



Global Forest Resources and Timber Trade

Lead Author: Ed Pepke, PhD

Supporting Authors: Kathryn Fernholz,
Harry Groot, Mark Jacobs, Gloria
Erickson, and Ashley McFarland

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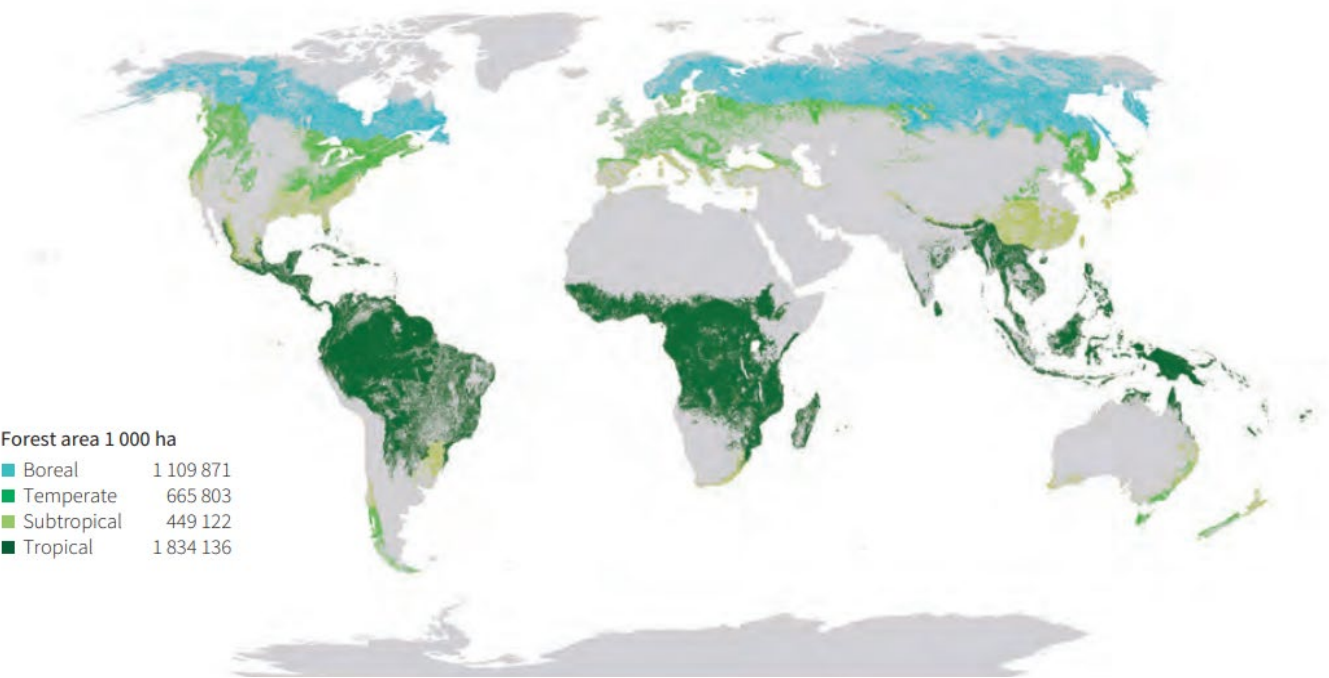
Introduction

This Dovetail Partners report updates our prior reports and is especially relevant now in 2021 following COVID-19's impact on the forest sector. Another pertinent reason for an update is the recent publication of the Global Forest Resources Assessment by the Food and Agricultural Organization of the United Nations (FAO). FAO is also the major source of long-term data series on forest products markets. The report begins with an analysis of the global forest resources (the supply side), then analyzes global trade, production and consumption (the demand side). Although the report is global, with a focus on the United States (U.S.) because of our main readership, it includes insight into the tropical timber markets. Before concluding both market trends and market and political forces impacting trade are considered. As usual in Dovetail reports, we finish with the "Bottom Line". References are in footnotes as well as in the last section.

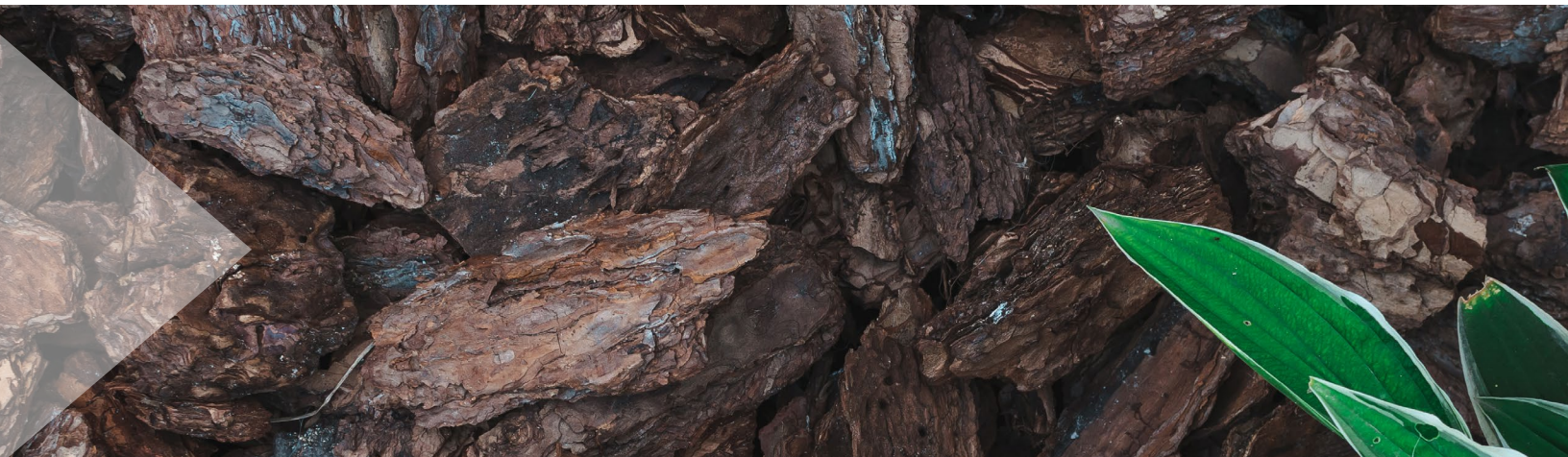
Global forest resources

Where are the world's forests? The world's forests are typically divided into temperate and tropical, and cannot always be attributed to political boundaries because some countries have both forest types. The largest proportion of forests are tropical (45%), followed by boreal (27%), temperate (16%) and subtropical (11%) (figure 1).

Figure 1. Global forests, 2020.

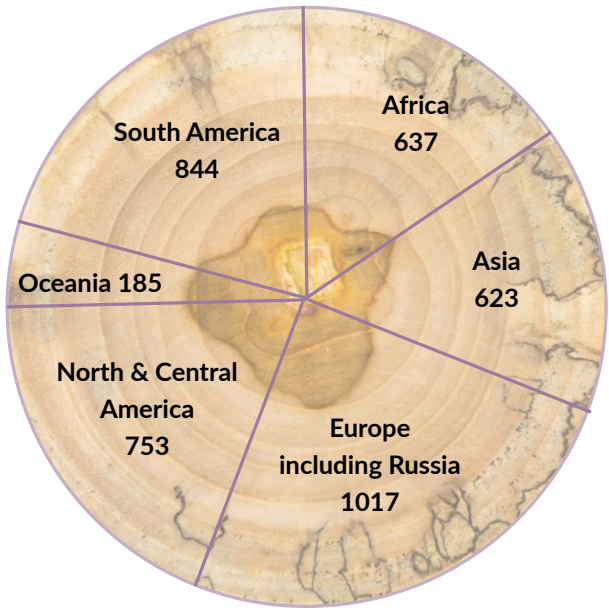


Source: FAO, Global Forest Resources Assessment, 2021.



