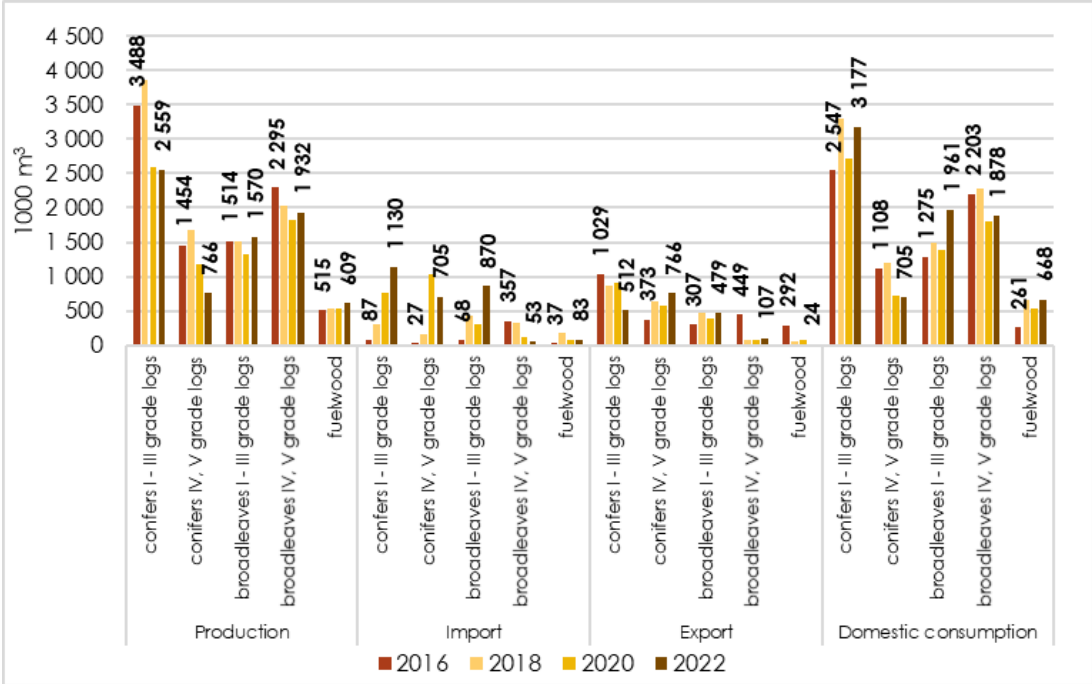


Figure 4a.5 Domestic consumption of raw wood by quality grade

Source: Quarterly timber supply statistics Les D (MARD SR) 2-04, Statistical Office of the SR 2021; Joint Forest Sector Questionnaire (JFSQ 2022), tentative values for 2022.

Prices of raw wood assortments

In 2022, in the year-on-year comparison, a significant increase in the average monetisation of raw wood grades was recorded (to €74.23/m³, i.e. by €16.33/ m³, i.e. by 28.2%). This resulted from a steep increase in the prices of softwood as well as hardwood grades and the demand for raw timber and wood products. The average price of softwood increased from €63.63/ m³ in 2021 to €85.76/m³ in 2022, i.e. by €22.13/ m³ (34.8%). The domestic price of softwood (€86.06/ m³) was €29 higher than the export price (€57.06/ m³). The average price of hardwood increased by €11.61/ (21.9%) to actual €64.58/ m³; the export price of hardwood was €76.98/ m³ (Figure 4a.6).

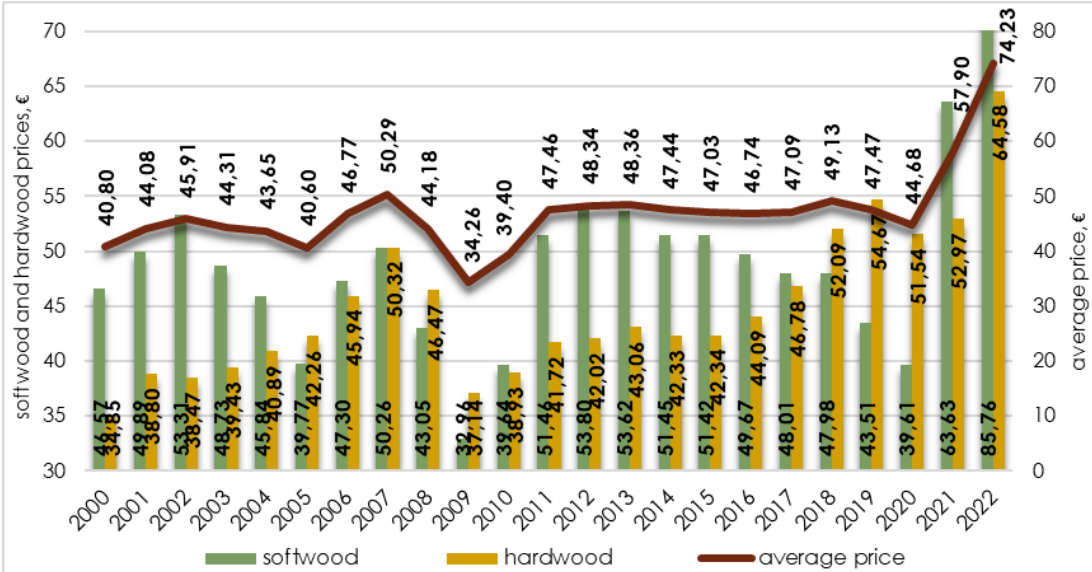


Figure 4a.6 Development of softwood, hardwood and average prices

Source: Quarterly timber supply statistics Les D (MARD S 2-04; Forestry studies 69/2019).

