



SCIENTIFIC-TECHNICAL
SYMPOSIUM

“ASSESSING FOREST DAMAGE
AND DISTURBANCE”,

VIENNA, 29-30 SEPTEMBER
2022

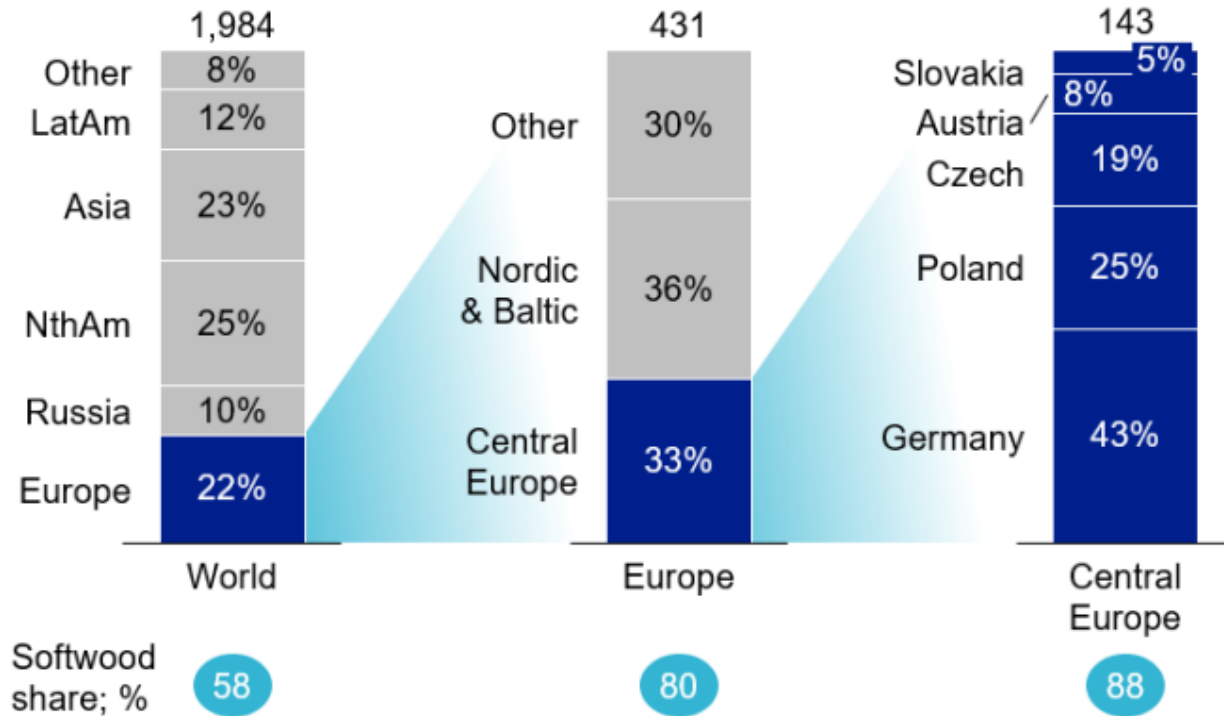
Silvia Melegari
EOS Secretary General

ASPECTS PRESENTED IN THIS PRESENTATION

- Importance of central Europe's forests resources
- The spruce bark beetle outbreak
- The spruce bark beetle outbreak: Austria – Germany and Czech Republic
- Initial impact of central European wood markets
- Development of damage and harvests
- Changes in forest management to mitigate bark beetle risk
- Global implications
- Conclusions

IMPORTANCE OF CENTRAL EUROPE'S FORESTS RESOURCES

Industrial roundwood production, 2020; Million m³ub



Important region for roundwood production:

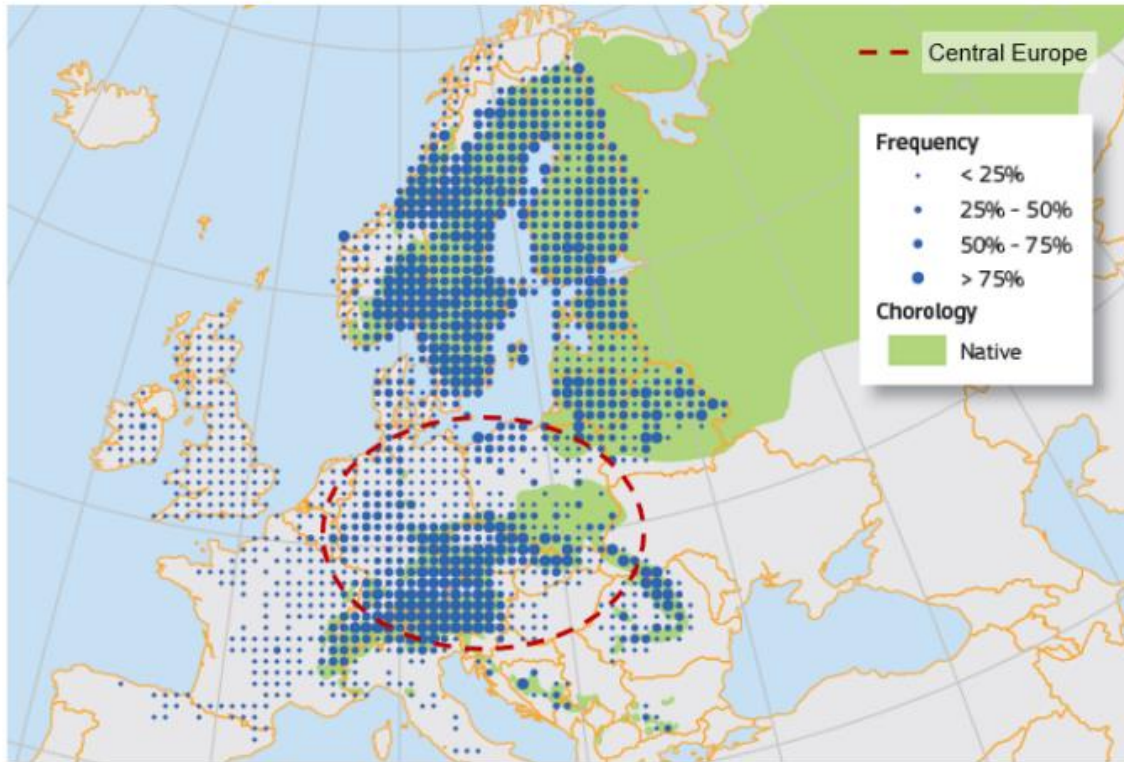
- 7% of global roundwood supply
- 33% of Europe's roundwood supply

Even more important for softwood supply:

- 11% of global softwood supply
- 36% of Europe's softwood supply



THE SPRUCE BARK BEETLE OUTBREAK



Source: European Atlas of Forest Tree Species

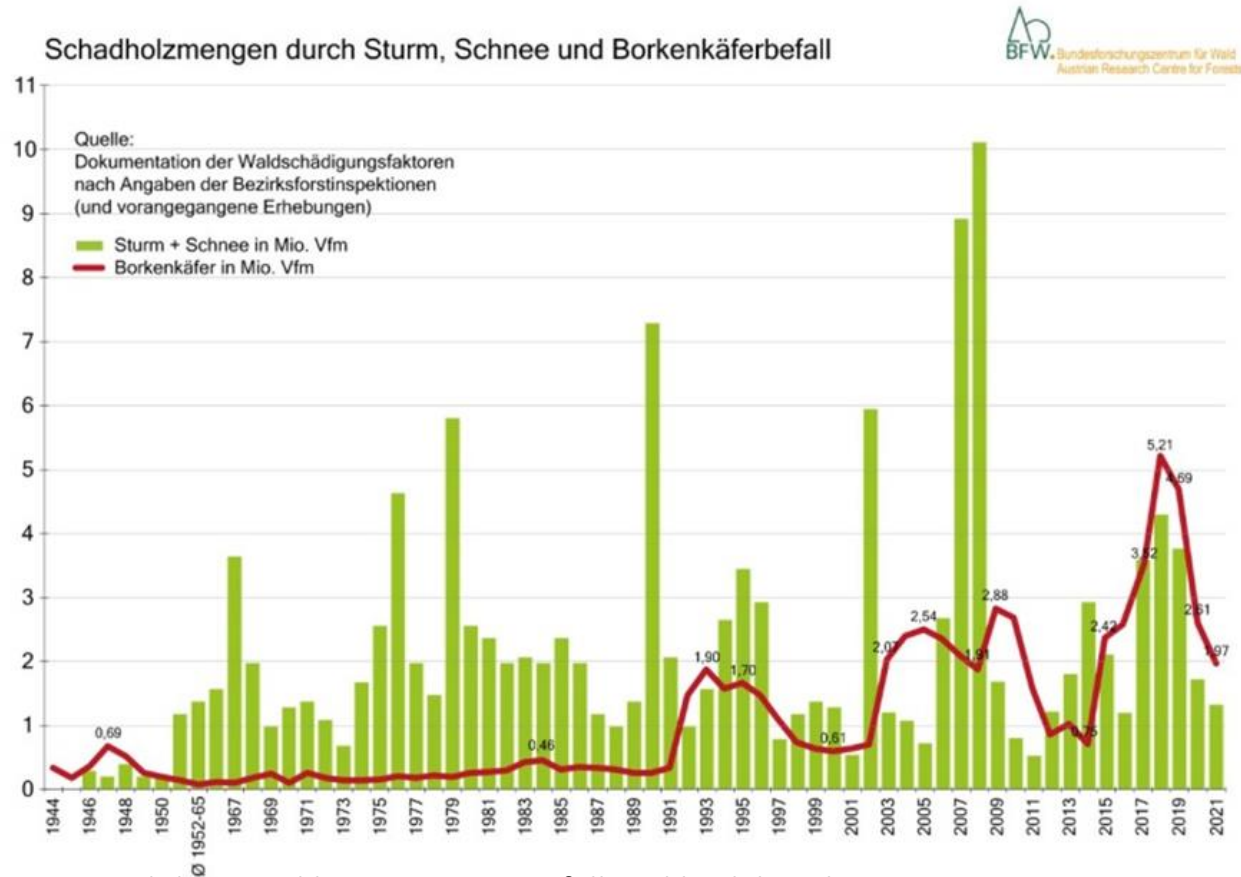
- 7 billion m³ of spruce growing stock in Europe (~25% of all forest).
- Most common in Central Europe and Nordic-Baltic regions.
- Regions with relatively mild climate are more prone to spruce bark beetle; southern latitudes, lower altitudes.
- Beetle outbreak clearly linked to climate change (warmer, dryer weather).