The 4.1 billion hectares of forests are distributed unequally by continent (figure 2).

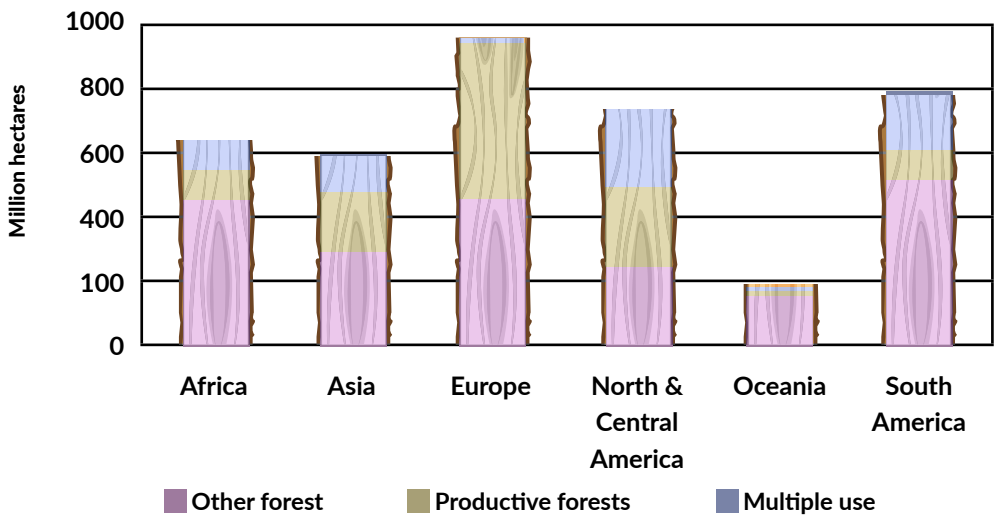
Figure 2. Forest area by continent, millions of hectares, 2020.



Source: FAO, 2021.

While this distribution of forests shows their locations, and the area of forests by continent, the percentages available for producing wood products and non-wood products is important for the production and trade. For various reasons, e.g. designated use, accessibility, etc., the continents have different volumes available for harvest (figure 3).

Figure 3. Production and multiple use forests, 2020.



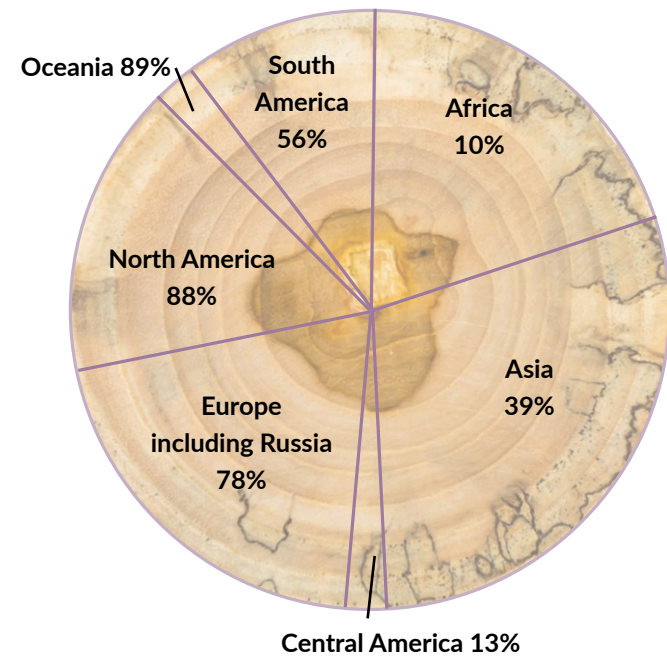
Note: Production forests are designated by FAO to be managed mainly for timber, fiber, bioenergy and/or non-wood forest products. Multiple use forests may also supply wood fiber, depending on the management regime. Percentages indicate the forest area designated as production and multiple-use forests together. "Other forest" includes forests with primary functions of protection of soil and water, conservation of biodiversity, social services, or other functions that are neither production nor multiple use.

Source: FAO, 2021.

Knowing the area available for production of wood fiber does not indicate the intensity for which the forests are managed. Globally only 4% of the growing stock is harvested annually. Thus, despite a reduction in the area of forests primarily due to land conversion to other uses such as agriculture, the world's forests still produce more than the amount harvested. But growing stock encompasses all diameters and all species, and thus in some forests, there exists overharvesting of selected species and the larger diameters.

The intensity by which the world's forests are used for the production of wood and paper products differs considerably by continent (figure 4). In Africa woody material is used mainly for fuelwood, often inefficiently; 90% of harvested wood is burned for cooking and heating. Europe's production of wood fuel is relatively high (22%) because of the European Union (E.U.) and member countries' governmental policies and incentives to promote renewable energy.

Figure 4. Percent of available roundwood harvested for industrial uses by continent, 2019.