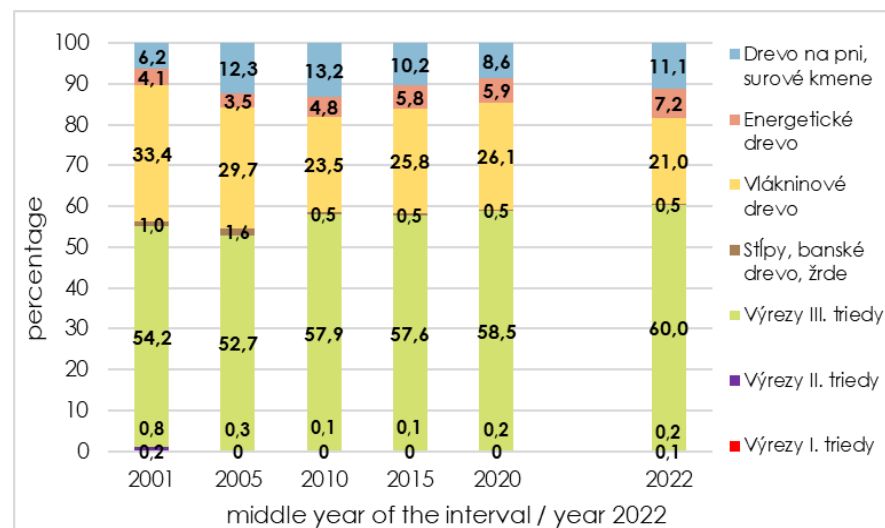
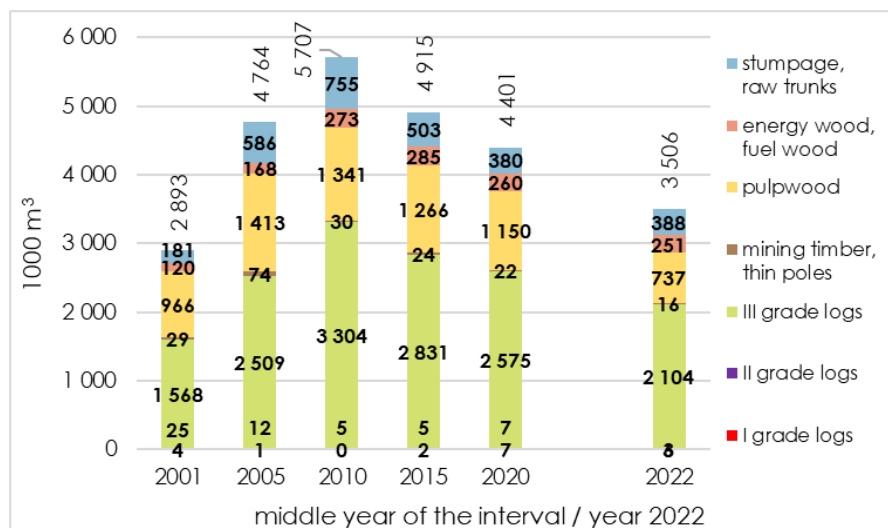


Figure 4a.1
Development of domestic supplies of SOFTWOOD by the grade of assortment without own consumption (1000 m³ and %)

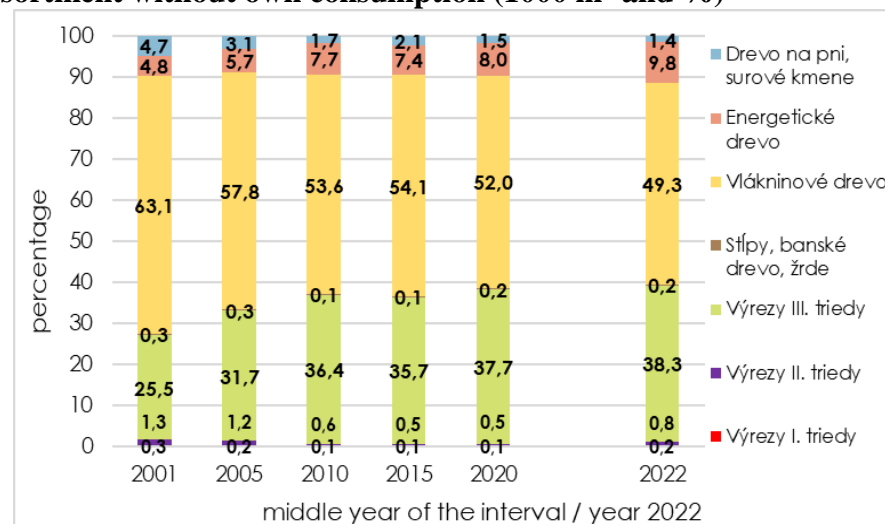
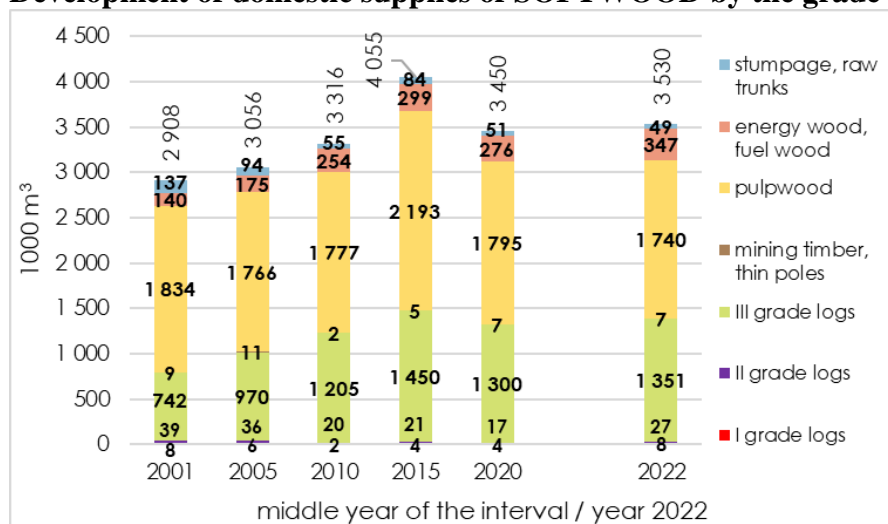