In the four years 2018 to 2021, an estimated 360 million m³ of timber has been damaged by bark beetles – equivalent to about 2.3 years' harvest.

More than 85% of damage in Central Europe in 2018-20 was caused by the spruce bark beetle.

THE SPRUCE BARK BEETLE OUTBREAK: AUSTRIA



Wood damaged by storms, snowfall and bark beetles in Austria; green: storm and snowfall in million m³, red: bark beetle in million m³

Source: Documentation of forest-damaging factors (DWF) based on information provided by district forest inspectorates (and prior surveys) © BFW

In 2021, 1.97 million m³ of bark beetle-damaged log wood were recorded in Austria, which is around 25% less than in 2020.

Over the last few years, the situation improved in the hardest hit regions of Lower and Upper Austria, while other regions have seen a massive reproduction of bark beetles.



THE SPRUCE BARK BEETLE OUTBREAK: GERMANY

LOG HARVEST/DAMAGED WOOD GERMANY | 2015–2024

in million cubic meters



Sources: Destatis, * BMEL, ** Holzkurier's projection | © Holzkurier 2022

Last year, 93% (37.6 million m³) of the damaged wood were softwood and 7% (3 million m³) were hardwood. The area which needs reforestation is estimated at 99,400 ha, compared to 75,600 ha in 2020. In 2020, Germany had reported 66.3 million m³ of damaged wood. 40% of beech, oak and spruce trees show clear crown defoliation – a sign of damage and reduced vitality of the trees.