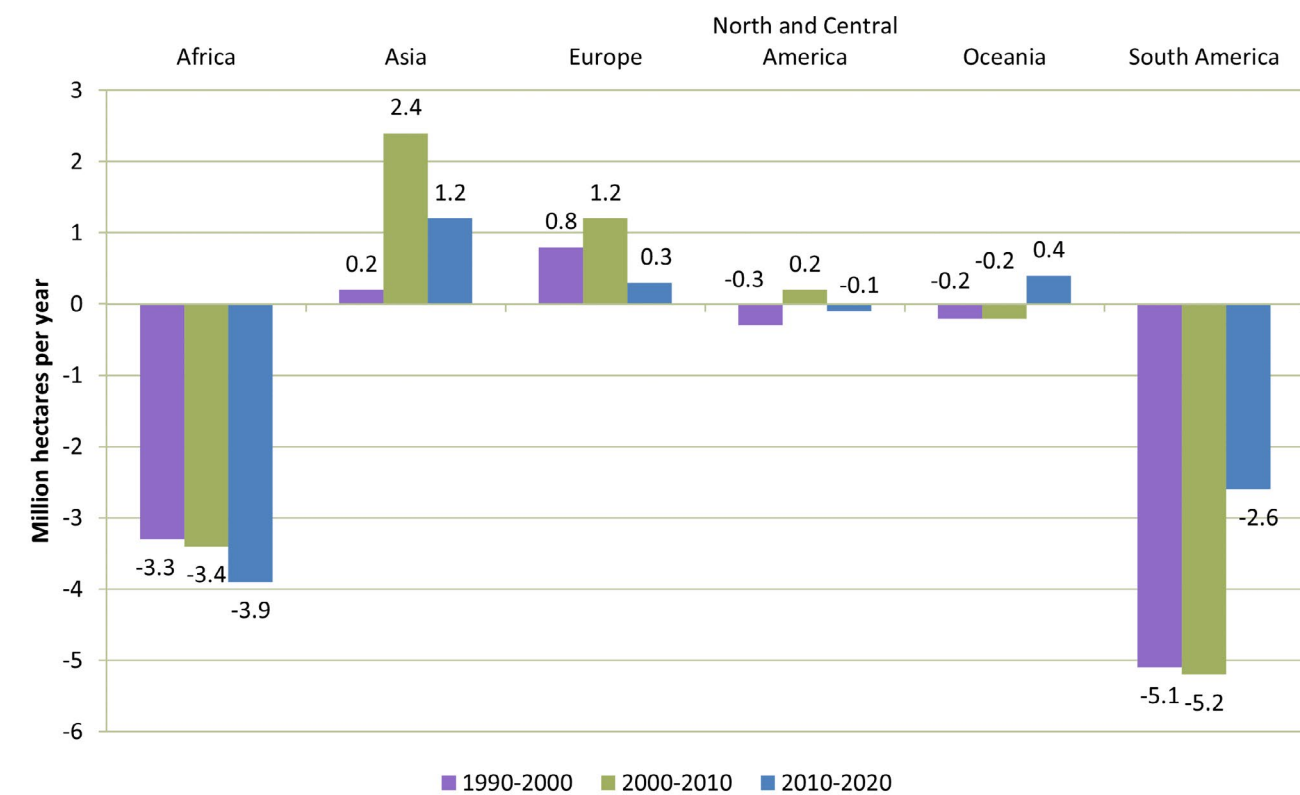


Notes: The sections of the chart represent the share of global volumes of all roundwood (industrial roundwood and wood fuel) (Africa 20%, Asia 29%, Central America 2%, Europe including Russia 21%, North America 15%, Oceania 2%, and South America 10%). The percentages are the volume of roundwood used for industrial uses, i.e. mainly sawlogs and pulpwood. The remainder is the volume used for wood energy. For example, 90% of roundwood in Africa is used for energy, primarily for cooking and heating.
Source: FAO, 2021.

The most important issue facing the world's forest is deforestation. FAO monitors forest area in part to assess the development of deforestation. Over the past three decades, the world has lost 177 million hectares of forest (figure 5). This is more than the size of the land and water area of Alaska, or approximately the size of the entire Midwest of the U.S. (without Missouri and Kansas). The causes of deforestation include:

- Conversion from forest to crop and pasture land
- Illegal logging
- Conversion to urban land
- Climate change bringing about damage and mortality from drought, fire, insects or disease.

Figure 5. Forest area change, 1990-2020.



Source: FAO, 2021.

The Collaborative Partnership on Forests, a group of 15 international organizations working on forestry, issued a joint statement in 2021 highlighting the need to halt the destruction of the world's forests. The statement begins, "Halting deforestation is an essential lever in the Decade of Action to achieve the [United Nations] Sustainable Development Goals by 2030, and for confronting the 'quadruple planetary emergency,' comprising a climate crisis, a nature crisis, an inequality crisis and a global health crisis. It requires concerted action by governments, the private sector and civil society to achieve transformational change in food systems and to promote sustainable agricultural and forest value chains that halt deforestation."¹ Readers are encouraged to note the 14 points in the statement concerning the impacts and means to reverse deforestation.

¹Collaborative Partnership on Forests, 2021. Challenges and opportunities in turning the tide on deforestation. <http://www.cpfweb.org/50449-0941d79c54a6810d4c9eb2f45bbcb25f7.pdf>



FAO conducted its periodic Global Forest Resources Assessment in 2020. The key findings were:

1. Forests cover nearly one-third of the land globally
2. Global forest area is decreasing, but the rate of loss has slowed since 1990
3. Africa has the highest net loss of forest area, followed by South America
4. Deforestation continues, but at a slower rate
5. Over 90% of the world's forests have regenerated naturally
6. Plantations account for approximately 3% of the world's forests
7. More than 700 million ha of forest are legally protected areas
8. Primary forests, where there is no visible indication of human activity, cover approximately 1 billion ha
9. Over 2 billion ha of forests have management plans
10. Fire is a prevalent forest disturbance in the tropics. However, insects, diseases, fire and severe weather damage temperate and boreal forests too.
11. Most forests are publicly owned, but the share of private ownership is increasing
12. With a reduction in forest area, growing stock is declining, although it is increasing per unit area
13. Total forest carbon stock is decreasing
14. 30% of all forests are managed primarily for the production of wood and non-wood forest products and when adding forests designated for multiple use, the area increases to nearly 2 billion ha, equal to 46% of the world's forests.
15. 10% of the world's forests is allocated for biodiversity conservation
16. The area of forest designated for soil and water protection is increasing
17. More than 180 million ha of forests is used mainly for social services, including recreation, tourism, education research and conservation of cultural and spiritual sites.

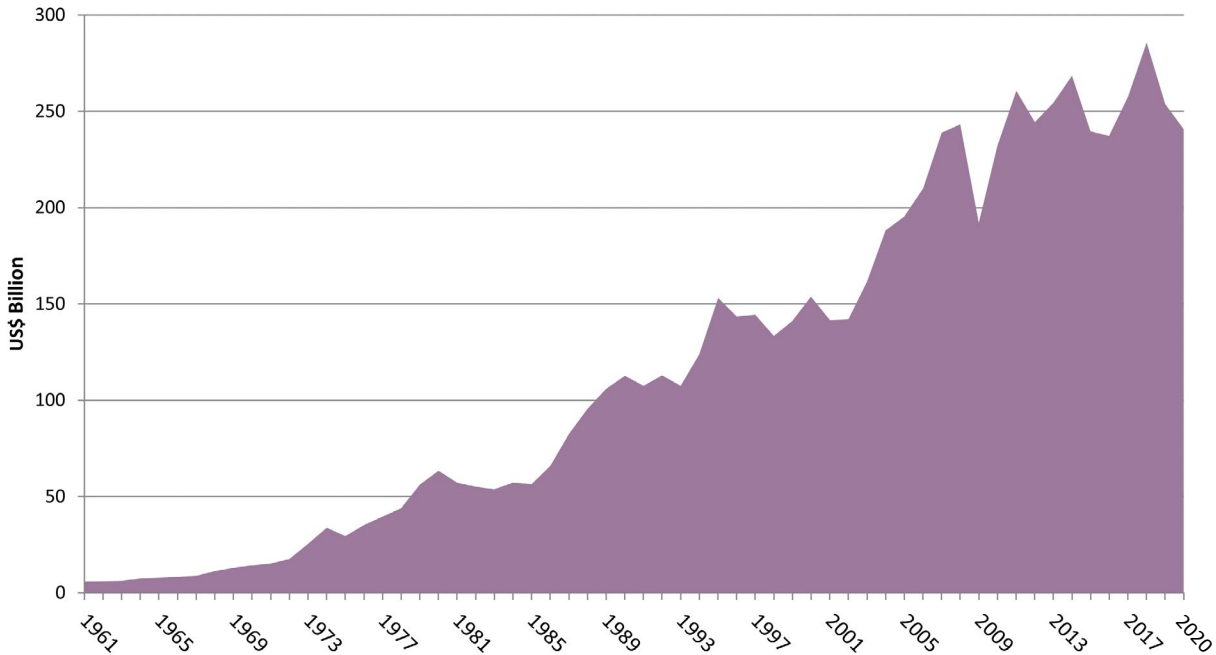


²FAO.2020. <http://www.fao.org/forest-resources-assessment/2020/en/>
³FAO, 2020. Global Forest Resources Assessment 2020—Key findings. <http://www.fao.org/3/CA8753EN/CA8753EN.pdf>

Global trade, production and consumption

It is the demand for wood and paper products which drives the forest sector. Globally, the trade of wood and paper products has been rising, albeit with downturns associated with economic conditions, for example recessions in 2007-2008 in part brought on by the subprime mortgage crisis in the U.S. (figure 6). In total, imports should equal exports globally, because one country's exports are other countries' imports, thus the graph is based on imports.

Figure 6. Global trade of wood and paper products⁴, 1961-2020.