Figure 4a.2
Development of domestic supplies of HARDWOOD by the grade of assortment without own consumption (1000 m³ and %)

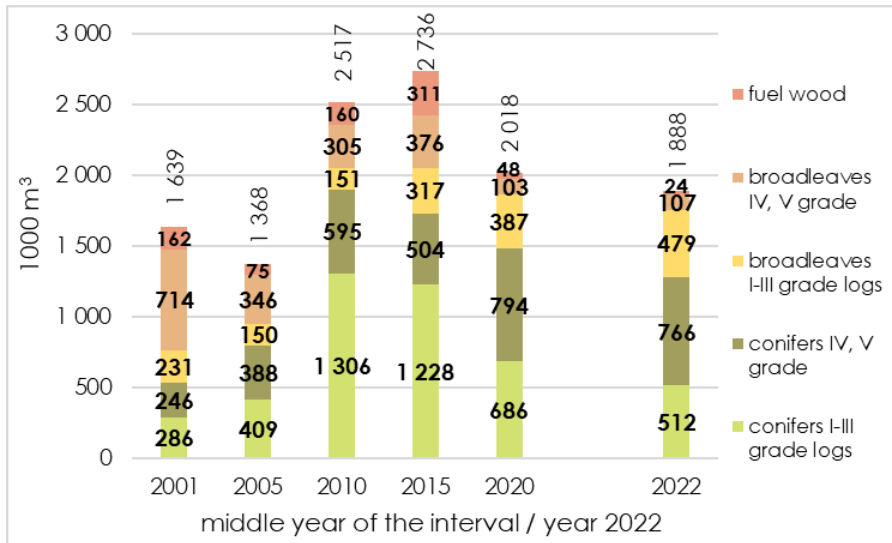


Figure 4a.3
Development of raw wood export

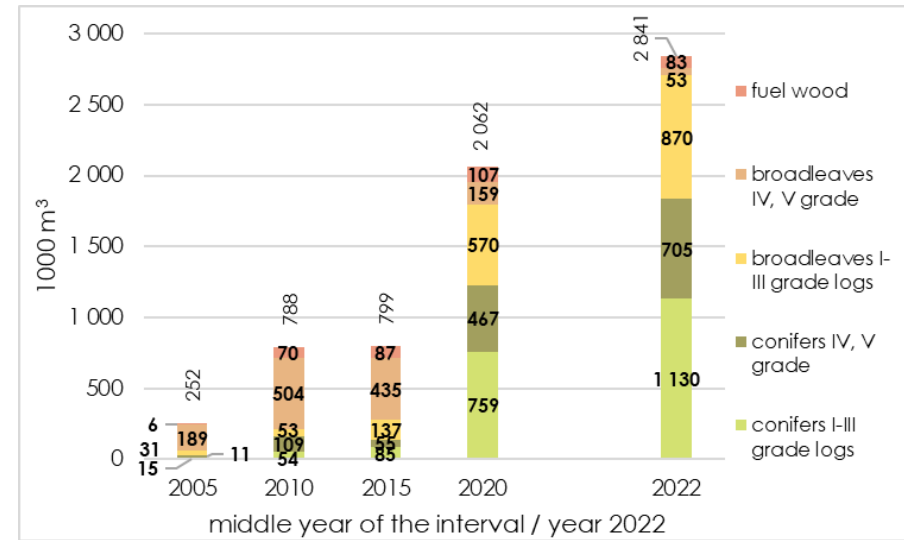
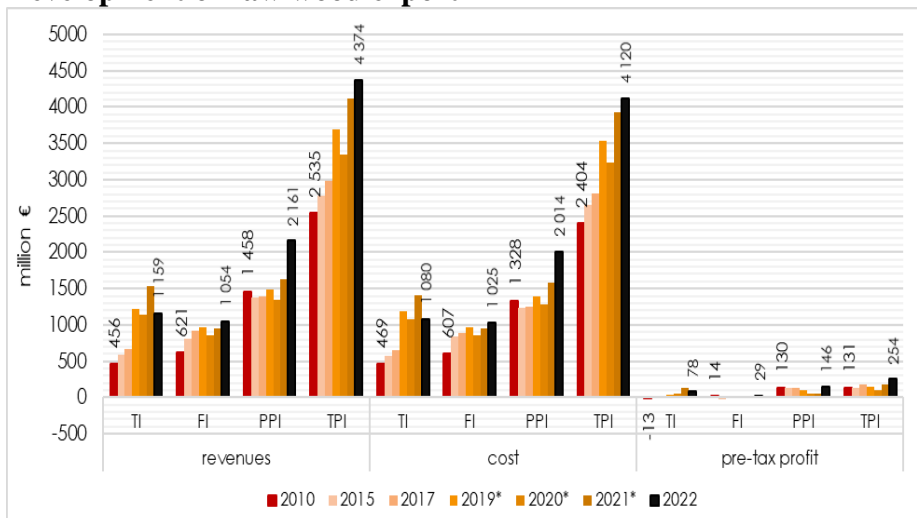
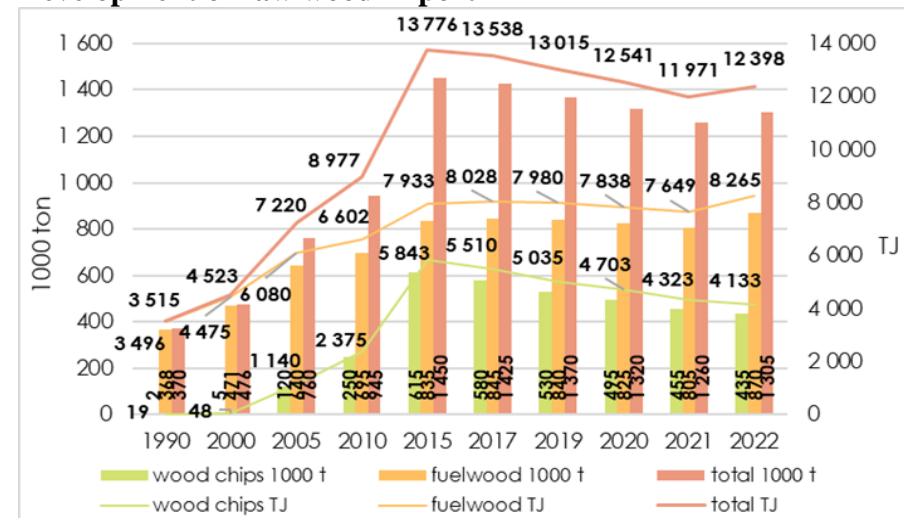


Figure 4a.4
Development of raw wood import



4b.1
Development of chosen indicators of the WPI



4b.2 **Woody biomass available for energy use and its energy equivalent**

b. Wood processing industry

In 2022, the total volume of domestic processing of raw wood (supplies + import - export) reached 8.388 million m³, which was 0.333 million m³ more than previous year. The aforementioned increase was reflected in the economic indicators of the timber processing industry. Revenues increased by 6.4%, costs by 4.9% and the economic result before taxes by 37.3% to the actual €254 million. It means there was no significant growth in the competitiveness of majority of mechanical-timber-processing enterprises. Due to the lack of processing capacities, the highest quality I and II log grades are processed very little, as well as hardwood logs of the grade III. This does not correspond to the considerable potential production of these grades in the Slovak forests. There is still an increased demand for softwood logs and hardwood pulpwood. On the other hand, the pulp and paper industry is one of the most performant sectors of the Slovak economy. The current trade balance of the forestry and timber sector reaches a surplus of €815.5 million. The trade surplus in lumber exports of €210.16 million can be perceived negatively. Contrary, the trade surplus in products with high added value such as paper production of €434.1 million and secondary wood products €193.4 million, including furniture and joinery products, is positive. Therefore, further development of industries with higher added value having a negative trade balance, especially the production of veneers, fiberboard and OSB boards, secondary paper products and processing of waste paper is the main priority. In 2022, the total supply of wood fuel biomass from the forest sector increased to 1.3 million tons.

Increasing the amount of carbon stored in wood products is an internationally recognised measure to mitigate climate change. Therefore, the sound use wood should be supported, especially long-lasting wood products. Carbon stored in wood returns back into the atmosphere only after products become are burned or their decomposition begins. In 2021, the balance of the CO₂ bound in wood products, i.e. the difference between the CO₂ “removals” and “emissions”, was almost 195,000 tonnes and compared to 2020, it increased by 163,000 tonnes (Figure 4b.3).