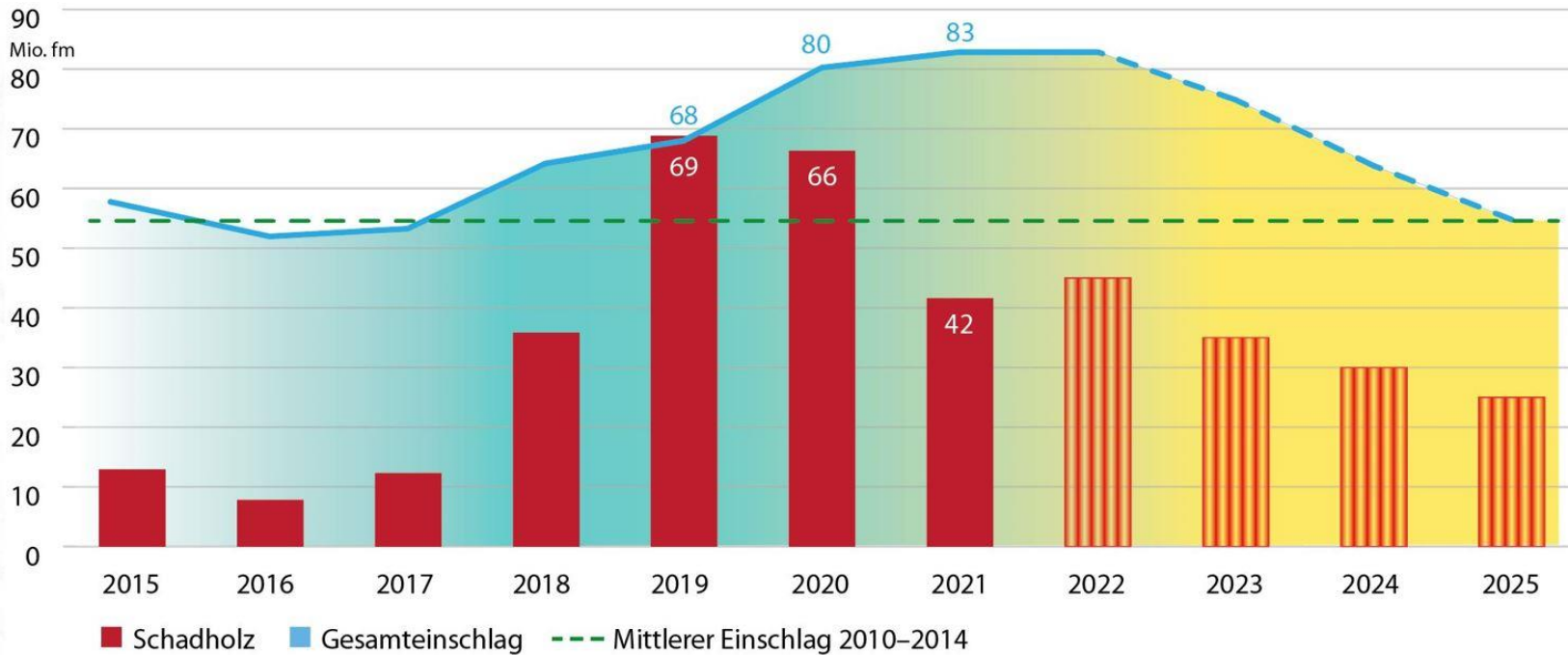
Based on initial projections by the nationwide survey on the condition of forests, the German Federal Ministry of Agriculture expects 21 million m³ of damaged wood in 2022 – which would be half the volume recorded in 2021.

Last year, it was revised slightly downwards to 40.6 million m³.



DEVELOPMENT IN GERMANY

Schadholzbilanz Deutschland 2015-2025



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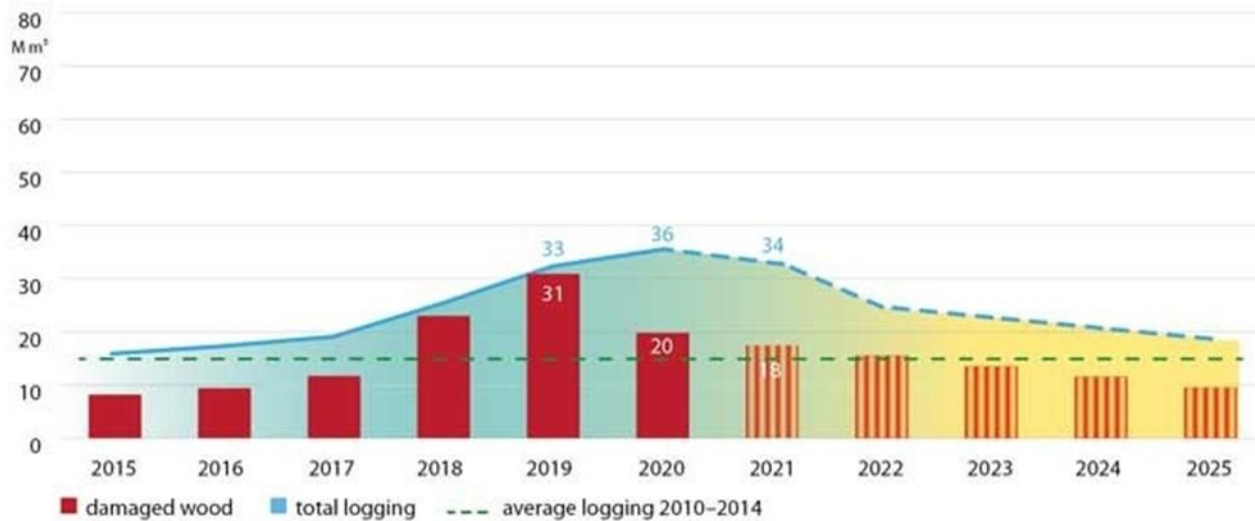


Austria, there will be a lot of damaged wood in the south this year (2 million m³ in Carinthia, 1 million m³ in Tyrol)

THE SPRUCE BARK BEETLE OUTBREAK: CZECH REP.