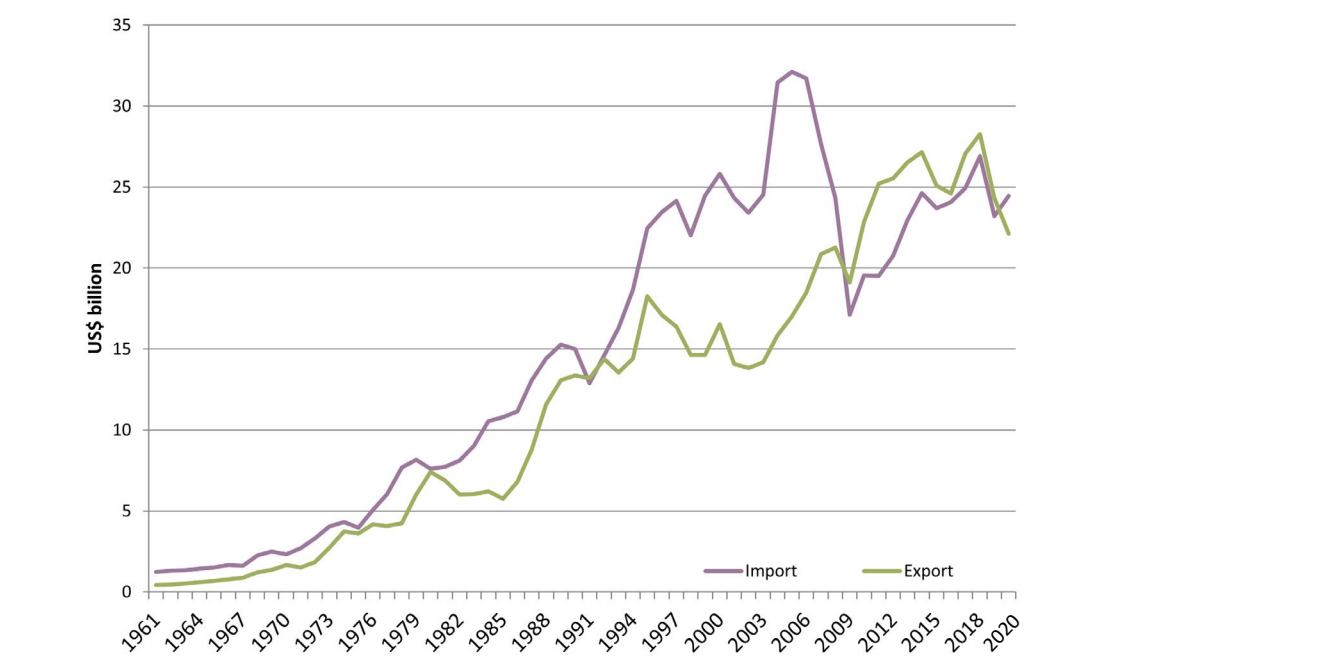
Source: FAO, 2021.

The U.S. has the greatest demand of any other single country for wood and paper products, but despite its vast forest resources, it was a net importer (i.e. importing more than exporting) of these products until 2009 (figure 7). The global economic and financial crisis in 2008 caused housing construction and furnishings demand to nosedive. Trade collapsed, but when it recovered in 2010, imports were lower than exports: the U.S. had become a net exporter until 2018. In 2018 U.S. tariffs placed on wood and paper products caused a downturn in both imports and exports, as some key trading partners reciprocated, especially China. In 2017 (the most recent trade flow data at FAO), the U.S. imported 61 percent of its primary processed wood products from Canada, of which 90 percent was softwood lumber.⁵

⁴FAO's grouping of "forest products" includes industrial roundwood, sawnwood (lumber), wood-based panels, wood pulp, paper and paperboard (cardboard), wood chips and residues and wood fuel.
⁵Primary-processed wood products included industrial roundwood, sawnwood/lumber, veneer, plywood, wood chips and particles.



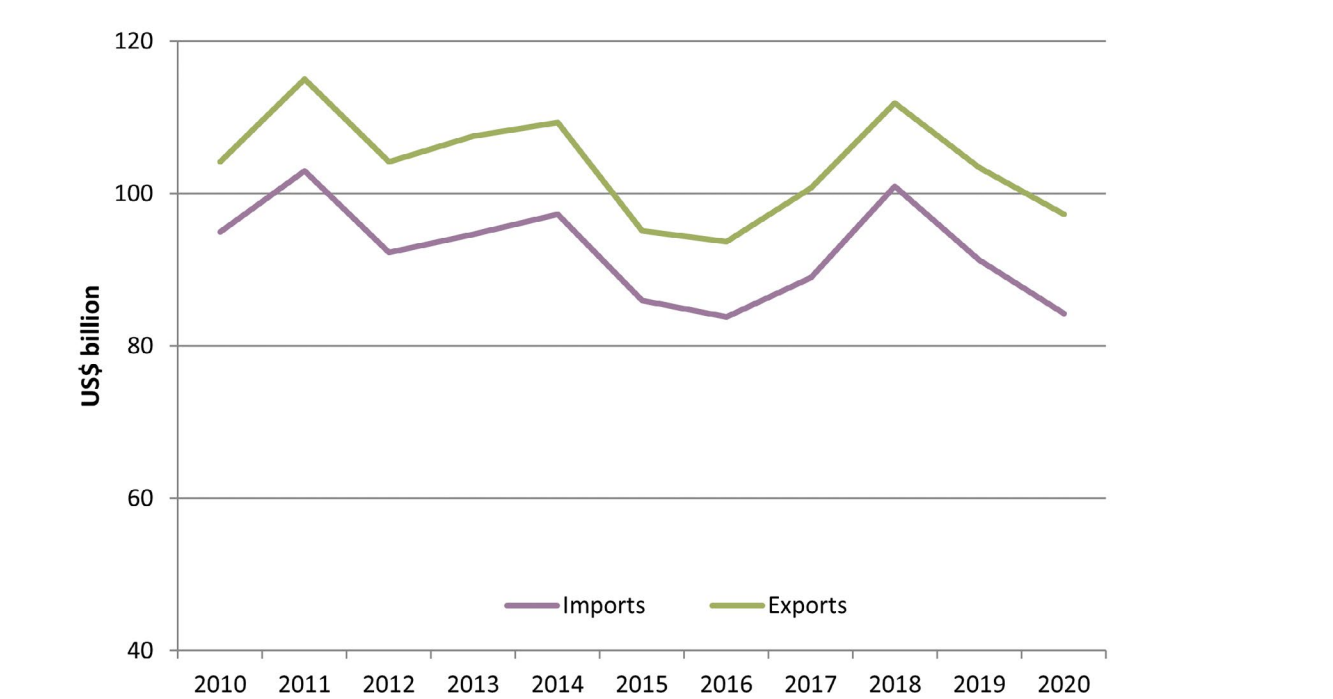
Figure 7. U.S. trade of wood and paper products, 1961-2020.



Source: FAO, 2021.

The E.U.'s import of wood and paper from 2010 to 2020, both temperate and tropical, has fluctuated, but has not changed significantly (figure 8).

Figure 8. E.U.-28 trade of wood and paper products, 2010-2020.