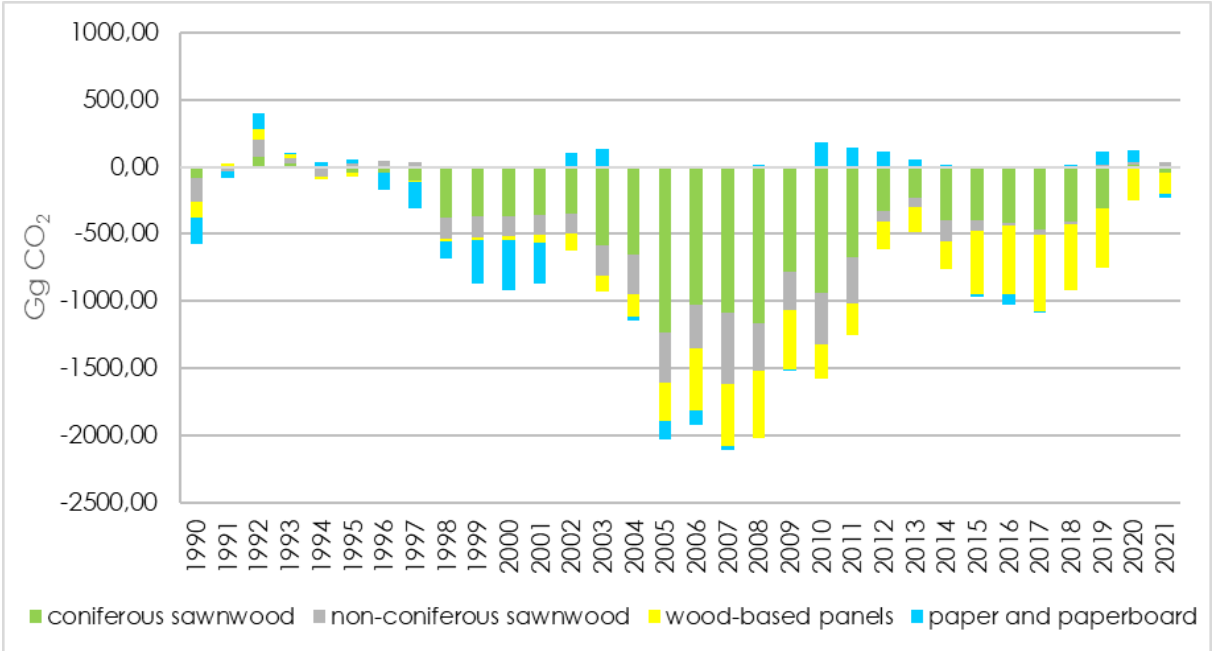


Figure 4b.3 Balance of “removals” and “emissions” of CO₂ (in Gg CO₂ eq.) in main categories of wood products

Source: Forestry studies 69/2019 (updated to include 2020, 2021). Note: “Removals” represent CO₂ stored in wood products and having negative values in the balance; “emissions” represent the volumes of CO₂ released into the atmosphere from used up wood products (after their lifespan); in the balance, they have positive values.

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

In 2022, the total supplies of wood-fuel biomass from LH were 1.3 million tonnes and, compared to 2021, they increased by 45,000 tonnes. The trend of their reduction that begun approximately in 2015, when the volume of supply of fuel wood biomass was the highest (1.45 million tons), has ended (Figure 4b.2).

d. Evaluation of the use of raw wood resources in the wood processing industry (WPI) in Slovakia – Cascade Approach (Study: National Forest Centre, Technical University Zvolen, 2021-2022)

In 2022, the process of approving the new National Forest Programme (NFP) SR 2022-2030 "Forests for society" continued. The issue of forests and forest-based industry in the circular economy is dealt with in the second thematic part "Forests and wood", specifically Strategic Goal IV: "Increase the competitiveness of the forest and timber sector through more efficient use of wood and the production of products with higher added value based on the principles of the circular bioeconomy". One of the measures is also an increase in the cascading and circular use of timber.

The world's leading forums to combat climate change support the production of wood and wood products (Harvested Wood Products – HWP) produced in a sustainable and ecological way. Therefore, carbon storage in HWP is an important measure to mitigate global warming. In doing so, it is necessary to apply the concept of cascade processing and utilization of wood in the following order of preferences: 1) mechanical processing; 2) chemical processing; 3) recycling of products after their useful life 4) energy utilization of wood. This practice extends the life cycle of the wood and consequently carbon sequestration in the HWP.

One of the conditions of the cascade approach is the preferential use of by-products of wood processing (off-cuts, sawdust, shavings, chips, etc.), especially for the production of wood-based agglomerated materials (AM) and cellulose products. Therefore the current (non-ecological) practice of predominantly using wood by-products for energy production in the Slovak Republic should be changed.

To find out the state of production of wood semi-finished products and by-products of mechanical wood processing, a questionnaire survey was in 2021-2022 conducted for two main product groups:

- sawmill products (sawnwood, by-products) and
- large-area materials (veneers, plywood and agglomerated materials).

Assessment of the use of raw wood resources in the wood processing industry (WPI) in Slovakia was aimed at quantifying production:

- basic semi-finished products (sawnwood, veneers, plywood, agglomerated materials);
- by-products (off-cuts, boards, edge boards, sawdust, shavings, bark, chips, peeling residues, wood cores, wood dust);
- processed energy wood (pellets, briquettes, split firewood).

The number of subjects addressed was 177 (approximately half of those registered in Slovakia). The number of answering respondents was 57, which represents the return rate of the questionnaire: 32.2%. The number of responding subjects producing large-sized materials represented almost 100% coverage of the mentioned products in Slovakia. The number of respondents took into account, among other things, size categories of companies and coverage of Slovakia according to regions and their forest cover.