LOG HARVEST/DAMAGED WOOD CZECH REPUBLIC | 2015–2024

in million cubic meters



Sources: VÜLHM, Czech Forest, Holzkurier's projection (2022–2024) | © Holzkurier 2022

The main reasons for the decrease in damaged wood is attributed to more favorable weather conditions, which prevented a third generation of bark beetles and improved the vitality of the trees. Furthermore, a large volume of beetle-damaged wood was quickly removed from the forests and new sales opportunities were found.

According to estimates by Czech Forest, damage from devaluation, premature and difficult harvest reached €470 million (CZK 11.7 billion) in 2021.

In 2020, around 35 million m³ of calamity-damaged wood were harvested, and approximately 4 million m³ had yet to be removed at end of 2021.



INITIAL IMPACT OF CENTRAL EUROPEAN WOOD MARKETS

Increased harvests



- Increased harvest for sanitation and salvage.
- Increase of ~30 million m³ from 2010-17 average (155 million m³) to peak in 2020 (185 million m³).

Additional wood supply



- Additional log supply of 20-30 mln m³ per year.
- Mainly in Germany and Czech Republic, softwood, and large share of sawlogs.

Downward price pressure



- Lower sawlog and pulplog prices in 2019-20 with increased supply.
- Stronger sawlog prices from 2021 with global lumber rally.

Increased log & lumber export



- Increased export of softwood sawlog to China, from almost nothing pre-outbreak to 8 million m³ in 2020.
- Decreased log import from rest of Europe, e.g., Norway.
- Increased export of lumber to Asia and US.