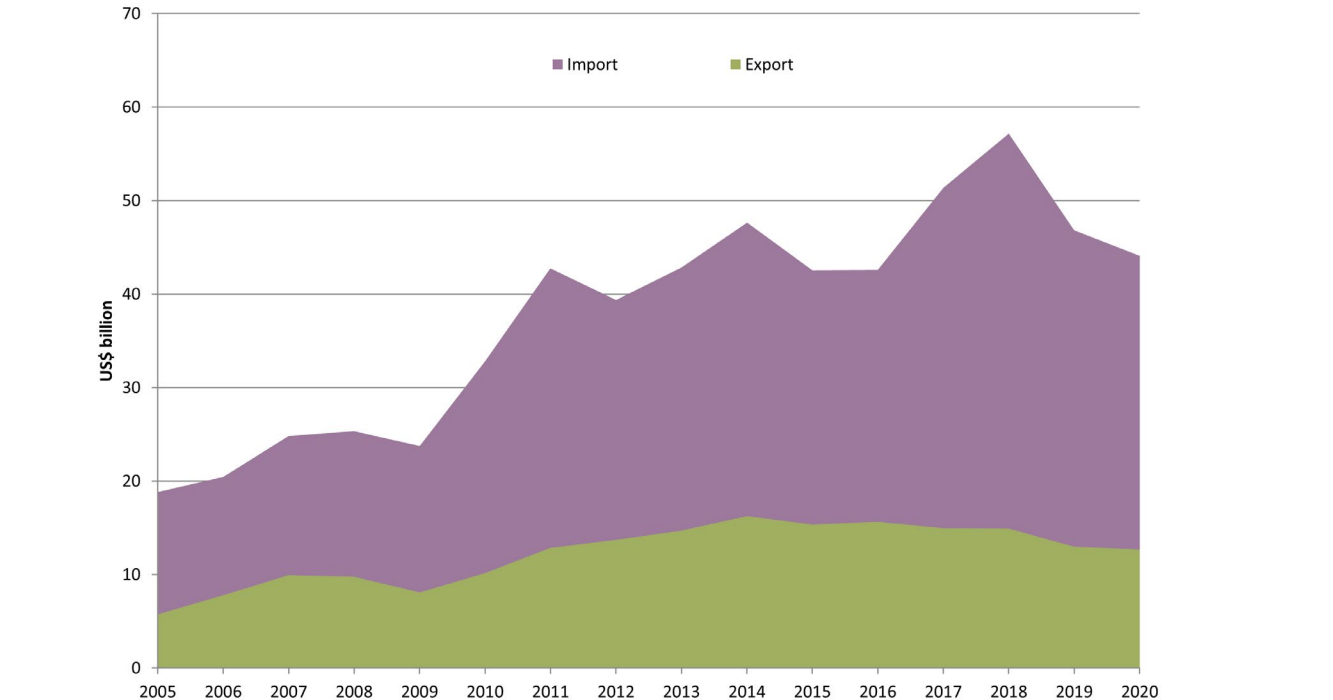


Note: E.U.-28 including United Kingdom for all years.

Source: FAO, 2021.

China's import of wood and paper, both temperate and tropical, has escalated over the past 15 years (figure 9). Despite its ubiquitous export products, domestic consumption is taking more and more of their production as quality of life and incomes rise.

Figure 9. China's primary forest products trade, 2005-2020.

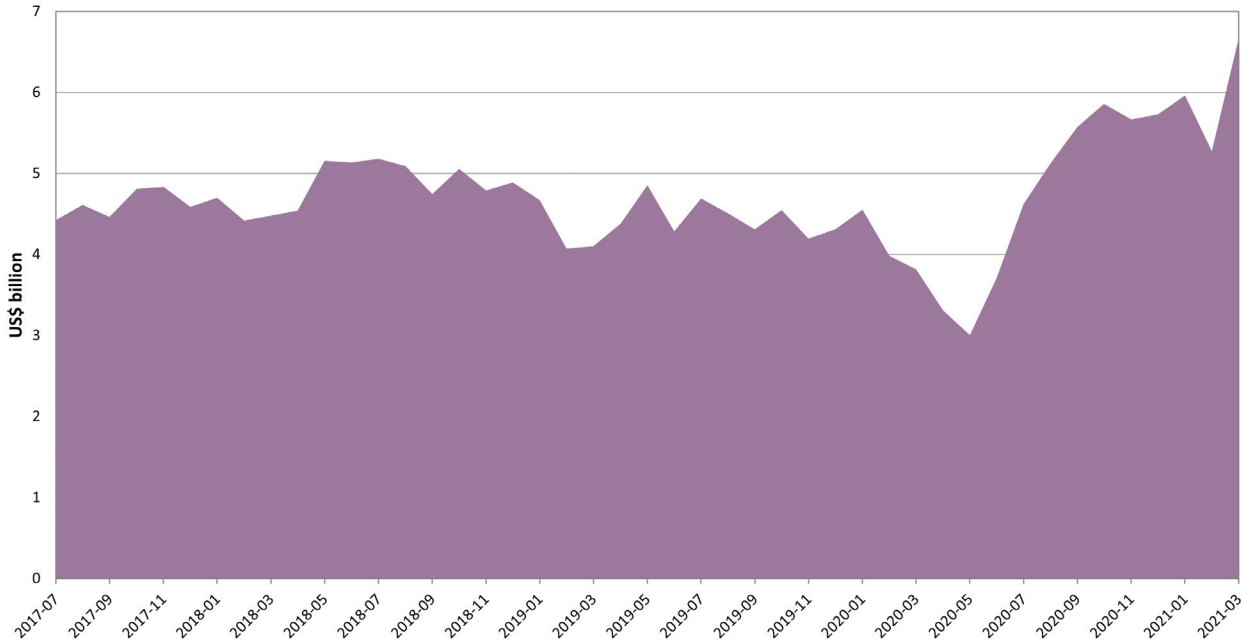


Source: FAO, 2021.



COVID-19 impact on forest product markets. In early 2020, the COVID-19 pandemic and government-mandated confinements of populations and stopping of business and commerce had a disastrous impact on global trade. The U.S. imports of wood products and secondary-processed products such as furniture declined sharply from December 2019 to April 2020 (figure 10).

Figure 10. U.S. imports of primary and secondary wood products, July 2017 through March 2021.



Source: Sustainable Timber Information Exchange, 2021.

Overall in the UN Economic Commission for Europe (UNECE) region⁶, consisting of North America, Europe and the Commonwealth of Independent States, consumption of primary-processed wood and paper products declined sharply in early 2020, but rebounded in mid-year; however, the region’s consumption of wood and paper products fell in 2019 and again in 2020, albeit not for all subregions⁷. As an example of what occurred in many countries’ markets around the world at the start of the COVID-19 pandemic, in the Western Balkans⁸, exports of primary processed and secondary-processed wood products fell considerably in March and April 2020, but then rebounded in May (Figure 11).