This empirical survey was evaluated through an expert analysis of the collected data for 2020 including approximation of the achieved results for the whole of Slovakia and calculation of the value of the cascade coefficient. The findings are intended to serve as background material for taking measures to optimize the use of wood and by-products from wood in accordance with

the principles of circular bioeconomy and cascading use of wood. These concrete results for 2020 were obtained by evaluating the survey:

- quantification of production inputs by volume and types;
- quantification of production, including by-products, by volume and types;
- subsequent use of production (own consumption or sale; for industrial or energy use);
- calculation of the cascade coefficient to indicate the possible prolongation of carbon storage in HWP depending on the use of wood.

As for the volume of by-products (Figure 2.1) produced in 2020, it was 1.25 million m³. The largest volumes were produced in wood chips (477 ths. m³) and sawdust (255 ths. m³). Of this, 61.2% was used for energy production and 38.8% for other industrial use. Directly for production of energy was used 37.7% and 23.5% through processed energy wood (pellets, briquettes, split firewood).

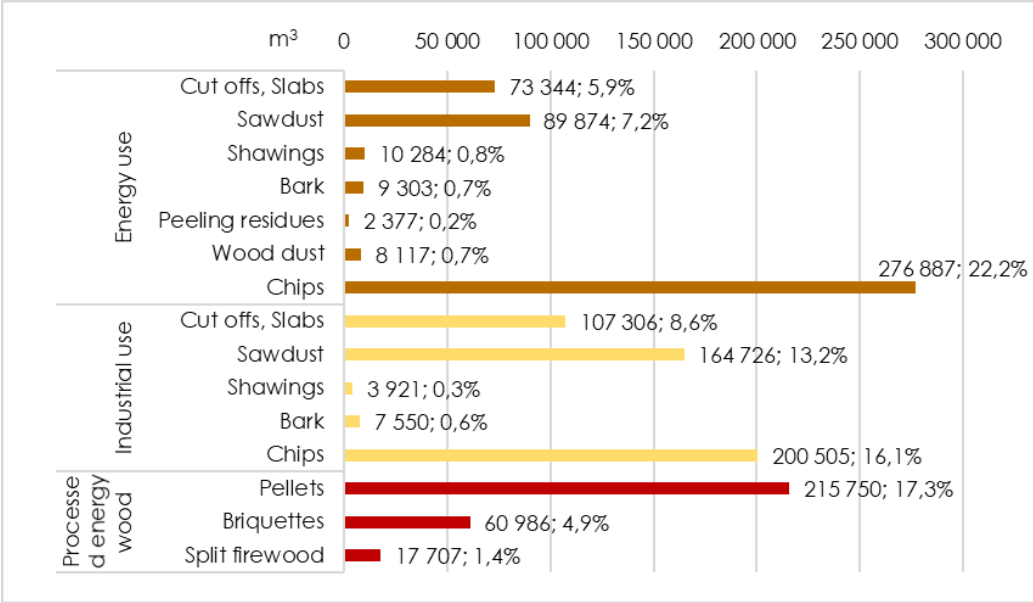


Figure 2.1 Production and use of by-products

Indirect wood flows can best be expressed by a cascade coefficient that takes into account the repeated use of wood originating on the use side and returning to the source side. We can calculate it as a share of total timber sources and the volume of domestic consumption of raw wood in given year. Total timber sources in 2020 was 9.536 million. m³. It was formed by wood biomass from the forest, recycled material, by-products and processed energy wood. Recycled wood material and black liquor have been added to the resources; black liquor is produced as an energy-rich by-product in the pulp and paper industry and it is used as biofuel. The volume of domestic consumption of raw wood in 2020 was 7.158 mil. m³. The value of the cascade coefficient calculated by this procedure was 1.332.

The value of the cascade coefficient we can calculate also without taking into account sources and products for energy use. This method of calculation enables to better express the desired increase in the use of wood and by-products for further industrial processing, especially for products with a longer lifespan. This will increase the carbon sequestration time in the HWP and delay the end of the wood's life cycle. Wood for energy use stores carbon a very short time and when it was excluded from the calculation, the value of the cascade coefficient was lower 1.094

e. Certified forest products

In the SR, forest managers and wood processors can apply for certificates of two certification schemes: PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council). Both these certificates confirm that forest management meets the certification conditions and criteria defined by the given scheme, and that the wood from which the wooden product was made originates in a certified forest managed sustainably. In Slovakia, 1,199,600 ha of forest stands had the PEFC certificate. According to the FSC scheme, 436,500 ha was certified. As 354,100 ha had both certificates (PEFC and FSC) in 2022, the total area of certified forests in the SR reached 1,282,500 ha, i.e. 65.6% of the total area of forest stands.