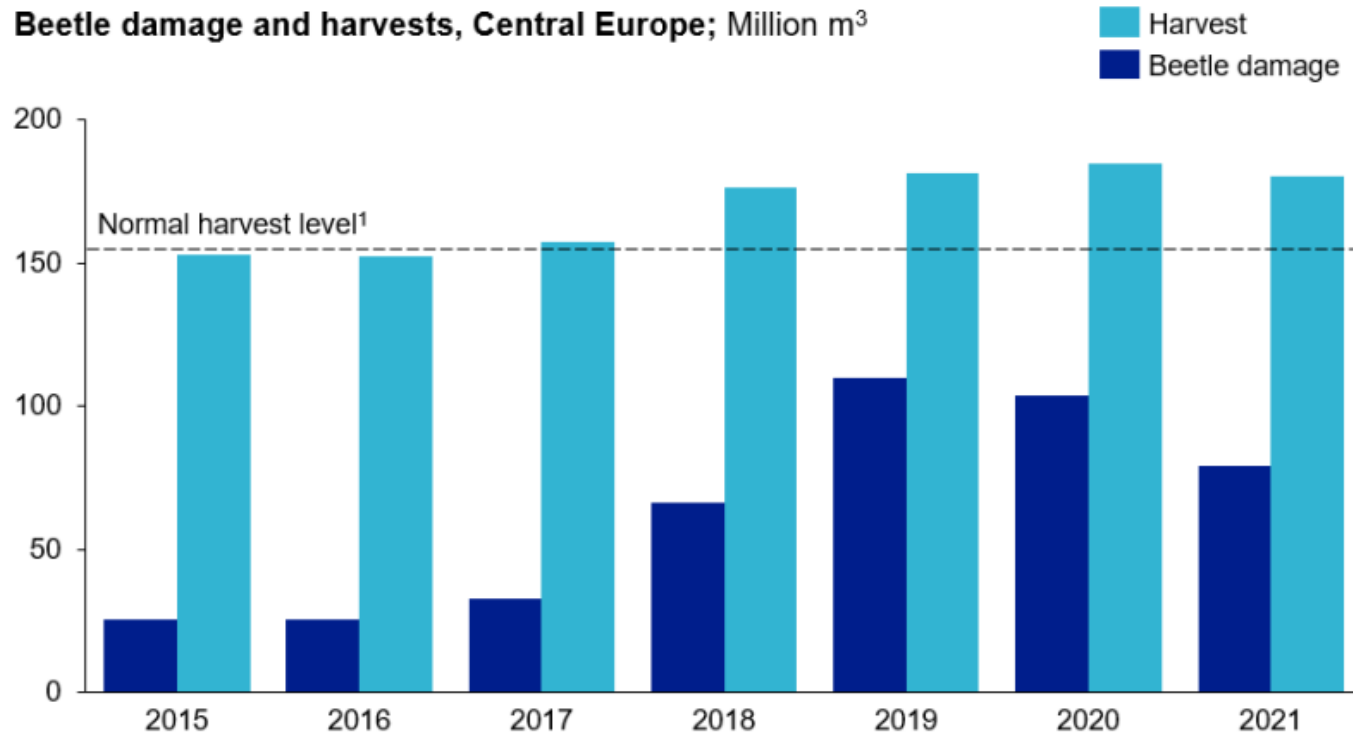
Source: WRI/OA analysis

Not all damaged trees were salvaged in time: this led to “two-tier” pricing of sawlogs, with lower prices for drier damaged logs.



DEVELOPMENT OF DAMAGE AND HARVESTS

Beetle damage and harvests, Central Europe; Million m³









1. Average 2010-2017

Source: UNECE; FEA. WRI/OA analysis

- Harvests rose from pre-outbreak average of 155 mln m³ to peak of 185 mln m³ in 2020.
- Additional supply of ~100 mln m³ (~25 mln m³ per year) in 2018-21e.
- Coincided (fortunately) with strong lumber markets in 2020-21.
- Harvest already declining, 2022 expected to be ~4% below peak (2020).



CHANGES IN FOREST MANAGEMENT TO MITIGATE BARK BEETLE RISK

Risk factors for bark beetle	Likely changes in forest management	Possible implications for wood markets
 Hot dry weather; Water-stressed trees and favorable conditions for beetle. Increasing with climate change.	Increased focus on biodiversity (tree species and full forest ecosystem) to increase forest resilience.	Increasing supply risk with future outbreaks. Reduced allowable harvest with more focus on biodiversity.
 High share of spruce.	Diversifying species mix; e.g., Douglas-fir, fir, pine, larch, beech, oak. More mixed forests (species, age class).	Reduced share of spruce, more other species.
 Mature / overmature stands (old trees).	Shorter rotations; e.g. in Germany considering 40-50 yrs, in Czech Rep. from 120 down to 70-80yrs. More active forest management	Smaller diameter logs, higher overall yield (long-term). Increased harvesting in passively managed private forests.
 Sun-exposed trees; exposed to south, limited branches or small canopy.	Reduced thinning in old stands.	Limited impact.
 High levels of dead wood.	Rapid and complete clean-up after storms.	Sharper swings in prices, increased need to quickly ramp up/down production.
 Proximity to infected trees (~100 meters considered critical).	Buffer zones around infected areas.	Limited impact.

Source: Interviews; WRI/OA analysis



GLOBAL IMPLICATIONS

Reduced harvest in Central Europe in 2025-2030 will impact softwood log and lumber markets globally.

Log exports from the region grew from 11 million m³ in 2015 to 33 million m³ in 2021, mainly from Germany and the Czech Republic.

Net export is expected to swing back to net import, causing tighter softwood markets in Europe and beyond.

China has been a significant recipient of Central European sawlogs and will be challenged to replace these volumes with imports from other key sources (*New Zealand, Russia and the USA*).

Competition on European markets will likely intensify as Chinese imports seek to outprice domestic buyers.

Sawmills in Central Europe will face both higher sawlog prices and lower sawlog availability, threatening their cost position, and in some cases, their continued operation.

Lumber exports from the region, which grew by 4 million m³ in 2016-2021 cannot be sustained at current levels – especially now when the war in Ukraine will lead to reduced lumber imports to Europe from Russia, Belarus, and Ukraine.



CONCLUSIONS:

Forests in central Europe have recently suffered extensive damage from a bark beetle outbreak, leading to temporary increases in harvest, lumber production and log export.

According to a recent study from Wood Resources International and O'Kelly Acumen, Central European wood supply will decline towards 2030 in the wake of the outbreak.

New forest management practices to minimize the risk of future outbreaks is expected to have long-term implications for wood quality and availability





Thank you.

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