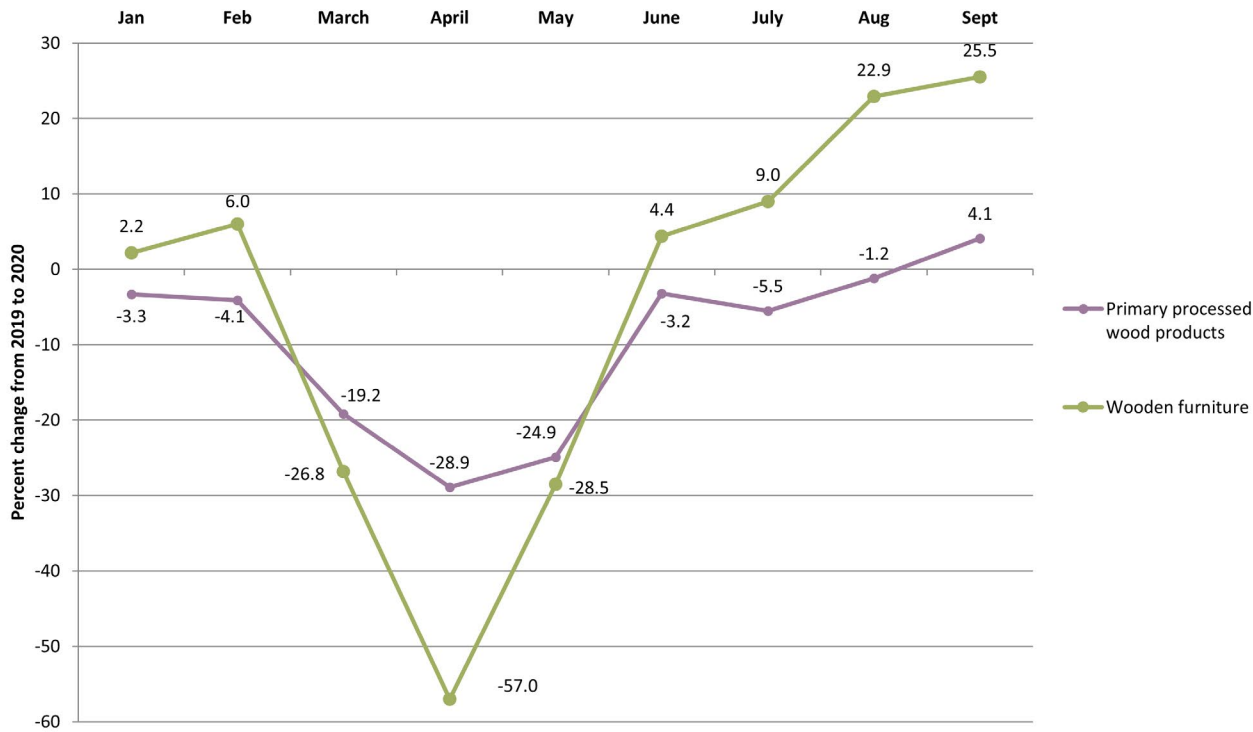
⁶The UNECE geopolitical region includes 56 countries: North America (Canada and the U.S.), the EECCA (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan), E.U. (E.U.)-27 (without the United Kingdom) and 15 additional European countries and Israel.

⁷UNECE/FAO Forest Products Annual Market Reviews 2019-2020 and 2020-2021.

⁸The Western Balkan region includes Albania, Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia.



Figure 11. Impact of COVID-19 on the exports from the Western Balkans, 2020.



Source: Glavonic, B. COVID-19 impacts on the forest sector in countries in the Western Balkans. Geneva Timber and Forest Discussion Paper 89, UNECE/FAO, 2021.

Starting in May 2020, an unexpected, extraordinary rebound began which led to record levels of U.S. imports. In the U.S., as well as in Europe and other countries, the confinement meant that working and schooling were occurring remotely at home. The need to add or convert living space into working space drove the do-it-yourself, remodeling and housing construction sectors. Housing prices escalated as people realized their jobs could be done away from the urban area and thus they moved, often to housing with home-office space or to more desirable locations. In the U.S., lumber and other wood building products were in short supply due to sharp demand increases coupled with supply chain disruptions, resulting in record high prices for some commodities such as structural lumber, e.g. US\$1000 per 1000 board feet in mid-2021, as compared to US\$345 earlier in the year.

Dovetail Partners produced a report on “COVID-19 Impacts on the Forest Sector: 2020 and Beyond” which describes the challenges of the forest sector to operate under pandemic conditions.⁹ In addition to building materials, the forest-based industries benefited from the production of personal protective equipment, for example paper masks, medical gowns, etc. The world experienced an extraordinary run on hygiene paper products in 2020, resulting in supply shortages despite paper mills increasing production.

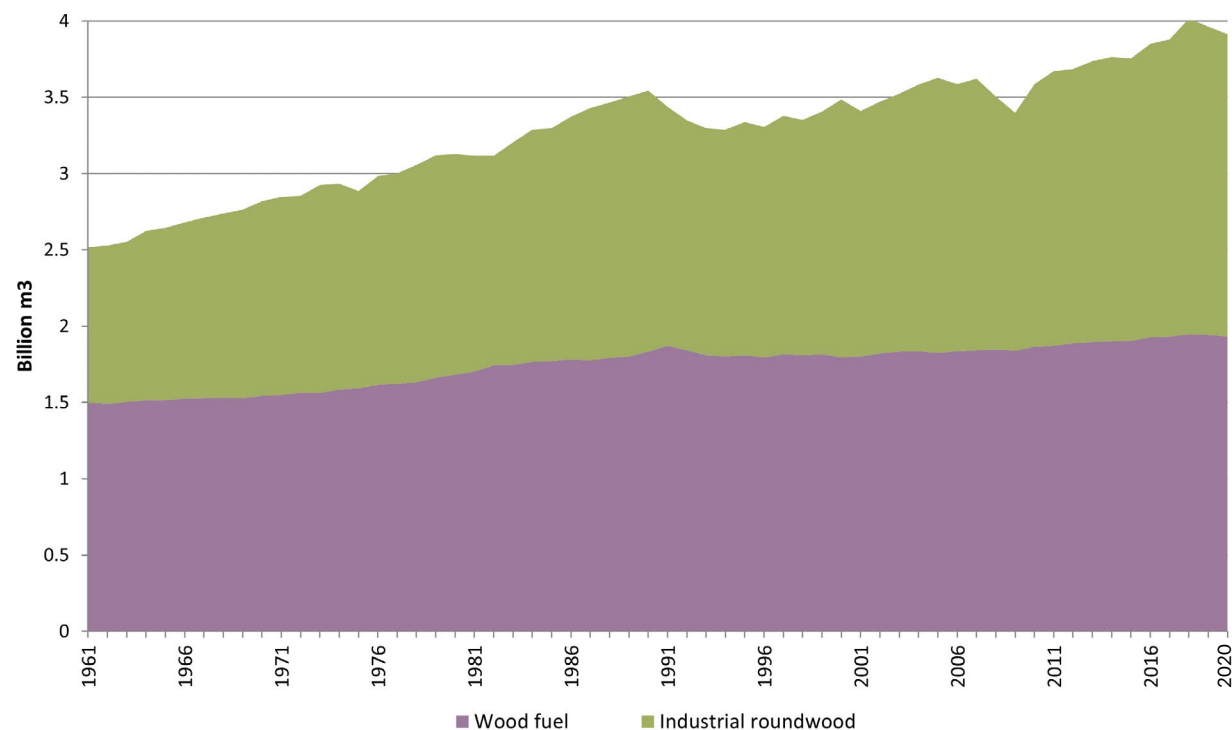
⁹COVID-19 impacts on the forest sector: 2020 and beyond. <https://dovetailinc.org/portfoliodetail.php?id=5fd7881942636>



Global consumption and production. Globally, all of the wood which is produced should be consumed – therefore the production is used as an estimate of the consumption. Until 2018, most of the wood harvested has been used inefficiently as fuel for heating and cooking (figure 12). For the first time in 2018, the production of industrial roundwood, which will be transformed into further processed products, rose slightly to 2.1 billion m3, over the production and consumption of wood fuel (1.9 billion m3).

Despite government policies which provide incentives to produce and use renewable energies, such as from wood, its consumption has stagnated for the past 10 years. It must be said that the statistics for wood fuel production and use are estimates since it is impossible to accurately assess the volume which is burned inefficiently.

Figure 12. Global production (= consumption) of industrial roundwood and wood fuel, 1961-2020.