Table 4d.1 Area and share of certified forests by PEFC and FSC

Scheme	Area and share of certified forests ha / %				Number of ce
	Certificate of one scheme	Double certification (PEFC and FSC)	Total	Share of the forest stand area	
PEFC	845 505	354 097	1 199 602	61,4	226
FSC	82 867		436 473	22,3	20
Total	928 372	354 097	1 282 469	65,6	246

Source: PEFC Slovakia, 2022; FSC: <https://fsc.org/en/facts-figures> (31 December 2022)

Table 4d.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	976 198	976 198	100	81,4	101
Private	155 729	45 553	29,3	3,8	45
Community	642 560	68 092	10,6	5,7	48
Church	17 442	0	0	0	0
Agri-cooperative	4 581	0	0	0	0
Municipal	158 251	109 759	69,4	9,1	32
Total PEFC	1 954 760	1 199 602	61,4	100,0	226

Actual domestic consumption, its estimate and forecast in 2022 and 2023 for sawnwood, wood-based panels, pulp and paper are listed in the next tables e) – h):

e) Sawn softwood (1000 m³)

5.C	Sawnwood – coniferous	2021	2022	2023 estimate	2024 forecast
	Production		1 302	1 430	1 360
Imports		324	480	450	460
Exports		1 063	1 063	1 000	1 000
Apparent consumption		563	847	810	860

f) Sawn hardwood (1000 m³)

5.C	Sawnwood – non-coniferous	2021	2022	2023 estimate	2024 forecast
	Production		350	385	400
Imports		52	55	50	55
Exports		177	205	210	200
Apparent consumption		225	235	240	275

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

- Veneer sheets (1000 m³)

	Veneer sheets	2021	2022	2023 estimate	2024 forecast
7	Production	29	21	25	25
	Imports	21	27	30	30
	Exports	34	31	30	30
	Apparent consumption	16	17	25	25

- Plywood (1000 m³)

	Plywood	2021	2022	2023 estimate	2024 forecast
8.1	Production	417	153	150	150
	Imports	65	10	15	15
	Exports	140	5	5	5
	Apparent consumption	342	158	160	160

- Particle board (1000 m³)

	Particle board	2021	2022	2023 estimate	2024 forecast
8.2	Production	608	676	675	675
	Imports	237	197	200	200
	Exports	571	474	475	475
	Apparent consumption	274	399	400	400

- Fibreboard

	Fibreboard	2021	2022	2023 estimate	2024 forecast
8.3	Production	0	0	0	0
	Imports	275	248	260	270
	Exports	27	15	20	25
	Apparent consumption	248	233	240	245

h) Pulp and paper

	Wood pulp	2021	2022	2023 estimate	2024 forecast
9	Production	769	692	700	725
	Imports	160	173	170	170
	Exports	248	166	170	180
	Apparent consumption	680	700	700	715
	Paper & Paperboard	2021	2022	2023 estimate	2024 forecast
12	Production	1 019	967	975	1 000
	Imports	474	457	450	475
	Exports	939	859	850	875
	Apparent consumption	554	565	575	600

**Report elaborated by: Martin Moravčík and Miroslav Kovalčík
National Forest Centre – Forest Research Institute, Zvolen, Slovakia**



TF1
TIMBER FORECAST QUESTIONNAIRE
Roundwood

Country: Slovakia	Date: 22.9.2023
Name of Official responsible for reply: Martin Moravčík	
Official Address (in full):	
National Forest Centre, T. G. Masaryka 22, 96001 Zvolen, Slovakia	
Telephone:	Fax:
E-mail: martin.moravcik@nlcsk.org	

Note:
 Complete only if data
 for 2022 have been
 revised.

Product Code	Product	Unit	Historical data		Revised 2022	Estimate 2023	Forecast 2024
			2021	2022			
1.2.1.C	SAWLOGS AND VENEER LOGS, CONIFEROUS						
	Removals	1000 m ³ ub	2 724	2 559		2 430	2 400
	Imports	1000 m ³ ub	1 049 #	900 #		950	1 000
	Exports	1000 m ³ ub	716 #	400 #		350	300
	Apparent consumption	1000 m ³ ub	3 057	3 059		3 030	3 100
1.2.1.NC	SAWLOGS AND VENEER LOGS, NON-CONIFEROUS						
	Removals	1000 m ³ ub	1 519	1 570		1 650	1 700
	Imports	1000 m ³ ub	562 #	500 #		450	450
	Exports	1000 m ³ ub	423 #	400 #		400	400
	Apparent consumption	1000 m ³ ub	1 658	1 670		1 700	1 750
1.2.1.NC.T	of which, tropical logs						
	Imports	1000 m ³ ub	0 #	0 #		0	0
	Exports	1000 m ³ ub	0 #	0 #		0	0
	Net Trade	1000 m ³ ub	0	0		0	0
1.2.2.C	PULPWOOD (ROUND AND SPLIT), CONIFEROUS						
	Removals	1000 m ³ ub	928	748		710	700
	Imports	1000 m ³ ub	645 #	600 #		630	650
	Exports	1000 m ³ ub	730 #	750 #		740	740
	Apparent consumption	1000 m ³ ub	843	598		600	610
1.2.2.NC	PULPWOOD (ROUND AND SPLIT), NON-CONIFEROUS						
	Removals	1000 m ³ ub	1 965	1 924		2 000	2 050
	Imports	1000 m ³ ub	91 #	100 #		100	100
	Exports	1000 m ³ ub	147 #	150 #		150	150
	Apparent consumption	1000 m ³ ub	1 909	1 874		1 950	2 000
3	WOOD CHIPS, PARTICLES AND RESIDUES						
	Domestic supply	1000 m ³	1 150 C	1 149 C		1 150	1 200
	Imports	1000 m ³	307 C	323 C		300	300
	Exports	1000 m ³	360 C	310 C		350	350
	Apparent consumption	1000 m ³	1 096	1 162		1 100	1 150
1.2.3.C	OTHER INDUSTRIAL ROUNDWOOD, CONIFEROUS						
	Removals	1000 m ³ ub	26	18		20	20
1.2.3.NC	OTHER INDUSTRIAL ROUNDWOOD, NON-CONIFEROUS						
	Removals	1000 m ³ ub	8	8		10	10
1.1.C	WOOD FUEL, CONIFEROUS						
	Removals	1000 m ³ ub	223	259		260	275
1.1.NC	WOOD FUEL, NON-CONIFEROUS						
	Removals	1000 m ³ ub	272	350		350	375