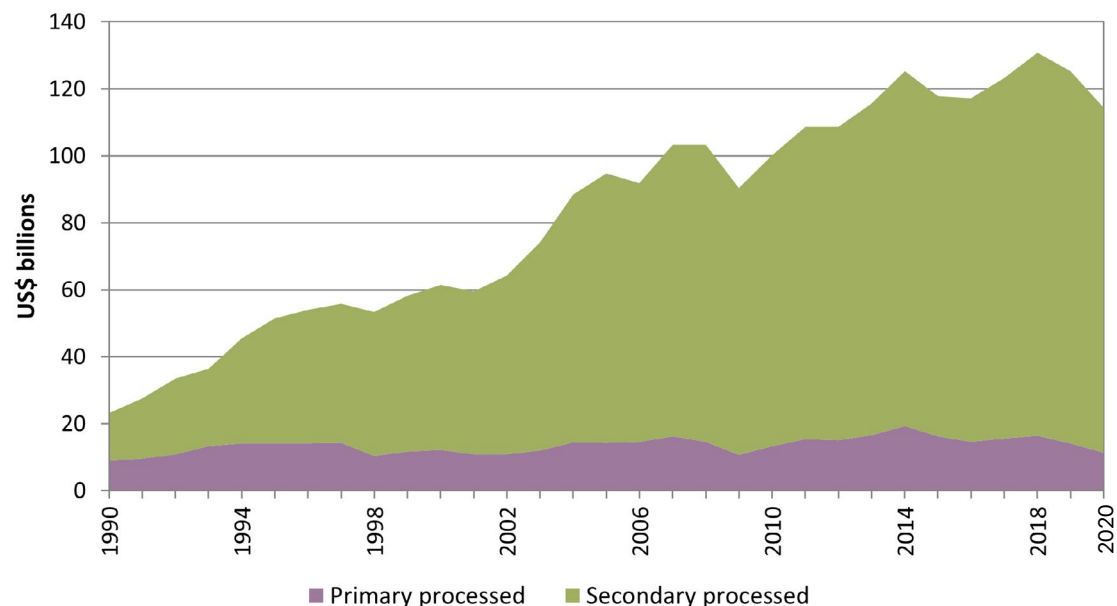
Source: FAO, 2021.



Tropical timber's role in the global scene

The tropical timber trade has increased over the past two decades, albeit unevenly. Primary-processed products, in this case industrial roundwood, sawnwood (lumber), veneer and plywood, have not increased substantially from 1990 to 2020 (from US\$9 to US\$10 billion) (figure 13). However, exports of value-added products increased from US\$1.7 to US\$22.8 billion over the same period with the development of domestic capacity to convert primary products and produce secondary-processed products in tropical timber countries. The data come from the International Tropical Timber Organization (ITTO) which includes these secondary-processed products: wooden furniture, builders' woodwork, mouldings and other secondary-processed wood products.

Figure 13. Tropical timber exports, 1990-2020.



Note: For this graph and the next, "timber" includes 4 primary products (industrial roundwood, sawnwood (lumber), veneer and plywood) and four groups of secondary processed, or value-added products (wooden furniture, builders' woodwork, mouldings and other secondary-processed wood products).

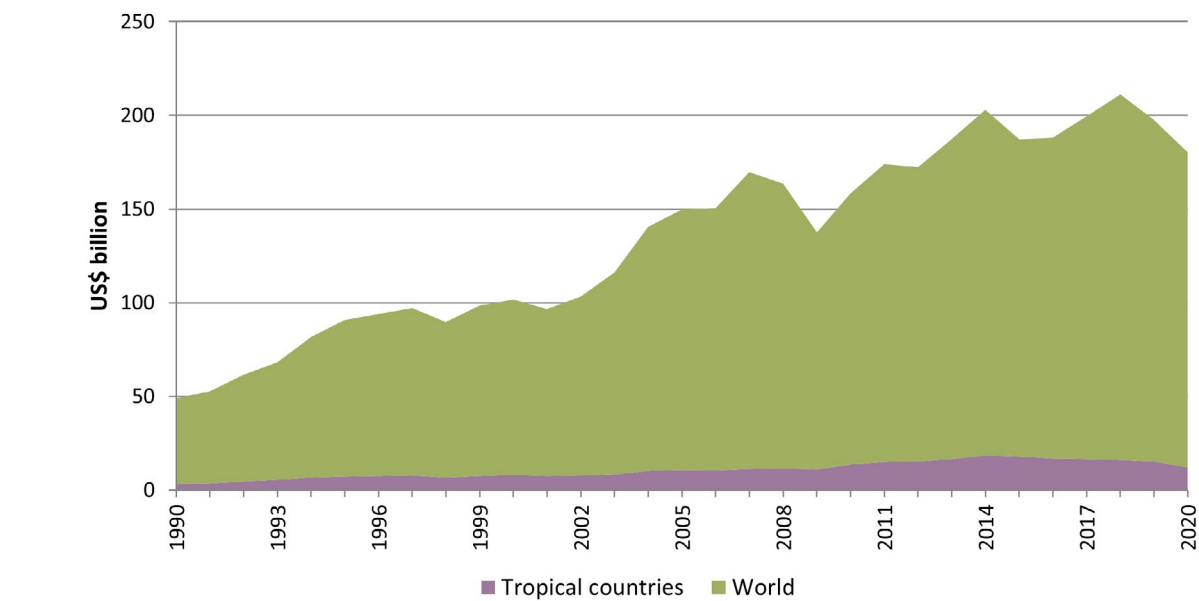
Source: ITTO, 2021.

Tropical wood product export's share peaked in 2015 at 11% of global wood products exports (figure 14). In 2020, tropical timber exports were negatively impacted by the COVID-19 pandemic and fell to 7% of global exports. Some tropical timber producing and exporting countries are benefiting from internationally recognized systems of assurance of legality and sustainability. Government policy initiatives have had a positive impact, e.g. E.U. Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan in 2003. The U.S. and the E.U. lead in establishing and enforcing laws which prohibit illegal wood imports to their shores which restore the confidence in tropical timber trade. The U.S. could reach record imports of tropical timber products in 2021, especially lumber, mouldings and plywood.¹⁰

¹⁰ITTO Market Information Service, https://www.itto.int/market_information_service/



Figure 14. Tropical timber exports compared to global timber exports, 1990-2020.



Source: ITTO, 2021.



Market trends

Forest product consumption continues to climb with population growth and increases in standards of living. Trade between timber-rich countries and countries which need wood-based raw materials will continue, although trade patterns may modify. For example, the tariffs placed on Chinese exports to the U.S. caused importers to search lower-priced alternatives. In 2021, Vietnam became the leading exporter of wooden furniture to the U.S. over China.¹¹

While the long-term trend is positive, as mentioned above, 2020 saw a downturn in global trade due to the COVID-19 pandemic.¹² Government measures to stop the spread of the disease included confinement of populations and stopping all but essential services. Some countries’ forest-based industries were restricted, while other countries viewed these industries as critical to supply wood and paper products.

“Build Back Better” is a common theme arising from the pandemic. In the case of the forest sector, this situation can provide an opportunity for reconsideration and long-term planning. The economic and social changes resulting from the pandemic provide an opportunity to holistically consider and plan the recovery and the future of the forest sector. In many instances, forest industries may have a comparative advantage to other sectors if commitments to Build Back Better include increased attention to addressing climate change, reducing fossil fuel use, and finding alternatives to non-biodegradable plastics and other non-renewable materials.

Market and political forces impacting trade

Certification of sustainable forest management, identified by a label on a wood or paper product, has been implemented since the 1990s. A label raises the awareness of sustainability issues and some international certification systems also attempt to ensure legality of the products—these facilitate responsible sourcing of wood and paper products. Dovetail published report “Forest Certification Update 2021: The Pace of Change” provides more information about the evolution and current state of three certification systems: Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) and the Sustainable Forestry Initiative (SFI).¹³

Proof of legality is essential for imports into the U.S. and the E.U. The U.S. enacted the Lacey Act Amendment in 2008 and the E.U. enacted the E.U. Timber Regulation. Both of these laws attempt to eliminate illegal trade. The E.U. established the FLEGT Action Plan in 2003 to reduce illegal logging by strengthening the sustainability and legality of forest management, improving forest governance and promoting trade of legally produced timber.¹⁴ Dovetail produced two reports which describe these policies in more detail. See “Responsible sourcing of forest products: The roles for government licensed timber and third party certification”¹⁵ Dovetail did an earlier report on “Understanding the Lacey Act” in 2013.¹⁶

In addition to the aforementioned tariff disputes between the U.S. and China, the U.S. has an ongoing dispute over Canadian exports of wood products. The problem has gone on for decades, with periodic, time-limited Softwood Lumber Agreements.¹⁷ When an agreement ends, the trade dispute revives. The most recent Softwood Lumber Agreement between Canada and the U.S. expired in October 2015. Limitations placed on imports from Canada have resulted in higher prices for U.S. consumers, and better profit margins for U.S. wood products producers. Reported prices for softwood lumber increased 121.1 percent and prices for hardwood lumber rose 31.6 percent from April 2020 to April 2021.¹⁸

¹¹ITTO Market Information Service.

¹²Healthy forests are key to “building back better”.

¹³Forest certification update. <https://dovetailinc.org/upload/tmp/1611160123.pdf>

¹⁴Forest Law Enforcement, Governance and Trade. <http://www.flegt.org/about-flegt>

¹⁵Responsible sourcing of forest products: The roles for government licensed timber and third party certification. <https://dovetailinc.org/portfolio/detail.php?id=5e260b333c589>

¹⁶Understanding the Lacey Act. http://www.dovetailinc.org/report_pdfs/2013/dovetaillaceyact1113_0.pdf

¹⁷Canada-U.S. Softwood Lumber Dispute. https://en.wikipedia.org/wiki/Canada%E2%80%93United_States_softwood_lumber_dispute

¹⁸US Bureau of Labor Statistics (BLS). 2021. Producer prices for lumber up 89.7 percent for the year ended April 2021. May 2021. Available at: <https://www.bls.gov/opub/ted/2021/producer-prices-for-lumber-up-89-7-percent-for-the-year-ended-april-2021.htm>

Conclusions

This report shows the opportunities and obstacles to further the development of global sustainable forest resources and sustainable forest products markets. Deforestation continues to be a blight on the forest sector and one that requires collaboration with other commodity sectors and policy innovation in order to be solved. While many countries are managing their forests sustainably, the deforestation issue continues to erode consumer confidence in the purchase and use of wood and paper products. Wood and paper consumption are rising slower than population growth, but as standards of living improve, so will the demand for wood, food, and other products that require responsible land use decisions. Market demand fell sharply in early 2020 due to the COVID-19 pandemic, but it quickly rebounded in mid-2020 with unexpected consequences of shortages of building materials and housing and rising wood products prices. Some product prices, such as lumber in the U.S., skyrocketed, but were falling at the time of writing this report.



The bottom line/recommendations

The world’s forest resources can continue to support increasing demand for wood and paper products if managed sustainably. The onus falls on importers to ensure that the products they trade are legal, from forest to delivery. Government policies are necessary for creating the framework for ensuring legal and sustainable trade. The forest sector’s recovery from the COVID-19 pandemic by Building Back Better is an opportunity to promote the attributes of the sector, the sustainable, legal supply of wood fiber, and the need for traditional as well as innovative wood and paper products. Communication by the forest sector of the attributes of wood, and its availability through certification of sustainability and legality are essential to maintain and grow market demand. Profitability in the forest sector comes from the demand side, i.e. “sustainable markets” which in turn finances the sustainable management of forest resources.



“The forest sector’s recovery from the COVID-19 pandemic by Building Back Better is an opportunity to promote the attributes of the sector, the sustainable, legal supply of wood fiber, and the need for traditional as well as innovative wood and paper products.

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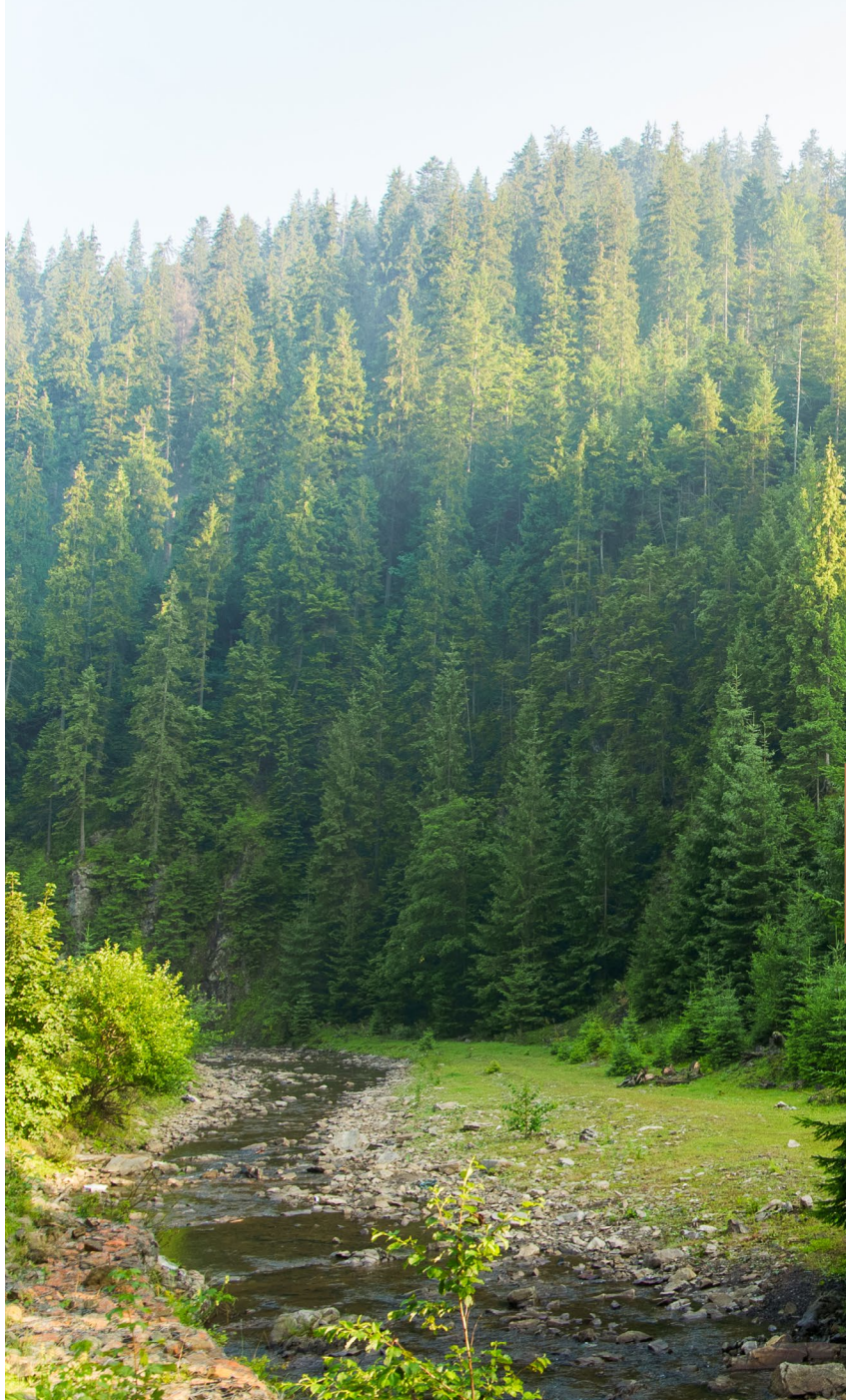
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