TF2

TIMBER FORECAST QUESTIONNAIRE Forest products

Country: Slovakia	Date: 22.9.2023
Name of Official responsible for reply: Martin Moravčík	
Official Address (in full): National Forest Centre, T. G. Masarka 22, 96001 Zvolen, Slovakia	
Telephone:	Fax:
E-mail:	

Note:
Complete only if data
for 2022 have been
revised.

Product Code	Product	Unit	Historical data		Revised 2022	Estimate 2023	Forecast 2024
			2021	2022			
6.C	SAWNWOOD, CONIFEROUS						
	Production	1000 m ³	1 302	1 430		1 360	1 400
	Imports	1000 m ³	324	480		450	460
	Exports	1000 m ³	1 063	1 063		1 000	1 000
	Apparent consumption	1000 m ³	563	847		810	860
6.NC	SAWNWOOD, NON-CONIFEROUS						
	Production	1000 m ³	350	385		400	420
	Imports	1000 m ³	52	55		50	55
	Exports	1000 m ³	177	205		210	200
	Apparent consumption	1000 m ³	225	235		240	275
6.NC.T	of which, tropical sawnwood						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	0	0		0	0
	Exports	1000 m ³	0	0		0	0
	Apparent consumption	1000 m ³	0	0		0	0
7	VENEER SHEETS						
	Production	1000 m ³	29 C	21 C		25	25
	Imports	1000 m ³	21 C	27 C		30	30
	Exports	1000 m ³	34 C	31 C		30	30
	Apparent consumption	1000 m ³	16	17		25	25
7.NC.T	of which, tropical veneer sheets						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	5	5		5	5
	Exports	1000 m ³	2	4		4	4
	Apparent consumption	1000 m ³	2	0		1	1
8.1	PLYWOOD						
	Production	1000 m ³	417 C	153 C		150	150
	Imports	1000 m ³	65 C	59 C	10	15	15
	Exports	1000 m ³	140 C	146 C	5	5	5
	Apparent consumption	1000 m ³	342	67	158	160	160
8.1.NC.T	of which, tropical plywood						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	2	1		2	2
	Exports	1000 m ³	0	0		0	0
	Apparent consumption	1000 m ³	2	1		1	1
8.2	PARTICLE BOARD (including OSB)						
	Production	1000 m ³	608	676		675	675
	Imports	1000 m ³	237	197		200	200
	Exports	1000 m ³	571	474		475	475
	Apparent consumption	1000 m ³	274	399		400	400
8.2.1	of which, OSB						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	94	48		60	63
	Exports	1000 m ³	3	1		3	3
	Apparent consumption	1000 m ³	91	48		58	60
8.3	FIBREBOARD						
	Production	1000 m ³	0 C	0 C		0	0
	Imports	1000 m ³	275 C	248 C		260	270
	Exports	1000 m ³	27 C	236 C	15	20	25
	Apparent consumption	1000 m ³	248	12	233	240	245
8.3.1	Hardboard						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	22	21		21	22
	Exports	1000 m ³	5	1		1	1
	Apparent consumption	1000 m ³	17	21		20	21
8.3.2	MDF/HDF (Medium density/high density)						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	183	170		175	180
	Exports	1000 m ³	22	232 E	11	15	20
	Apparent consumption	1000 m ³	162	-63	159	160	160
8.3.3	Other fibreboard						
	Production	1000 m ³	0	0		0	0
	Imports	1000 m ³	70	57		65	70
	Exports	1000 m ³	0	3		2	3
	Apparent consumption	1000 m ³	70	54		63	67
9	WOOD PULP						
	Production	1000 m.t.	769 C	692 C		700	725
	Imports	1000 m.t.	160 C	173 C		170	170
	Exports	1000 m.t.	248 C	166 C		170	180
	Apparent consumption	1000 m.t.	680	700		700	715
12	PAPER & PAPERBOARD						
	Production	1000 m.t.	1 019 C	967 C		975	1 000
	Imports	1000 m.t.	474 C	457 C		450	475
	Exports	1000 m.t.	939 C	859 C		850	875
	Apparent consumption	1000 m.t.	554	565		575	600
5.1	WOOD PELLETS						
	Production	1000 m.t.	310	390		450	450
	Imports	1000 m.t.	46	47		75	75
	Exports	1000 m.t.	337	415		350	350
	Apparent consumption	1000 m.t.	19	22		175	175

